



COMPETITIVENESS MIRROR



2019

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

Albert Szent-Györgyi



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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. The Competitiveness Mirror aims to monitor how the targets and recommendations made by the MNB have been implemented so far, which contributes the necessary turnaround in competitiveness. The Competitiveness Mirror assesses Hungary's progress in competitiveness every year, based on the 330 recommendations published in the Competitiveness Programme. The monitoring system uses both descriptive and analytical methods for measuring the implementation of the central bank's recommendations. With the creation of this measurement system, which follows organically from the central bank's competitiveness work so far, the MNB will analyse and monitor Hungary's progress in competitiveness in a unique way by international standards.

The Competitiveness Mirror was prepared under the direction of Dániel Palotai, Executive Director for Economic Sciences and Priority Matters and Chief Economist. The Competitiveness Mirror was completed with the help of staff from the Directorate for Fiscal and Competitiveness Analysis, the Directorate Economic Forecast and Analysis, the Directorate Financial System Analysis, the Digitalisation Directorate, the Directorate Insurance, Pension Funds and Intermediaries Supervision, the Directorate Financial Infrastructures, the Directorate Monetary Policy and Financial Market Analysis, the Structured Finance Strategy Directorate, the Directorate for Social Relations as well as the Budapest Stock Exchange.

The Competitiveness Mirror is based on information available for the period ending 18 October 2019.

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Executive Summary

Since 2013, in accordance with its legal mandate, the Magyar Nemzeti Bank (MNB) has been carrying out its tasks with a broader perspective than previously and incorporates the in-depth analysis and assessment of Hungary's competitiveness into its traditional central banking and macroeconomic analytical framework, including formulation of recommendations as well.

The *Competitiveness Mirror* aims to monitor, in a structured manner, how the targets and recommendations made by the MNB in the *Competitiveness Programme* have been implemented so far, which supports the execution and thus contributes to the necessary turnaround in competitiveness. Launched in 2019, the *Competitiveness Mirror* assesses Hungary's progress in competitiveness every autumn, based on the 330 recommendations published in the *Competitiveness Programme*. The monitoring system uses both descriptive and analytical methods to measure the implementation of the central bank's recommendations. The chapters presenting the details provide a descriptive summary of the measures related to each recommendation, based on which the analytical chapter quantifies progress in implementation. Progress is evaluated in dual approach, because, in addition to a summary of the results, the remaining tasks are also highlighted. With the creation of this measurement system, the MNB will analyse and monitor Hungary's progress in competitiveness in a unique way by international standards.

The turnaround in competitiveness was made possible by the economic policy reforms after 2010, as the Hungarian economic model generated both macro-financial balance and dynamic economic growth. Successful fiscal and economic stabilisation began in 2010, followed by a turnaround in monetary policy from 2013 onwards. This re-established the long-absent coordination between the two main branches of economic policy, creating an economic model of macro-financial balance accompanied by dynamic GDP growth, in which ensuring full employment is a core element. As a result of the successful reforms, 9 years after Hungary's EU accession, the excessive deficit procedure of the European Union was abrogated, the public-debt-to-GDP ratio of Hungary was set on a downward path, a credit crunch was avoided due to the central bank's targeted programme, the foreign currency loans were completely phased out from household's balance sheets and the external vulnerability of the economy was significantly reduced by strengthening domestic sources of financing.

The Hungarian economy has been on track for convergence since 2013, 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; a turnaround in competitiveness is required to achieve this. Growth-friendly economic policy reforms came to fruition in 2013 and led to a turnaround in growth. As a result, the Hungarian economy expanded at a rate more than 2 percentage points higher than the growth rate in the euro area over the past six and a half years on average, which indicates the beginning of turnaround in convergence as well. However, over the long run, this growth surplus can only be maintained by the turnaround in competitiveness. This is because the economic growth in recent years was mainly based on quantitative factors, which have their limits. It is essential to switch Hungary's growth model into the knowledge- and technology-intensive phase, which requires the further strengthening of the qualitative factors of competitiveness.

The turnaround in competitiveness requires a comprehensive, objective diagnosis, the formulation of structural recommendations and the regular measurement of progress. 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. As there is no universal definition of competitiveness accepted uniformly by everyone, the path to successful convergence varies from country to country, and there is no single recipe available for it. The first step on the path towards successful convergence is to gain a deeper insight into international best practices, followed by the set up of an objective, comprehensive competitiveness diagnosis. The Magyar Nemzeti Bank discussed the first in 2016 in the book *Competitiveness and Growth* and the second in 2017 in the *Competitiveness Report*. The next step was to define the main areas to improve, the main directions and recommendations of the competitiveness reforms, into which the international

best practices can only be incorporated, taking into account country-specific factors. The macroeconomic conditions of the convergence path, the main areas for intervention and the key performance indicators were defined by MNB in the 2018 *Growth Report*, while the structural recommendations contributing to their implementation were published in the *Competitiveness Programme in 330 Points* in 2019, covering 12 key areas. The next milestone in the MNB's work in competitiveness is the publication of the *Competitiveness Mirror*, which supports Hungary's sustainable convergence by monitoring implementation of the recommendations.

Since the publication of the MNB's Competitiveness Programme in February, positive changes and initiatives have been observed in several areas, but the widespread implementation of the recommendations still requires numerous steps and comprehensive reforms. Based on the measures and announcements until 18 October 2019, 22 per cent of the MNB's Competitiveness Programme, weighted by priority, has already been implemented, and implementation of one half of the 330 recommendations has already started. Among the key areas covered by the Competitiveness Programme, the greatest progress has been made in the implementation of recommendations on enhancing the financial system, significantly supported by the MNB's targeted programmes. Nevertheless, in order to ensure that the private sector has a more efficient way of access to finance, the Hungarian financial intermediary system's cost-efficiency needs to be improved and diversification of the capital market should continue. The development of the Hungarian SME sector and the strengthening of Hungary's foreign trade and international economic relations have been supported by several government measures. At the same time, productivity and the economies of scale need to be further increased in the SME sector, and many reforms are necessary in the area of R&D&I. Public sector efficiency is supported by certain elements of the Economy Protection Action Plan announced in the spring of 2019, and the implementation of numerous recommendations concerning infrastructure development has already begun as well. But there is still ample room for manoeuvre for further strengthening e-governance, tax administration and the reduction of tax avoidance. As regards regional convergence, limited progress has been made, but one notable example is the launch of "Converging Settlements", a long-term government programme.

Hungary's greatest asset is the availability of well-qualified human resources, which is the key to successful convergence. The government's *Family Protection Action Plan* contributes to securing skilled human resources and the action plan encourages the necessary demographic turnaround with several programmes (financial support for child bearing, the personal income tax exemption of mothers in large families and the increased capacity of nurseries). However, this calls for further measures, mainly in supporting everyday life, family-friendly health care and further strengthening the family support scheme tied to employment. In terms of highly-qualified human capital, the strategy aimed at reforming vocational training and adult education can have beneficial effects even in the short run. However, in order to flexibly adapt to the fundamentally changing employers' expectations due to the Fourth Industrial Revolution, it is essential to ensure public education to focus more on basic skills including linguistic and digital skills, to increase participation in tertiary education and to make the spirit of lifelong learning become part of everyday life. Another factor that might contribute to the availability of the highly-qualified labour force is the further strengthening of health care prevention system and primary care, and in terms of financing, the establishment of Welfare Funds.

The MNB's system for measuring competitiveness

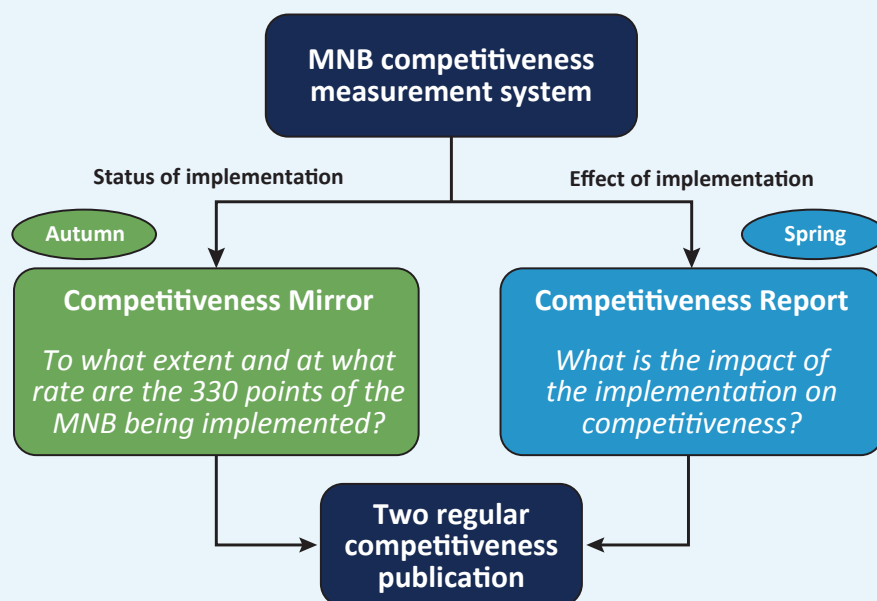
Since 2013, the Magyar Nemzeti Bank has been carrying out its work in accordance with its legal mandate with a broader perspective than previously, incorporating the in-depth analysis, assessment and enhancement of competitiveness into its analytical framework. In addition to its primary mandate to achieve and maintain price stability, the Magyar Nemzeti Bank is required by law to use the instruments at its disposal to support the economic policy of the government. Thanks to the reforms after 2010, Hungary's economy has been on track for successful convergence. However, this can only be sustained over the long run if an annual growth surplus of at least 2 percentage points over developed countries' growth is maintained. A competitiveness turnaround is required to further increase the economy's potential growth rate, and the necessary areas for intervention and recommendations were discussed in the MNB's *Competitiveness Programme*, underpinned by specific recommendations.

In past years, the MNB has analysed Hungary's competitiveness in several publications and put forward recommendations for its improvement. The MNB embarked on the in-depth and broad-scale analysis of Hungary's competitiveness status in 2015. As a first step, the 2016 book *Competitiveness and Growth* provided an overview, including an economic and theoretical background, of successful international examples of convergence and a comprehensive analysis of the factors shaping the performance of Hungary's economy over the long term. This was followed by the first *Competitiveness Report* in 2017, which evaluated Hungary's competitiveness on the basis of more than 100 indicators and compared Hungary's competitiveness to the Member States of the European Union and the Visegrád region. As a vision, the 2018 *Growth Report* set out a macroeconomic path and framework for the Hungarian economy to approach Austria's level of development by 2030. The *Competitiveness Programme in 330 points* published in 2019 and the 180 points published in the previous year specified the measures to be implemented to progress on the envisaged convergence path.

The Magyar Nemzeti Bank remains committed to improving and measuring Hungary's competitiveness and is thus reinforcing its system for the analysis and measurement of competitiveness. In order to improve competitiveness, it should first be measured properly, and in Hungary this task is being performed most comprehensively by the MNB. We analyse the evolution of competitiveness from two aspects: the continuous monitoring of structural measures concerning competitiveness on the one hand, and the objective measurement of the factors shaping competitiveness on the other. Both types of analysis have already appeared in the MNB's practice, but will take on even greater prominence going forward.

The MNB published the methodological booklet *Methodology for Measuring Competitiveness* in June 2019, presenting in detail how it would monitor the implementation of the recommendations in the *Competitiveness Programme in 330 points* as well as the changes in Hungary's competitiveness position. The MNB's system for measuring competitiveness will assess the progress towards the competitiveness turnaround with two annual publications (Chart 1). The *Competitiveness Mirror* monitors the degree and pace of implementing the recommendations put forward by the MNB to improve competitiveness. The *Competitiveness Report* will serve to assess the impact that the implementation of the recommendations has on Hungary's competitiveness status.

Chart 1
Components of the MNB competitiveness measurement system



Source: MNB Methodology for measuring competitiveness.

The **Competitiveness Mirror** aims to monitor implementation of the recommendations presented in the Competitiveness Programme in an accurate and quantifiable manner, which supports the implementation process and thus also successful convergence. The system for monitoring implementation of the recommendations uses both analytical and descriptive methods for its assessment of the accomplishment of the competitiveness turnaround based on the MNB's Competitiveness Programme. The chapters presenting the details provide a descriptive summary of the measures related to each recommendation, based on which the analytical chapter quantifies the progress in implementation. Progress will be evaluated in a dual approach, because in addition to a summary of the results, the tasks that remain to be done will also be presented.

The MNB's system for measuring competitiveness aims to provide information on Hungary's progress in competitiveness not only to experts, but also to the broader public, as this is something all economic actors are affected by and have an interest in. Accomplishing a successful competitiveness turnaround requires an active contribution and a new approach from both the government and all participants in the economy. For that reason, we consider it particularly important that the MNB's messages and recommendations on competitiveness reach the broadest possible audience through a variety of means of communication.

Competitiveness Mirror – Measuring the implementation of the Competitiveness Programme

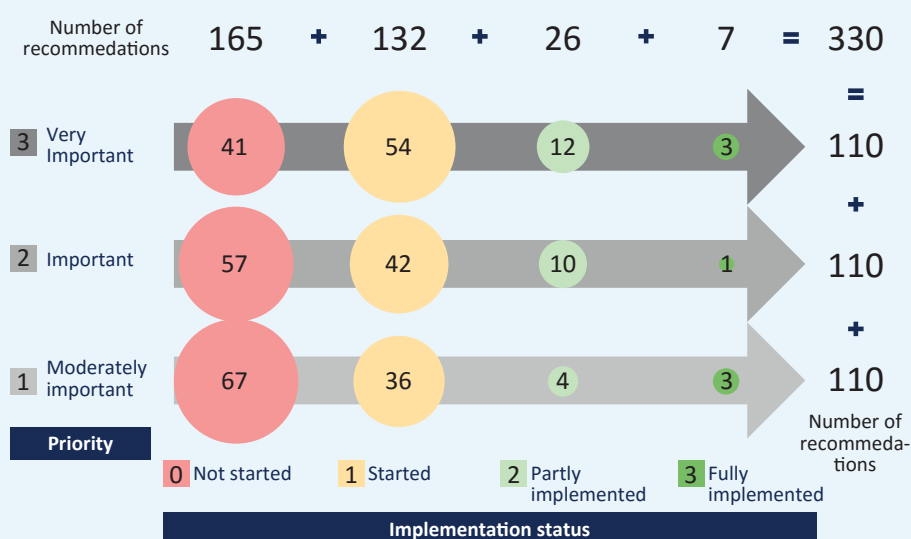
The *Competitiveness Mirror* evaluates the progress in the competitiveness turnaround according to the importance of each recommendation and the respective degree of implementation. This publication primarily seeks to determine the implementation status of the recommendations. The degree of progress is established using a 4-point scale ('not started', 'started', 'partly implemented', and 'fully implemented'). In terms of what is to be considered as implementation, the recommendations in the 330 points fall into one of two groups. One part of the recommendations require the approval of a specific measure, the introduction of new regulations or adjustments to those in place. By contrast, recommendations in the other group set directions for development, the objectives of which can be accomplished through the implementation of programmes involving a series of coordinated actions. Obviously, a recommendation of the former type may be considered as implemented when the competent institution has approved the regulatory adjustments, and one of the latter type when the programme has started. In assessing the degree of implementation, another aspect to be taken into account is whether the approved regulation or initiated programme is fully aligned with the recommendation made in the 330 points. A recommendation may be considered as partly implemented when the measure taken is similar in direction, but still different or smaller in volume, whereas a point may be considered as fully implemented when the same end has been achieved by a different method without any harmful side-effects. Taking these considerations into account, the categories indicating the degree of implementation are applied with reference to the following criteria:

- A recommendation is **'fully implemented'** when the corresponding regulatory adjustments (including amendments) have taken place, or respectively, for recommendations of a more general nature, when the programme seeking to accomplish the objective has been launched and is effectively underway. A recommendation may also be considered as fully implemented when the same end has been met by different but equally effective and efficient means.
- The **'partly implemented'** category comprises programmes which have been organised and are set to be launched, as well as measures about to be approved. Additionally, it may also comprise approved measures or ongoing programmes that do not fully cover the corresponding recommendations included in the 330 points or are more limited in scope. In such cases, implementation of the initial recommendation requires changes to the programme or measure, or the adoption of a new measure.
- A recommendation may be considered as **'started'** when a specific plan or strategy has been adopted for the implementation of a measure proposed as part of the 330 points. The 'started' category also comprises recommendations that involve an approved measure or initiated programme, the essential elements of which have not been implemented.
- The **'not started'** category comprises recommendations in respect of which no measure has been approved or no specific notification has been made, or no programme involving the recommendation has been initiated.

Every recommendation is assessed by the MNB's experts in terms of the contribution of implementation to competitiveness improvement. The 330 points have been elaborated in the spirit that all of its parts should substantially promote the improvement of Hungary's competitiveness. Nevertheless, not all of the recommendations may be considered to be equally important; some of them are key elements. The greatest importance is attached to recommendations that make the largest contribution to competitiveness, have the strongest multiplier effect, and are prerequisites for additional actions. According to the degree of contribution to improve competitiveness, three categories ('moderately important', 'important' and 'very important') have been established. In all of the 12 key areas, the recommendations are classified into these groups in equal proportions, i.e. each of the three categories are comprised of 110 recommendations.

Out of the 330 recommendations of the *Competitiveness Programme*, headway has been made in 165 cases since the introduction of the programme in February 2019 (Chart 2). Within that, implementation is underway in the case of 132 recommendations, 26 are partly implemented, while the objective has been fully reached with respect to 7 recommendations. Overall, no progress has been made in relation to one half of the recommendations, while implementation is underway in some form in 50 per cent of the cases. In a favourable development, the biggest progress has been made in the case of the recommendations with a ‘very important’ priority. In this category, 69 of the 110 recommendations are already being implemented. 12 of these have been partly completed and 3 have been fully implemented. In the case of the recommendations in the ‘important’ category, headway has been made in 48 per cent of the recommendations since the launch of the Competitiveness Programme. Out of the 110 recommendations in this group, 42 have a ‘started’ status, while 10 and 1 have been partly or fully implemented. The least progress has been made in the ‘moderately important’ recommendations, where no developments have been recorded in 61 per cent of the cases.

Chart 2
Implementation status of the competitiveness recommendations by priority
(2019)



Source: MNB.

Implementation of the recommendations is also examined by key areas. In its *Competitiveness Programme*, the MNB made recommendations for the improvement of competitiveness in 12 areas (Chart 3), and accomplishing the competitiveness turnaround requires the implementation of the interventions proposed in each of the 12 areas analysed. The analysis of the recommendations by chapter shows where the most progress has been made, as well as the areas where stronger support for progress is needed going forward.

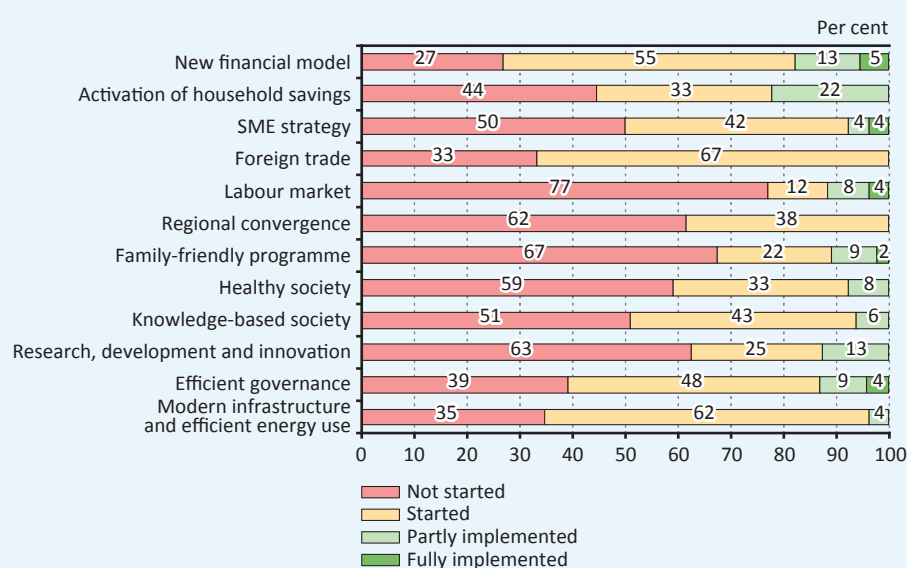
Chart 3
Key areas of the MNB Competitiveness Programme



Source: MNB Competitiveness Programme in 330 points.

Analysis of the implementation of the competitiveness recommendations by key areas shows differences in terms of the progress (Chart 4). In 5 of the 12 areas under review, the implementation of more than one half of the recommendations is already underway. The share of recommendations with an at least 'started' status is the highest in the *New financial model* (73 per cent) and the *Foreign trade* (67 per cent) chapters, followed by *Modern infrastructure and efficient energy* (65 per cent), *Efficient governance* (61 per cent) and *Activation of household savings* (56 per cent). Until the autumn of 2019, the lowest share of progress was observed in the chapters *Labour market* (23 per cent) and the *Family-friendly programme* (33 per cent), where the previously achieved results represent a high base. 10 of the 12 areas under review include recommendations with an at least 'partly implemented' status.

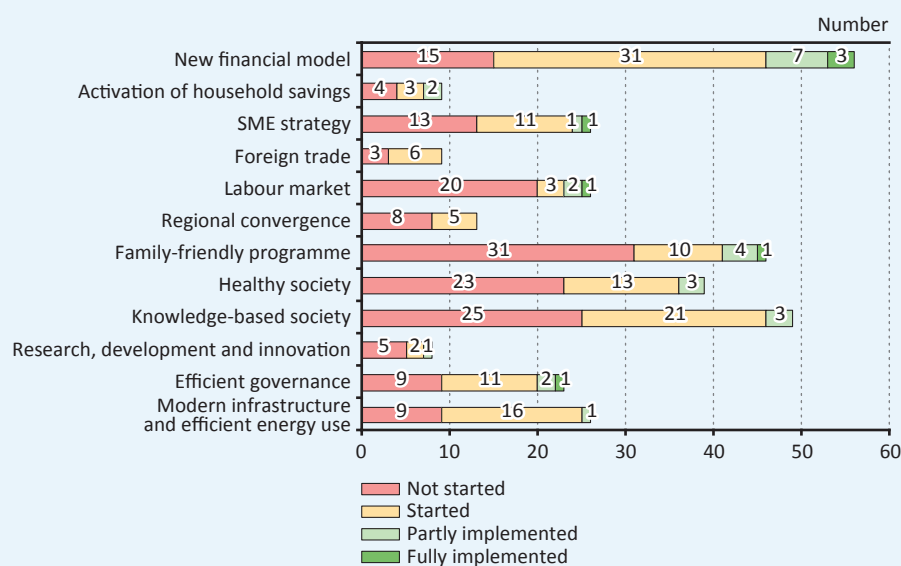
Chart 4
Implementation status of competitiveness recommendations by key areas
(2019)



Source: MNB.

The *New financial model* chapter has the most fully implemented recommendations (3), while the other 4 recommendations deemed fully implemented are in 4 different chapters (Chart 5). The *New financial model* also comprises the most ‘partly implemented’ recommendations (7), followed by the chapter on the *Family-friendly programme* with 4 recommendations. The 12 key areas in the Competitiveness Programme contain 72 subchapters in all, and each includes 2–9 thematically linked recommendations. In 7 subchapters, no progress has been made in either recommendation, while in 9 subchapters all recommendations are being implemented.

Chart 5
Implementation status of competitiveness recommendations by key areas
(2019)

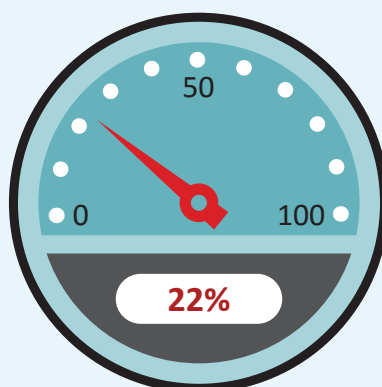


Source: MNB.

The most important feature of the *Competitiveness Mirror* is the analysis of the implementation of the recommendations over time, as that is how the degree of progress compared to the previous period can be identified. The *Competitiveness Mirror* will be released annually in the autumn of each year, which will allow it to report on the progress made over twelve months. Comparability over time requires a constant methodology and its consistent application.

The methodology used in this publication is suitable for presenting the degree to which the recommendations have been implemented, concentrated into a single figure both by area and on aggregate. Recommendations are scored 0–3 according to the status of their implementation, where 0 stands for ‘not started’ and 3 for ‘fully implemented’. The score obtained is then weighted by the priority of the recommendation concerned (this is a number between 1 and 3, where 3 stands for recommendations rated ‘very important’). The resulting implementation scores are aggregated for each key area, as well as for all recommendations collectively. The aggregate implementation status is a percentage that shows the level of implementation, weighted by priority, compared to the full implementation of the recommendations.

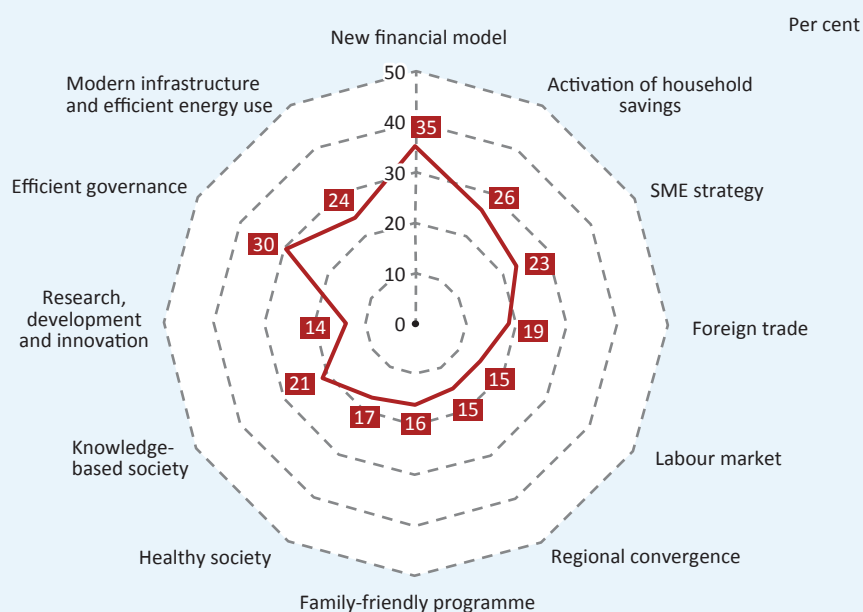
Chart 6
Aggregate implementation status of the MNB's 330 competitiveness recommendations
 (2019)



Source: MNB.

Based on the measures and announcements until 18 October 2019, 22 per cent of the *Competitiveness Programme*, weighted by priority, has already been implemented (Chart 6). The recommendations in the *New financial model* have the highest implementation rate (35 per cent), followed by the chapters *Efficient governance* (30 per cent), *Activation of household savings* (26 per cent) and *Modern infrastructure and efficient energy* (24 per cent) (Chart 7). The least headway has been made in the areas of *Research, development and innovation* (14 per cent), *Labour market* (15 per cent) and *Regional convergence* (15 per cent). Progress in the *Family-friendly programme* (16 per cent) is also relatively limited, but this area was characterised by a high base due to the broad Hungarian family support system; moreover, the Family Protection Action Plan, which was announced prior to the *Competitiveness Programme* and launched in the summer of 2019, contained several important measures not included in the 330 points.

Chart 7
Aggregate implementation status of the MNB's 330 competitiveness recommendations by key areas
 (2019)



Source: MNB.

Among the areas covered by the *Competitiveness Programme*, the most progress has been made in terms of the recommendations on enhancing the financial system, strongly supported by the MNB's targeted programmes, but the Hungarian financial sector's cost-effectiveness needs to be improved and capital market diversification need to continue.

The Bond Funding for Growth Scheme, aimed at establishing a modern corporate bond market, and the specialised trading platform for SMEs on the Budapest Stock Exchange were both launched successfully. The enhancement of digitalisation in banking may be boosted by the introduction of instant payments, the MNB's new FinTech Strategy, the Digitalisation and FinTech Advisory Board established by the MNB and the FinTech Strategy drawn up by the government. With respect to the improvement of the competitiveness of the insurance and fund sectors, the greatest progress has been the preparation of the MNB's recommendation on the annual cost rate of voluntary pension funds and the development of the system of Certified Consumer-Friendly Home Insurance. The concept of the so-called Welfare Funds created through a combination of pension and health savings has not been achieved, although this would pave the way for strengthening Hungarian institutional investors and activating additional household savings. In this respect, the new type of retail investment, the Hungarian Government Security Plus (MÁP+) introduced in June 2019 promotes the extension of the average duration of households' government securities holdings. The financial sector's cost-effectiveness would be best supported by the enhanced digitalisation in banking and the further optimisation of branch networks, while the diversification of the capital market would be facilitated by broadening the corporate bond market and increasing the number of listed firms.

Recently, several government measures have been implemented that support the development of SMEs and strengthen foreign trade relations, but much remains to be done in improving productivity and research and development and innovation. The positive developments include the adoption of the SME Strategy 2030, the reduction of the limit on the development tax benefit for SMEs, the introduction of the requirement to increase wages as a condition for development grants and the establishment of the Hiventures Fund facilitating acquisitions, mergers and generation changes. Moderate progress has been made in strengthening services exports, while the strengthening of the economic ties to Asian economies that started years ago continued with several agreements. In accordance with the Economy Protection Action Plan, research and development will receive additional state funds amounting to HUF 32 billion in 2020, which can launch the wage increase in R&D. Red tape related to research was cut, as was the corresponding bureaucratic burden, but the provision of additional public subsidies for the costs of doctorate courses, the reduction of the patent maintenance fees and extension of the targeted tax allowances for SMEs engaged in research and development still need to be implemented.

The pace of implementation of the recommendations concerning the improvement of human capital falls slightly short of the average implementation rate of the *Competitiveness Programme*. This is partly attributable to the fact that these areas require fairly complex measures, which only exert their impact on economic growth over the long run. Management of the challenges posed by the tight labour market may be facilitated by the reduction of the taxes on labour, and some headway was made in the recommendations aimed at tapping labour reserves. However, it would be crucial to provide more support for atypical forms of employment and more incentives for Hungarians working abroad to return home, to expand the Job Protection Action Plan in a targeted manner and to strengthen the adult education system. A large portion of the recommendations related to public education are linked to the new National Core Curriculum, which is being developed and is to be introduced from September 2020. Major progress can be made by the Vocational Training 4.0 Strategy developed by the Ministry for Innovation and Technology (ITM) and the transformation of the Corvinus University of Budapest. At the same time, increased efforts are needed to develop digital, linguistic and entrepreneurial skills, reduce early school leaving and instil the spirit of lifelong learning in people. Among the recommendations seeking to improve the health status of the population, headway has been made in strengthening the preventive system, but the transformation of the funding system, the institutional use of private resources and improvement in the systemic efficiency of the public health care system have yet to be implemented. The government's Family Protection Action Plan supports the demographic turnaround described in the *Competitiveness Programme*, but relatively little progress has been made in the family-friendly recommendations presented in the central bank's programme. However, when evaluating the advances, one must bear in mind that Hungary ranks quite high in international comparison when it comes to spending on family support. The main areas where there is still room for improvement include the elimination of the health barriers to fertility and measures supporting the day-to-day lives of families with small children.

More efficient governance is supported by certain elements of the Economy Protection Action Plan which was announced in the spring of 2019, and the implementation of numerous recommendations concerning infrastructure developments has already begun as well, but little progress has been made in regional convergence. Several measures aimed at cutting red tape have been adopted, although there is still room for improvement here as well, primarily by exploiting the opportunities offered by digitalisation. It should also be noted that the easing of the administrative burden related to taxation is already underway, and the expansion of the system of online cash registers continued to further reduce the shadow economy. Labour mobility may be promoted by the assistance for developing workers' hostels announced within the framework of the Economy Protection Action Plan and the improvement in interurban passenger transport. The 'Converging Settlements' Programme was launched to help less advanced regions to develop. Many projects are underway to enhance the electrification and comfort of rail transport, but the development of high-speed lines is progressing slowly and the replacement of rolling stock requires further efforts. The length of the motorway network is continuously growing, the reconstruction of motorway M1 has been started and it is expected to be upgraded to three lanes in the near future. There have been measures aimed at smart city solutions and the establishment of 5G, but no significant progress has been made in developing the electricity network and the IT security software industry. Most of the efficient energy recommendations are now being implemented, but no change has been observed so far with respect to the other recommendations for reducing environmental impacts (providing more subsidies to wind power plants, the introduction of the general and compulsory deposit and return system that increases the share of recycled waste).

Box 1-1

Key development areas of Hungarian economic policy in a regional comparison

In the course of its comprehensive work on competitiveness since 2015, the Magyar Nemzeti Bank has used objective analyses to identify the areas where a competitiveness turnaround is required for sustainable convergence. This piece presents the areas that require special attention to ensure the success of the competitiveness turnaround, comparing them to Hungary's peers in the region and the EU.

Hungary's total fertility rate falls short of the desirable level, despite the high family support spending. Following a steady decline for decades, Hungary's total fertility rate reached a historic low in 2011 (1.23). Thanks to the considerable increase in family allowances after 2010, the unfavourable trend was reversed, lifting the country's total fertility rate to 1.54 by 2017. Despite the rise, Hungary's total fertility rate remains slightly lower than the average of the other Visegrád countries (1.56) and the EU (1.59) and falls well short of the rate of 2.1, which would be necessary to maintain population levels. Even though Hungary spent the fourth largest amount among OECD countries on supporting families (3.5 per cent of GDP) in 2015, which was well higher than the V3 average (2.4 per cent), further incentives are warranted. The family-friendly development of the health care system holds huge potential, as does increasing non-material support for everyday family life (e.g. longer duty hours, support for summer camps or setting up a public school bus system).

With respect to high-quality human capital, providing the appropriate quality of primary, secondary and tertiary education is crucial, on account of the accelerating development of technology and employers' changing expectations. In Hungary, developments are required in public and tertiary education. According to international surveys, Hungarian students learn the curriculum well, but their results in using it in practice (PISA tests) fall short of the European and regional average. Regarding the number of university graduates, the country is also below the average (30 per cent compared to the regional average of 38 per cent among those aged 25 to 34). In education, the average rank of the V3 and the EU countries is higher than Hungary's ranking according to the relevant IMD indicator (ranked 44th, while the V3 is ranked 39th and the EU average is ranked 26th).

Public health in Hungary lags behind the countries in the region of a similar development level, which undermines the country's productivity and imposes an increasing burden on the health care system. Absences due to an inadequate health condition and the drop in productivity are detrimental for employees and employers alike. According to Eurostat data, the expected number of years spent in good health is 60 in Hungary, 4 years lower than the EU average and 1 year lower than the V3 average.








Hungary has greatly improved its labour market position in the past 9 years, but further measures are required to steadily maintain full employment. In the wake of the 2008 global crisis, Hungary's labour market was in the worst shape in the region, with the lowest employment rate in the European Union and an unemployment rate exceeding the EU and V3 averages. As a result of the government measures promoting employment introduced after 2010, the Hungarian employment rate for 15–74-year-olds increased far more than the Visegrád average between 2010 and 2018 (by 11.4 percentage points), representing the fifth largest increase in the EU. As a consequence, the Hungarian indicator has caught up to the EU average (at 61 per cent), and it now only falls short of the Czech Republic (65 per cent) in the region. Looking ahead, in order to further increase employment, inactive groups need to be encouraged to work using targeted instruments, for example the stronger support to atypical employment or the expansion of the Job Protection Action Plan.

The demographic developments affect both sides of the pension systems negatively in the Visegrád region, since as the number of pensioners rises, the working age population diminishes. The dependency ratio, which shows the proportion of those aged over 65 to the working-age population, may rise from the current 29 per cent to 54 per cent, nearly doubling until 2060. In 2016, public pension expenditure amounted to 9.7 per cent of GDP, slightly more than the Visegrád average (9.3 per cent). The European Commission estimates that the expenditures will drop in the Visegrád region until 2030, before climbing to around 11 per cent by 2060. In Hungary, participation in voluntary savings systems is relatively low, and therefore the pension-supplementing savings amount to merely 2 per cent of Hungarian pensioners' income. The establishment of Welfare Funds may prove to be a powerful incentive to increase pension savings.

Housing conditions determine families' quality of life and also influence their parenting decisions. In recent years, house prices increased sharply on the back of buoyant demand, supported by several macroeconomic fundamentals, such as rising incomes, improving employment, low mortgage interest and the high level of savings. However, the increase in supply did not keep up with the surge in demand, therefore the amount of savings necessary besides an average income for buying a typical flat is higher in Hungary (primarily in Budapest) than the EU average, but it is similar to the Visegrád average. If house prices become too high in an economy, that leads to a competitive disadvantage from the financial side on account of the non-productive resources that are tied down, and from the labour market side as well, partly on account of the increased involuntary commuting.

Hungary's railway and road network is dense, but its quality should be improved, which would accelerate transactions, reduce transport costs, increase the capacity to attract investments and support the mobility of labour and capital. In comparison to the EU, the Hungarian railway network is the fifth densest, but there are no high-speed railway lines and the share of electric railway track sections (39 per cent) falls short of the EU and the V3 average by 10 percentage points. The length of motorways is adequate and their density (18 km/1,000 km²) is double the V3 average, but they have low traffic capacity and lack international connections. Reaching at least 160 km/h on main railway lines and increasing the share of electric railway lines would facilitate faster rail transport, while extending the length of the motorway network and improving the quality of roads would allow motorways to be reached within 30 minutes from any point in the country. Besides the developments affecting the whole country, improving the quality of suburban transport requires special attention. The population in the Budapest metropolitan area has grown by around 200,000 people in the past 20 years, which boosted the number of commuters, but the quality of suburban transport did not keep up with this.

Table 1
Key areas and the most important recommendations of the Competitiveness programme

Areas	Subareas	Most important recommendations
Demography 	Supporting everyday life	Support the re-entry of women into the labour market following childbirth Improve nursery capacities, longer duty hours aligned to working hours Set up a public school bus system, support summer camps for children
	Family-friendly health care	Provide more active support for artificial insemination Prevent diseases that inhibit childbearing, subsidised examinations during pregnancy Align consulting hours to working hours
	Employment related family benefit system	Reform the family tax base allowance by allowing negative taxation Raise the ceilings applicable to the infant care allowance and the child care allowance Provide a one-off health fund allowance to cover the expenses of childbirth care
Health 	Strengthening prevention	Promote healthy eating and regular sports activities Support regular physicals and screening tests Strengthen the functions of the general practitioner system
	Financial reform in health care	Establish a public funding system based on actual costs Channel funding from private sources into welfare funds Extend the application of pay-for-performance financing methods
	Modernisation of public health care	Strengthen professional and financial control Increase the number of health care personnel and staff Increase the capacity for active same-day care
Knowledge 	Skill developing public education	National Core Curriculum focusing on skills development and practical knowledge Extending and enhancing the career path model Reduce (early) school leaving without qualification
	Internationally competitive tertiary education	Widen the enrolment base of tertiary education Channel market needs and private capital into education Increase student activity
	Lifelong learning, further training	Ensure that first qualifications may be obtained free of charge in adult training Allow education expenses to be deducted from the corporate income tax base Introduce a mandatory further training minimum for companies
Work 	Sustainable increase of wages	Continue the reduction of tax burden on labour Extend the Job Protection Action Plan Attract digital nomads
	Mobilising labor market reserves	Public employee wages to be paid by the state for a certain period following private sector employment Regional convergence through employment Incentives for Hungarians living abroad to return home
	Flexible employment	Promote atypical forms of employment Provide a wider range of benefits in 'Free Enterprise Zones' Promote targeted work time reduction in vulnerable groups
Finance 	Financial system that supports sustainable growth	Encourage retail and corporate lending in a healthy structure Develop and deepen the digital transformation Support more efficient lending processes
	Modern corporate finance, Bond Funding for Growth Scheme	Establish a modern corporate bond market Ensure the deductibility of listing expenses from corporate income tax Grant tax exemption on stock dividends
	Financial literacy and household savings	Establish welfare funds through a combination of pension and health savings Continue self-financing Strengthen financial literacy
Innovative SMEs 	Economies of scale	Assistance for SME wage increases subject to investment commitments Make liquidation proceedings simpler and faster Promote generation change in management
	Innovation and digitalisation	Raise R&D expenditures and increase the number of R&D assistant staff Reduce patent maintenance fees, provide favourable accounting treatment for patent revenues Establish the János Neumann Fund to support the ICT developments of companies
	Investment strategy abroad	Strengthen export of services Exploit the benefits offered by China's One Belt One Road initiative Support SMEs entering into fast-growing new markets
State 	Smaller and more digital public administration	Raise average wages in public administration and reduce bureaucracy Adopt the Estonian model to ensure online administration Promote wage bill management and performance measurement
	Quick and easy taxation	Increase the number of tax administration processes produced by the Tax Administration Reduce administrative burdens Continue the reduction of the shadow economy with innovative measures
	Modernisation of infrastructure	Modernise rail transport Establish intermodal hubs Promote renewable energy

Source: The MNB's Competitiveness Programme in 330 points.

1 New financial model

The sustainable growth of the economy requires the funds provided by the banking system to economic actors through lending and the exploitation of the alternative sources of finance (stock exchange, bond market) offered by capital markets to the fullest possible extent. Despite the current double-digit credit growth, 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. Several areas for improvement have been identified to promote the funding of the economy in a healthy, growth-enhancing and cost-effective manner.

The doubling of the private sector's credit-to-GDP ratio and deepening of the capital market not only help establish a well-diversified funding environment, but also assist in the preparation for a potential drop in EU funds. In the long run, the aim is to strengthen the positive correlation between banks' credit penetration and the deepening of the capital market on the one hand, and the level of economic development, welfare, innovation and digitalisation on the other hand.

Most of the 330 points in the MNB's Competitiveness Programme are linked to the New financial model chapter. After barely a year, out of the 56 recommendations assessed by the Competitiveness Mirror, 38 points are in a 'started' or 'partly implemented' status, and 3 earlier recommendations, such as the establishment of a modern corporate bond market, have been fully implemented. The pilot project for the operating model of a more efficient guarantee system, which primarily helps the financing of SMEs, was successful, while further concerted action is required to facilitate a riskier clientele and non-bank financing. The central bank has implemented several measures to support the sustainable and healthy structure of the current credit convergence, sent the recommendations to the competent legislators and initiated a dialogue with the sector. The enhancement of digitalisation in banking may be boosted by the introduction of instant payments, the MNB's new FinTech Strategy, the Digitalisation and FinTech Advisory Board established by the central bank. Among the digitalisation recommendations, credit institutions are expected to be enabled to submit electronic queries for the income statements held by the National Tax and Customs Administration (NAV) from early next year, and consultation started with the institutions concerned in the case of most of the proposed measures. Besides the websites that facilitate the better comparability of the terms and conditions of payment accounts, another step forward would be to introduce package pricing for transfers. Among the recommendations put forward in connection with the capital market, the Bond Funding for Growth Scheme aiming to create a modern corporate bond market and launched on 1 July stands out. While major progress has been made in few recommendations on the development of the stock exchange, little progress has been achieved as far programme steps for the deepening are concerned. With respect to the improvement of the competitiveness of the insurance and fund sectors, the greatest progress has been the preparation of the MNB's recommendation on the annual cost rate (ACR) of voluntary pension funds. This is significant because it is the first indicator that enables comparison across sectors, and it stimulates competition in both sectors. In the non-life segment, the central bank recommended that the Certified Consumer-Friendly concept be extended to certain types of insurance to increase the product value for customers, whereby the system of Certified Consumer-Friendly Home Insurance (CCHI) was developed first. Within the framework of developing digital connections between the insurance and banking sectors, the preparation of the blockchain register of loan protection home insurance policies for the pilot stage was started, which will provide benefits to banking and insurance actors as well as customers. To promote public confidence and self-provision, a consultation was held on the regulation of the Hungarian insurance and pension fund guarantee schemes that need to be developed, with the participation of legislators and the sector's advocacy organisations.

#	Recommendation	Priority
1.1	Improve the efficiency of the guarantee scheme	
1.	Develop a “reverse” suretyship procedure	2
<p>Based on the MNB’s recommendation and in line with the government’s measures promoting SME lending, Garantiqa Hitelgarancia Zrt. (GHG) launched the pilot project for introducing the ‘Reverse Procedure’ in the autumn of 2018. Under this scheme, after having performed a preliminary rating based on publicly available data, the guarantee institution sent a letter of intent to provide suretyship to 10,000 companies (which did not have any loans). With the letter, these the firms could approach the credit institutions to obtain a loan while already being aware of their guarantee worthiness. The three-month pilot project was successful: as the companies were directly approached, GHG undertook suretyship for 300 businesses amounting to HUF 11 billion by the end of 2018, for loan transactions amounting to around HUF 13 billion. These firms would probably have not even attempted to secure a loan in the absence of such an offer. As a next step, the guarantee institution will approach another 25,000 companies with its offer in 2019, which can be used until 31 December 2019 to submit loan applications to financial institutions.</p>		
2.	Ease exclusion (‘KO’) criteria in a targeted manner	2
3.	Seek banks’ commitment to increase credit portfolios that qualify as additional	2
<p>Government Decision No. 1783/2018 (XII. 21.) on the measures necessary to increase additional financing to the institutional guarantee system stipulated the transactions that can be deemed additional (transactions of microenterprises, and those with a collateral coverage of below 25 per cent or with a probability of default of at least 4 per cent) and that these transactions should represent at least 85 per cent of the portfolio.</p>		
4.	Offer more flexible guarantee rates (70 to 90 per cent)	2
<p>Based on an agreement with the European Investment Fund (EIF), Garantiqa Hitelgarancia Zrt. may provide suretyship under the COSME Programme (Competitiveness of Enterprises and Small and Medium-sized Enterprises), which relates to a total loan amount of HUF 80 billion. A key objective of the programme is to support viable businesses that do not have enough collateral or represent a greater credit risk, as institutional suretyship can guarantee up to 90 per cent of their borrowing, which is higher than the maximal 80 per cent applied until now. The suretyship application can be submitted in case of loan contracts signed by 1 October 2020, and therefore further measures need to be developed in the future.</p>		
5.	Redesign bank processes related to higher risk taking	1
6.	Make concerted marketing efforts to promote institutional guarantees	1
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	1
8.	Facilitate co-investment opportunities through government assistance	1

#	Recommendation	Priority
1.3	Support for credit convergence	
1.3.1	Sound lending for sustainable economic growth	
9.	Mitigate interest rate risks for customers	3

The Magyar Nemzeti Bank (MNB) facilitates the strengthening of households' resilience to interest rate changes and the spread of housing loans with a longer interest period through various measures. By early 2019, owing to the MNB's actions, the share of variable-rate housing loans within new disbursements was low even by international standards. Within the outstanding loans, however, the proportion of variable-rate loans remains significant, which may necessitate further measures besides providing information to consumers on interest rate risks and refinancing.

In the corporate sector, Funding for Growth Scheme Fix (FGS Fix) launched in early 2019 contributes effectively to reducing interest rate risk: within newly disbursed small amount corporate loans denominated in forint, the proportion of fixed-rate loans rose over 50 per cent again by the second half of 2019.

10.	Strengthen financial awareness	2
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Public education continues to play a central role in imparting financial and entrepreneurial skills. In recent years, the Pénziránytű Alapítvány (Money Compass Foundation) has performed intensive textbook and content development work with the help of the MNB's professional and financial support, and as a result the development of financial awareness is now promoted in schools by several textbooks and publications. It is a major achievement that 400,000 students can learn from these free works raising financial awareness in the 2019/2020 school year. Instruction of the topic is also helped by the preparation of teachers, the foundations for which are laid in the additional training opportunities offered to teachers by the Pénziránytű Alapítvány. The integration of economic and financial information into the curriculum in a modern manner is a top priority among the objectives of the national strategy aimed at improving the financial awareness of the population. The new National Core Curriculum is expected to be adopted in 2020.

1.3.2	Cheaper banking with more intense price competition	
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11.	Continue to promote Certified Consumer-Friendly products	3
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The popularity of the Certified Consumer-Friendly framework is confirmed by the fact that the market share of Certified Consumer Friendly Housing Loans (CCHL) within the housing loans that can be potentially certified was over 60 per cent by the second half of 2019. Widespread access to certified housing loans was facilitated by the fact that the tender was continuously kept up-to-date with the involvement of market participants. With respect to extending the certification framework to other financial products, plans are being elaborated and consultation with market participants is underway. The Certified Consumer-Friendly Home Insurance (CCHI) is expected to be marketed this year, and the relevant comparison website should be launched in the spring of 2020. The preliminary concept of the Certified Consumer-Friendly Current Account (CCCA) has also been developed.

12.	Reduce lead times for loan refinancing	2
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In general, the widespread disbursement of Certified Consumer-Friendly Housing Loans contributed to reducing the lead times of housing loan applications and to the fact that housing loans may now be disbursed within a month from the application. Besides the spread of Certified Consumer-Friendly Housing Loans, the MNB also seeks to broadly improve the efficiency of lending processes and shorten administrative deadlines by expanding the electronic access to the information sources necessary for a credit assessment.

#	Recommendation	Priority
13.	Reduce administrative burdens and charges related to early repayment	3
Reduction of the administrative burdens and charges related to early repayment may pave the way for a faster reduction of variable-rate loans and wider exploitation of the benefits of the prevailing low interest rate environment by debtors. In the case of housing loans, the MNB has prepared the recommendation on simplifying the drawing up of the notarial document necessary for taking out a new loan after final repayment and reducing the associated charges as well as on cutting prepayment fees. The prepayment fees applicable in the case of Certified Consumer-Friendly Housing Loans that are more favourable to consumers may support the reduction of the burdens related to prepayment in the case of new housing loans.		
14.	Enable the mandatory sharing of positive credit histories	3
Enabling the sharing of positive information in the Central Credit Information System (CCIS) would considerably reduce the information asymmetry between banks and customers. According to preliminary data from BISZ Zrt., in the case of close to 40 per cent of the contracts signed between 2015 and 2019 Q1, lending institutions could only take into account consumers' existing repayment obligations based on their own declarations. The MNB has prepared a recommendation to enable banks to access positive CCIS information.		
15.	Establish the continuous querying of credit histories	1
The efficiency of lending processes was hampered by the fact that the CCIS data necessary for credit assessment could only be queried during the opening time of the CCIS. However, credit histories can be queried 14 hours a day (between 7:00 am and 9:00 pm) since 1 January 2019, which enables an almost continuous support to credit assessment, which in turn may promote online borrowing options.		
16.	Enable simple, user-friendly bank account switching	3
The simplified bank account switching service is already available, so customers only need to provide the necessary information to the chosen new account-servicing payment service provider, and then their standing orders and direct debits are rerouted. The service can be further improved by cutting execution deadlines and the introduction of online administration. Simpler account switching may also be facilitated in the future by the widespread use of secondary account identifiers related to the accounts (e.g. phone number, tax number).		
17.	Increase the comparability of bank account plans	1
In accordance with the European payment accounts directive, all countries are required to create an independent account comparison website, which has been started in Hungary, too. Comparability would considerably improve if, similar to most digital services, banks would introduce package pricing in electronic retail payments, too, which, incidentally, already constitutes the best practice in Europe (outside Hungary) in the case of bank account plans as well.		
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	2
Accounts specifically tailored to pensioners are already available, but no social basic account has been developed, which would enable those in need to receive their pension and various government benefits to a free account providing the most basic payment functions.		
19.	Adopt standardised bank account statements	3
Pursuant to the European payment accounts directive, requirements for account statements are already in place and may be fine-tuned in the future.		

#	Recommendation	Priority
20.	Establish a standardised loan application interface for small businesses	3

Micro and small enterprises' access to credit and their willingness to borrow would be improved and competition among banks would be fostered by an electronic platform where companies could submit their loan application to several banks in the same form and at the same time, and the credit institutions would respond to that with an offer in a standardised and comparable form. The viability of the concept and its crucial role in SME lending has been clearly confirmed by the results of the questionnaire-based and the focus group surveys conducted so far. The legal framework of the implementation has been mostly clarified in 2019, and the form and content elements of the standardised bank offer were determined in cooperation with market participants.

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	2

The optimisation of branch networks may play a major role in cutting the Hungarian banking system's high operating cost-to-assets ratio. In 2018, Hungarian banks closed more than 180 branches, which represents major progress by international standards, both in itself and in terms of the outstanding loans per branch. In addition, the Hungarian Banking Association's digitalisation strategy includes the development and promotion of digital sales channels, which, when implemented, may lead to further branches being closed in the long run.

22.	Improve the coverage of POS terminals and other electronic payment solutions	1
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In this regard, the POS terminal deployment programme represented a major step forward. Nevertheless, the obligation to accept electronic payments (even instant transfers besides card payments) should be stipulated by law for certain businesses (e.g. those required to use online cash registers).

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	2
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1.4.2	Banking products and services with a few clicks	
24.	Develop and deepen the digital transformation	3

The first half of 2019 saw the establishment of the central bank's department dedicated to digitalisation; its tasks include examining the future avenues of development in the financial system related to financial innovation and digitalisation and promoting the digital transformation in the financial system's business processes and institutions. In the second half of 2019, the MNB prepared its FinTech Strategy and conducted a comprehensive survey on the level of digitalisation at Hungarian banks. The Digitalisation and FinTech Advisory Board established in September 2019 with renowned Hungarian and international experts will facilitate the MNB's work in this area as a knowledge-sharing platform. The government also seems to be very committed to enhancing the level of digitalisation in the Hungarian financial system and economy: the Artificial Intelligence Coalition was formed to help the familiarisation with technological innovations and Hungary's FinTech Strategy was unveiled within the framework of the Digital Welfare Programme.

25.	Provide a tax benefit to encourage the development of mobile payment applications	1
26.	Support digital development related to the instant payment system	2

The MNB continuously consults with market participants about the widespread use of instant payments, and the MNB's guidelines presenting the main instant payment processes as well as the technical specifications of the Hungarian QR code standard were published to support the developments.

27.	Incentivise banks to introduce package pricing in retail payment services	1
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#	Recommendation	Priority
1.4.3	Convenient credit applications online	
28.	Make online contracting and signatures simpler and faster	2
<p>In accordance with Act LIII of 2017 on the Prevention and Combating of Money Laundering and Terrorist Financing (hereinafter: Pmt.) and the amendment to the Credit Institutions Act effective from 1 July 2017, online contracting without personal contact became available for certain financial products. The MNB has drawn up a decree on customer due diligence in line with the Pmt., which was fine-tuned in 2018 and 2019 based on market needs. The decree published in 2019 introduced a three-tiered system of customer due diligence, enabling the use of the Client Gateway during due diligence. This allows customers to sign contracts easier and faster. By continuously reviewing the decree, the MNB wishes to ensure the innovative operation of the financial sector to keep up with technological progress.</p>		
29.	Enable credit institutions to submit electronic queries for the income statements held by the National Tax and Customs Administration	3
<p>The technical details of the concept behind providing electronic income statements were developed by the MNB in early 2019, in cooperation with the National Tax and Customs Administration and BISZ Zrt. After that in June 2019, the amendment of Act CL of 2017 on the Rules of Taxation created the necessary legal framework. Following the creation of the government decree determining the content requirements of income statements and testing of the process by banks, the electronic querying of incomes may be available to stakeholders from February 2020. Electronic access that enables faster information flows improves the efficiency of lending and enhances the banking system's competitiveness.</p>		
30.	Reduce the notarial fees associated with housing loans	1
<p>Due to the costs and complexity, notarial procedures considerably hamper the rise in the number of refinancing transactions, thereby curbing the efficiency of the mortgage loan market. The MNB formulated recommendations to review notarial fees, which aim to support the efforts to reduce the interest rate risk of retail mortgages on the one hand, and to reduce the costs of notarisation during retail mortgage lending and simplify the process on the other hand. In addition, lending would be further simplified and the associated costs could be cut through the digitalisation and automation of notarisation.</p>		
31.	Replace notarial certification with a central digital platform	2
<p>The costs and time spent on obtaining mortgages could be significantly reduced by a central digital platform allowing customers to have their loan contract notarised via an online channel. To replace notarisation, which requires personal contact, involves high costs and takes much time, the MNB initiated the establishment of the development concept and the operational framework of the central platform.</p>		
32.	Establish full online processing for taking out unsecured loans	1
<p>The full online processing of personal loans, which are typically of lower value, is supported by enabling the broader availability of information to lenders. Enabling the electronic querying of income statements from early 2020 and the recommendation on the mandatory sharing of positive credit histories in the CCIS prepared by the MNB serve to ensure a more reliable and faster credit assessment resting on a broader information base. The provision of direct, rapid access to the information necessary for banking procedures enables unsecured borrowing to be steered to fully online channels. The MNB also helped enable fully online administration by developing the detailed rules on remote identification and expanding the authorised due diligence options.</p>		
33.	Set up a central appraiser database	3
<p>One of the crucial elements of the mortgage lending process that involves a great degree of manual work while also being time-consuming and costly is the appraisal of collateral. In cooperation with the Hungarian Banking Association, the MNB has started establishing the reporting system that serves as the basis for a real estate transaction database and consulted with market participants to simplify and accelerate property appraisals. The first reporting with the finalised content is planned for 2021, and after that the querying of the data can be developed.</p>		

#	Recommendation	Priority
34.	Automate the land registry information system (TakarNet) while ensuring continuous availability	2

Administrative procedures linked to mortgage lending can be significantly simplified by automating the querying of Land Registry information and providing access to the database outside of office hours, which would also enable banks to automate the processes on their side. The MNB has contacted stakeholders to determine the details of the recommendation on this development.

35.	Increase the share of mortgage and consumer loans granted through digital channels	2
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On the one hand, entry into force of MNB Decree 45/2018 (XII.17.) enables not only real-time customer due diligence but also non-real-time customer due diligence. Due to this, when requesting various banking products, such as mortgage and consumer loans, the credit application and the administration does not need to be submitted in person at the branch, which may encourage the public to use the more convenient, faster digital channels instead (in the case of mortgages, appearing in person to sign the contract is still required by law). On the other hand, the 2019 amendment of the decree paved the way for customer due diligence using the Client Gateway.

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	1
37.	Provide wider access to available information sources for new entrants to the market	3

Widespread access to lending information promotes financial deepening, the more efficient pricing of loans and improves the quality of the portfolio and thus also competitiveness. To this end, the MNB has prepared its recommendation on the mandatory sharing of positive credit histories in the CCIS and widespread access to the CCIS information and started the preparation for a central appraiser database. Moreover, with the cooperation of the MNB, income statement data are expected to be available for electronic querying from the National Tax and Customs Administration in 2020.

38.	Facilitate close cooperation between innovators and the regulator through the Innovation Hub	2
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The first half of 2019 saw the establishment of the central bank's department dedicated to digitalisation, with the goal of facilitating closer cooperation between innovators and the regulator. The new business area's duties include communication with firms offering innovative services via the MNB's Innovation Hub platform, collecting experiences from the market and preparing recommendations by integrating those experiences to promote the development of the Hungarian FinTech ecosystem.

39.	Grant preliminary operating licences in the Regulatory Sandbox framework	1
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In the MNB's Regulatory Sandbox framework, several new innovative firms received preliminary operating licences to test their services in a controlled environment safeguarding consumers. The MNB initiated a consultation with the aim of developing the recommendation on a legislative amendment necessary to ensure a regulatory environment favourable from the perspective of the Hungarian FinTech ecosystem.

40.	Enhance the Regulatory Sandbox with the capability to grant exemptions from regulatory provisions	1
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By expanding the MNB's Regulatory Sandbox framework, the test environment granting exemptions from regulatory provisions for a limited time would become available to more financial service providers. In its FinTech Strategy formulated in the second half of 2019, the central bank initiated the extension of the exemption options offered by the Regulatory Sandbox via statutory authorisation, which could considerably help vitalise the Hungarian FinTech ecosystem.

#	Recommendation	Priority
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	3
42.	Provide incentives for listing of banks	3

On 17 June 2019, MKB Bank listed its shares in the standard category of the Budapest Stock Exchange. MKB Bank's market capitalisation is over HUF 197 billion, currently ranking sixth among issuers on the stock exchange. MKB Bank is a financial actor with one of the longest histories in Hungary, where it has been present for almost 70 years and it is still dominant today.

43.	Establish a modern corporate bond market	3
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On 26 March 2019, the Monetary Council of the MNB decided to launch the Bond Funding for Growth Scheme (BGS) on 1 July 2019, within the framework of which the central bank purchases bonds with a rating of at least B+ issued by non-financial corporations domiciled in Hungary and securities secured with credit claims against companies, for a total amount of HUF 300 billion. The programme seeks to improve the efficiency of monetary policy transmission by increasing liquidity on the Hungarian corporate bond market and securitisation markets. By boosting the liquidity of the corporate bond market, the MNB's intention is to help economic players rely to the appropriate extent on bond issues, rather than only on bank loans, when acquiring funds, so that central bank interest rate decisions can more efficiently influence developments in corporate funding costs. Almost 150 companies registered for the programme by mid-October 2019, and the bonds of 19 firms have already received the rating necessary for the central bank purchases. The first central bank purchase was conducted under the BGS in mid-September 2019, and the programme is expected to gain momentum in the fourth quarter. Information is available about the central bank's corporate bond purchases and the credit ratings on the Magyar Nemzeti Bank's website.

44.	Ensure state participation in the development of the domestic equity market	3
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The National Stock Exchange Development Fund was established in 2017 with a total amount of HUF 13 billion as an important tool in the capital market development efforts started by the Budapest Stock Exchange. The capital fund can make two types of investment. For example, it can finance the development of firms that can enter the BSE Xtend medium-sized enterprise market or the principal market of the Budapest Stock Exchange in the medium run. This can contribute to reaching new markets, investments, the expansion of the existing range of products and the implementation of business development solutions that help improve operations and the acquisition of new customers.

45.	Grant tax exemption on long-term investment accounts holding newly listed shares	1
46.	Launch a specialised trading platform tailored for SMEs	1

The BSE has launched its new MTF, the Xtend market, dedicated to facilitating the access to capital of Hungarian medium-sized enterprises. For the companies that appear here, the listing requirements are easier to meet than on the principal market of the stock exchange and listing costs can also be considerably reduced under the Economic Development and Innovation Operational Programme. Appearance on the platform is also encouraged by the National Stock Exchange Development Fund, which, in cooperation with private investors, provides capital to companies that undertake to enter the BSE Xtend market. Xtend may be an optimal choice for medium-sized enterprises that are already mature enough to operate healthily but wish to grow, for which they need external funds that they do not want to acquire through a loan. Currently, three companies' papers can be found on the platform.

47.	Ensure the deductibility of listing expenses from corporate income tax	1
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#	Recommendation	Priority
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	2
<p>The EU's new Prospectus Regulation ([EU] 2017/1129) is fully applicable since July 2019. The text of the Hungarian Capital Markets Act (Act CXX of 2001, CMA) amended in line with the Regulation is expected to be adopted by the Hungarian Parliament during the autumn session of 2019. Direct application of the Regulation eliminates a large portion of the Hungarian capital market's competitive disadvantage, but the late amendment of the CMA and the conceptual uncertainties left in the text entail potential difficulties and risks surrounding the interpretation and application of the law for all the capital market participants concerned.</p>		
49.	Improve access to digital platforms	2
<p>Raising funds through innovative online forms of finance and providing better access to them on digital platforms could significantly improve the financing opportunities of companies that are in the early stages of growth and do not have access to bank loans or only at high costs. The recommendation on the establishment of the ICO (Initial Coin Offering), STO (Security Token Offering) and crowdfunding regulation is included in not only the MNB's FinTech Strategy but also the preliminary draft of Hungary's FinTech Strategy. To facilitate these companies' access to funding, the MNB has contacted stakeholders and initiated the establishment of the details of the regulation on innovative, online forms of finance.</p>		
50.	Appoint a government or ministerial commissioner for stock exchange development	1
1.6	Improve the competitiveness of the insurance and fund sectors	
51.	Increase the product value to customers in non-life insurance	3
<p>In the non-life segment, the MNB has set out to develop a framework with better services to increase product value to customers. As a first step, the concept of Certified Consumer-Friendly Home Insurance (CCHI) is being developed, establishing minimum standards for the terms and conditions and procedural issues of retail home insurance products. The keywords of the CCHI include comprehensiveness, utility, clarity, digital solutions, green considerations and family-friendly solutions. Applications are expected to commence in 2020 Q1.</p>		
52.	Provide legal and technological means to facilitate changing insurers	1
53.	Enhance the system of the Annual Cost Rate (ACR) and extend it to the pension funds sector	2
<p>The MNB has set out to extend the ACR system successfully used in the insurance sector for 10 years to the pension funds sector, and to develop a pension fund cost rate that is not based on past data, able to forecast the total cost for the policy, consistent with the insurance ACR and enables the comparability of pension funds. Therefore, as a first step, it developed the MNB recommendation on the calculation and publication of the annual cost rate of voluntary pension funds, which could become an efficient tool for comparing pension funds and the competing pension insurance products from 2020. The instrument is expected to boost competition on both markets. The written and oral consultation of the recommendation was conducted during the summer, the recommendation was announced in September 2019, therefore pension funds can apply it from 1 January 2020, and the MNB will make the information available to a wide range of customers. Further steps could include the limitation of traditional insurance policies similar to unit-linked insurance and the shift towards customised ACRs.</p>		
54.	Develop the digital links between the insurance and banking sectors	3
<p>The MNB has started to prepare the blockchain register of loan protection home insurance policies. A tripartite consultation (Hungarian Banking Association, Association of Hungarian Insurance Companies [MABISZ], MNB) was conducted in the first half of 2019, where the procedures and business needs were successfully stipulated. The next step may be the launch of a pilot programme.</p>		
55.	Increase CASCO in motor own damage penetration	2

#	Recommendation	Priority
56.	Develop the system of guarantees in the insurance and the health and pension funds sectors	3

Dialogue has started along the lines of the initial conceptual material prepared by the MNB based on the 2016–2017 consultations about the establishment of the regulation of the Hungarian insurance and pension fund guarantees schemes.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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2 Activation of household savings

The financial crisis demonstrated that financing the national economy from external funds involves considerable risks, and therefore it is much more favourable to rely on domestic funds in the medium term. This calls for new instruments and approaches to encourage households to save. The foundations for this were laid by the new retail government securities introduced after 2010 and the fact that the Budapest Stock Exchange is now controlled by Hungarians, and the initial results have already been seen. Within public debt, the share of domestic holdings and HUF-denominated debt have increased substantially, strongly mitigating the external vulnerability of the state and the Hungarian economy. However, this process slowed down in 2018–2019, rendering further steps necessary. As part of the new strategy, a new objective was set, namely that households' government securities holdings need to be doubled in 5 years, i.e. by 2023, increasing them to HUF 11 billion. This would be another huge step for the state towards self-financing.

To achieve this, redesigning the product structure is crucial: this was largely accomplished with the introduction of the MÁP+ in June, which promotes the extension of the average duration of households' government securities holdings. The success of the programme hinges on the further enhancement of sales channels, especially the expansion of sales opportunities offered at post offices and the introduction of the printed MÁP+. By favouring state-run sales channels, the state and the public can also save huge costs, but in order for them to become widely used, they need to be enhanced and their efficiency needs to improve.

Stock exchange programmes have basically focused on expanding supply in recent years. No progress has been made with the demand-increasing measures requiring legislative amendments that were described in the MNB's Competitiveness Programme. The so-called welfare funds created through a combination of pension and health savings, coupled with guaranteed membership, would enable the strengthening of Hungarian investors and thus contribute massively to the activation of household savings, which would stimulate the economy through the stock exchange and government securities.

#	Recommendation	Priority
2.1	Strengthening retail government debt financing	

1.	Increase maturity of bonds and redesign the product structure of retail government securities	3
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On 8 April 2019, the Government Debt Management Agency (ÁKK) announced the transformation of the retail government securities portfolio. One of the most important elements of this was the introduction of the Hungarian Government Security Plus (MÁP+) in June. In parallel with this, the shorter-maturity Half-year Hungarian Government Security (FMÁP) and Treasury Saving Bill+ (KTJ+) and the longer-maturity 2-year Government Security (2MÁP) and Bonus Hungarian Government Security (BMÁP) were phased out to simplify the range of retail products. As a result, the 5-year MÁP+ and the 3- and 5-year Premium Hungarian Government Security (PMÁP) became the dominant components in the range of retail products, which promotes the extension of the average duration of households' government securities holdings and is therefore favourable from the perspective of the stability of government debt financing.

2.	Encourage the transition from cash savings to government securities	3
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Steering the Hungarian population's cash holdings, which are high in an international comparison, into government securities savings would be beneficial from various aspects (e.g. it would help reduce foreign dependence and improve the efficiency of monetary policy transmission). Thanks to its attractive parameters, the MÁP+ could assist in steering the cash held by the population for holding wealth towards savings. Nevertheless, in order to accelerate this process, further incentives are needed and sales channels need to be expanded.

3.	Use technical innovations and convenience services for retail government securities purchasing	1
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Simplification of government securities investments is facilitated by the fact that the interest on the MÁP+ is automatically reinvested (in the same government securities series) and that the bond can be redeemed free of charge within five days of interest payments. In addition, since June 2019, the securities account necessary for purchasing retail government securities can be opened without personal contact, via the Client Gateway. However, at present, this option is slow and not widely known, so further technical developments and a more intensive marketing campaign are needed.

4.	Redesign the arrangements for granting tax benefits, rethink the concept of long-term investment accounts	1
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In the past, the interest tax exemption was only available with long-term investment accounts. As part of the overhaul of the government securities strategy, the government securities issued after 1 June 2019 are exempt from interest tax, which plays a major role in steering households' savings towards the government securities market.

5.	Develop sales channels	2
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In order to broaden the investor base of retail government securities, the MÁP+ is now available at post offices and through the agents of the Fundamenta-Lakáskassza building society network. Furthermore, additional developments have been started that mainly aim to increase the geographical diversification of the purchases (e.g. selling dematerialised MÁP+ in as many post offices as possible and selling materialised MÁP+). In addition, further steps are needed to improve the efficiency and popularity of direct sales by the Hungarian State Treasury, which represents the sales channel offering the lowest costs to both the state and the public.

2.2	Higher share in domestic companies with more benefits from their achievements
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6.	Grant tax exemption on stock dividends	2
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7.	Provide incentives for employee stock ownership programme	2
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8.	Establish welfare funds through a combination of pension and health savings	3
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9.	Extend dividend tax exemptions to pension savings accounts	1
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Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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3 SME strategy

Hungarian small and medium-sized enterprises are the backbone of the economy, both in terms of their share of employment, value added and their number. Moreover, SMEs are deeply integrated into the Hungarian economy, through their ownership structure and business relations. Hungary's convergence can only be successful if the SMEs continue to increase their productivity more than large enterprises, as was the case in the past 1–2 years. This will happen if these firms improve their efficiency, modernise and enter foreign markets.

In its 2018 Growth Report and the 2019 Competitiveness Programme, the central bank set the objective that the SME sector should exhibit annual productivity growth of 7 per cent. This can be facilitated by increasing the concentration in the SME sector (by doubling the share of small and medium-sized enterprises), and the wage differences across the different size categories need to be reduced to moderate large enterprise's brain drain. Accordingly, the central bank has formulated several targeted measures, most notably the recommendations on supporting investments, the facilitation of mergers and the support of the operation of clusters. The country's long-term growth may be determined by the implementation of an incentive scheme provided to innovative companies in their early development phase.

Recently, several government measures have been introduced that favour the SME segment. Implementation of one half of the measures put forward by the MNB is already underway or even completed. It should be noted that as part of the Economy Protection Action Plan, the limit on the development tax benefit for SMEs was reduced. As regards its goals, the Road to the Future Programme basically mirrors the de minimis programme advocated by the MNB, as it stipulates a wage increase requirement as a condition for development grants. There are several recent measures that point towards the goals defined by the MNB but require further measures in a similar direction. One example is the establishment of the Hiventures Fund facilitating acquisitions, mergers and generation changes. With respect to the number of measures, the greatest progress was made in the areas aiming to transform the structure of the economy by shifting the Hungarian industry towards knowledge-intensive services. Desirable amendments were introduced to the insolvency law. Another positive development is the adoption of the new SME Strategy 2030, which may serve as the basis for the planning of the funds for the next EU programming period, and it could provide a predictable framework for the operation of the SME sector. The strategy may also create a basis for policy areas where no progress has been made recently. For example, further action is required in facilitating networking (mentor networks, clusters).

#	Recommendation	Priority
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	3

The limit of the development tax benefit available to small and medium-sized enterprises drops from HUF 500 million, in 3 steps: to HUF 300 million for small enterprises and HUF 400 million for medium-sized enterprises as of 2020, to HUF 100 million for small enterprises and HUF 200 million for medium-sized enterprises as of 2021, and to HUF 50 million for small enterprises and HUF 100 million for medium-sized enterprises as of 2022. Another favourable change is that in the case of the investments announced and commenced on or after 1 January 2020, the headcount and wage cost requirements will not have to be met, because the former relevant legal provision was replaced by a condition to maintain the headcount.

2.	Enable the immediate deductibility of investments in the corporate tax base	3
3.	Ensure the deductibility of investments from the local business tax base	2
4.	Provide assistance for SME wage increases subject to investment commitments	3

Within the framework of the SME development scheme 'Road to the Future Programme' announced in October, the government encourages employees' wage increases. Under the programme, in exchange for the technological and development grant, applicants undertake annual wage increases of 10 per cent until the end of the third business year following the completion of the investment.

3.2	Increase productivity in the SME segment through greater economies of scale	
5.	Support acquisitions and mergers	3

Under the new capital programme for SMEs that has a budget of HUF 31 billion and was launched by Hiventures Zrt., which is owned by MFB, the company developed a new capital investment product. According to the firm, financing mergers will be a priority in the programme.

6.	Make liquidation proceedings simpler and faster	3
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The rules on interdict imposed on executive officers in the case of involuntary cancellation of firms have changed. The earlier regulation, which was strict even by EU standards, was eased so that now the extent of the interdict is commensurate to the claims. The sanctioning nature of the interdict remains in place, but the situation warranting the interdict should be examined more broadly. The new regulation allows the executive officers concerned to make a declaration justifying an exemption.

7.	Provide a 2-year dividend tax waiver for companies undergoing a generation change in management	2
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3.3	Improve SME competitiveness through targeted measures	
8.	Increase the innovation management capacity of SMEs by establishing a non-profit advisory centre	1

This February, the government announced the launch of an entrepreneurial portal. It will be a meeting place for Hungarian SMEs and advisers facilitating digitalisation and improving efficiency.

9.	Support the operation of clusters	2
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The call for bids 'Supporting the high-quality supply of services by professional cluster organisations' available under GINOP was closed, and currently there is no subsidy instrument available in Hungary.

#	Recommendation	Priority
10.	Support the emergence of clusters and other forms of networks	1

Within the framework of the Danube S3 Cluster project, the Iparfejlesztési Közhasznú Nonprofit Kft. (Industry Development Non-Profit Company) is currently working on exploring and assessing cluster policies, and on familiarising itself with agricultural and food industry clusters and their innovation potential. The sharing of experiences from the cluster audit and the clarification of the assessment methodologies serve as further incentives to perform additional cluster audits and identify development opportunities.

11.	Communicate state-sponsored programmes and opportunities on a broad base	1
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Awareness-raising programmes are typically less publicised than calls for tender, but – similar to the news on development funds – it is just as important that SMEs be aware of these ‘soft’ opportunities. The demonstration programmes (e.g. Industry 4.0 model factories) and those shaping the entrepreneurial attitude are usually advertised in magazine programmes (typically on radio), and therefore they reach only a limited target group.

12.	Support the operation of mentor networks	1
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No new measures have been implemented, but the Hungarian Entrepreneurial Mentoring Programme announced earlier continues.

3.4 An inspiring environment for entrepreneurship

13.	Provide preferential grant application and borrowing options for young and female entrepreneurs	2
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Since the baby expecting loan available under the Family Protection Action Plan announced in 2019 is a general purpose loan, it can facilitate this objective. The targeted beneficiaries of the programme (women aged 18 to 40) and the magnitude of the disbursed amount (up to HUF 10 million) are in line with the goal set by the MNB. The baby expecting loan can help realise young mothers’ entrepreneurial plans during and after childbearing.

14.	Increase the number of co-working offices in large cities	1
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No government measure was introduced, but the segment is expected to expand on the market. Currently in Budapest, 2.6 per cent of the offices enable flexible work management, and 7.3 per cent of these offices are vacant. The total floor space of co-working offices is 20,000 square metres (Colliers International, 2019).

15.	Increase the number of accelerators sponsored by large corporations	1
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16.	Support university incubators and spin-offs	1
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According to the government’s announcement, a Science park concept was developed in 8 locations: in Debrecen, Győr, Miskolc, Pécs, Szeged, Zalaegerszeg and at two Budapest universities. The programme’s development started earlier in some places, including Szeged, where the government decided to subsidise the preparation of five projects of the University of Szeged this year.

17.	Organise and support relevant startup conferences and meetups	1
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18.	Grant a corporate tax exemption for aspiring entrepreneurs in their first three years	3
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One step in this direction in this year’s amendment of the Corporate Tax Act is that the tax base allowance on investments in startups was increased. The annual limit was HUF 20 million, which changed to HUF 20 million per investment.

3.5 Qualified human resources in small businesses

19.	Reduce the social contribution tax further for SMEs	3
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20.	Enter into strategic partnership agreements with innovative SMEs	2
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#	Recommendation	Priority
21.	Provide digital courses conditional on achievements	1

In June 2019, the government adopted the proposal on the development and introduction of the digital competence framework. Based on the framework, the digital competences necessary for various professions and jobs were determined, so that employees can see what training is necessary for the position.

3.6 Support an SME sector that is competitive in modern times

22.	Make company websites mandatory	3
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In February 2019, the government announced the launch of an entrepreneurial portal. The portal provides website design free of charge. It is not mandatory.

23.	Develop digital infrastructure in rural areas	2
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Under the Superfast Internet Programme launched in 2015, developments in the counties Fejér and Heves were completed this year.

24.	Tighten rules for the management of ICT risks	2
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25.	Establish the János Neumann Fund to support firms' ICT developments	2
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26.	Prefer knowledge-intensive industrial services in EU funds' disbursement	3
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Under the Hungarian Multi Programme launched this April, the service provider-consulting centres will soon be chosen. The Hungarian Multi Programme (GINOP 1.1.4-16) was created under the Economic Development and Innovation Operational Programme. Companies with experience in knowledge transfer are expected to participate. They will provide assistance in four key areas, namely technical product and service development, brand and image building, financial awareness and organisational development. These businesses will be listed on a website, where their services can be rated. The Hungarian Multi Programme allocates HUF 1 billion for knowledge transfer and roughly HUF 13 billion for businesses' development plans. Professional preparation of the Hungarian 5G strategy is underway. The 5G platform was also set up.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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4 Foreign trade

The openness of the Hungarian economy is exceptional even by European standards; therefore, Hungary is one of the countries which are most deeply integrated into global value chains. Consequently, the economy is highly exposed to the global economic activity, which entails not only great growth potential but also vulnerability. The importance of foreign trade policy is evidenced by the fact that the contribution of the trade balance to GDP has been steadily positive since 2007, which had numerous positive macroeconomic effects in Hungary.

In addition to the positive macroeconomic effects, openness increases the dependence of the Hungarian economy on imports. Currently, Hungarian manufacturing uses imported products and services worth almost HUF 210 to produce HUF 100 of value added, while orders of only HUF 90 are placed at domestic firms. In the similar-sized and also highly industrialised Czech Republic, import orders worth HUF 135 are placed for value added of HUF 100, and at least the same amount is ordered from domestic companies. Therefore, this area has huge development potential, which could be exploited by mitigating the import-intensive nature of production. This can be achieved by subsidising services related to industrial production and utilising the know-how from the FDI made here. Furthermore, the export of services should also be increased, because this segment is much less exposed to the cyclicity of the global economy. It is also worth expanding the share of the SME segment in foreign trade, because currently this segment represents just 20 per cent of total exports. In the SME segment, primary consideration should be given to the markets of neighbouring countries, whereas the large corporate segment may find potential for expansion in fast-developing regions. The shifting of the global balance of power to the east opens up new investment and outbound investment opportunities for Hungary, which should be utilised by policymakers in the future as well.

It is important that Hungary address global economic challenges with measures that improve the value-creating capacity of the economy over the long run. Since January 2019, the shift towards the activities with higher value added has been assisted by the new requirements introduced in incentivising FDI (elimination of the job creation requirement, requiring more innovative activities). Furthermore, some progress has been made in bolstering services exports, and Hungarian institutional guarantees have been established in countries with a stable institutional system. The strengthening of the economic ties to Asian economies that started years ago continued with several agreements.

#	Recommendation	Priority
4.1	Increase the activity of Hungarian small and medium-sized enterprises abroad	
1.	Strengthen export of services (besides export of goods)	3
2.	Exploit the benefits offered by China's One Belt One Road initiative	2

Preparation for construction of the Belgrade–Budapest railroad has started in Hungary. The contract for the complete planning and implementation of the Hungarian section was signed by a Sino-Hungarian consortium. Based on another agreement in July, Hungarian aeronautical firms holding a certificate from the Hungarian authorities will be exempt from the approval process (which can take years) when they introduce their products on the Chinese market. In June 2019, the foundation stone of the China National Machinery Import&Export (CMC) corporation's 100 MW solar power plant was laid in Kaposvár.

3.	Support the entry into fast-growing new markets with stable institutions	1
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Hungarian developments or institutional agreements assisting Hungarian firms have been implemented with the help of government subsidies in several developing countries in the recent period. Hungarian technology was used to construct a wastewater treatment plant in Ghana, financed by Eximbank. In February, a water treatment plant was built in Indonesia using a Hungarian government loan. Hungarian exports of agrotechnology and water management to Brazil can soon start based on an agreement. In Mexico City, the Hungarian Eximbank and the Mexican Bancomext concluded an agreement on supporting the Mexican investments of Hungarian companies. Uganda saw the establishment of the largest foreign-financed programme to date, with the money coming from Hungary, concerning water developments. In a related development, this year's allocated amount of the tender fostering the Hungarian water industry's activities on foreign markets was announced in February 2019. The funds can facilitate Hungary's water industry presence abroad.

4.	Support foreign traders in Hungary, introduce a new trading house concept	1
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The government's purchase of a Trieste port can be considered to be in line with the aim of this measure. The investment seeks to enable Hungarian goods to reach the world through Hungarian intermediaries. A special exporting programme was established with the participation of 7 Hungarian firms. These flagship firms are fast-tracked to access the Hungarian export promotion institutional system. In June, new businesses joined, raising to the total number of programme participants to 19.

5.	Enable market-ready companies to operate temporarily in international co-working offices	1
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A centre facilitating the entry of Hungarian businesses to the US market was opened in Washington. It is housed in a facility of the property complex of the Hungarian embassy in Washington. It provides accommodation and logistic services as well as practical assistance from business professionals to Hungarian startups and entrepreneurs seeking to enter the US market. The goal would be to implement similar initiatives in several locations.

6.	Separate country, sector and product promotion and corporate brand building	2
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4.2	Utilise the knowledge received with FDI	
7.	Channel public development funds to manufacturing sectors that are knowledge-intensive or well embedded domestically	2

The conditions of granting investment funds on unique grounds were modified; in the future the focus will shift to encouraging R&D activities and the deployment of new technologies. Due to the change of course, the firms concerned can receive funds without creating jobs, they only need to deploy new technology to the country. The changes became effective from 1 October 2019, with Government Decree No. 227/2019 (IX. 26.).

#	Recommendation	Priority
8.	Provide incentives for strongly subsidised enterprises to use Hungarian suppliers	3

The government plans to provide HUF 3 billion to businesses in the form of subsidies under the Supplier Development Programme launched in 2017. A precondition for tendering is that five small and medium-sized enterprises (SMEs) be connected as suppliers to a foreign or Hungarian large enterprise. However, the programme seems to be territorially concentrated, as more than one fourth of the development funds were granted in Bács-Kiskun County (as of April 2019). The programme also takes into account diversification, which facilitates the long-term sustainability of suppliers' activity. The suppliers subsidised so far supply goods or services to several clients.

9.	Give priority to supporting productive investments on the services side when programming for the next EU programming period	3
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By nature, this could not start yet.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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5 Labour market

One of the most important factors of economic growth, convergence and competitiveness is human capital, which affects the performance of the national economy both through its quantity and quality. In recent years, the labour market has contributed massively to economic growth, mainly through the expansion of employment. However, despite the positive developments on the labour market in recent years, there are several areas with further reserves and development opportunities that can help achieve sustainable convergence.

To ensure the more efficient utilisation and activation of Hungary's labour market reserves, the goals are to convince at least 100,000 Hungarians working abroad to return home and to increase employment in inactive and more vulnerable groups. Employment growth can be supported by the widespread use of atypical forms of employment. Retaining workers depends strongly on further increases in net real wages, in line with productivity growth.

Headway has been made in one quarter of the Competitiveness Programme's recommendations on the labour market. Of the recommendations concerning the activation of labour reserves, two can be considered partly or fully implemented (those that encourage working while receiving a pension and finding employment on the primary labour market), while there has been no progress in the further promotion of the atypical forms of employment, for example. With the exception of one recommendation, which has been fully implemented, no progress has been seen in stimulating the labour reserves with the tax regime. The sustainable rise in wages was supported by further cuts to the taxes on labour, namely the mitigation of the social contribution tax. Among the recommendations on providing incentives to Hungarians living abroad to return home, steps have been taken and announcements made in the case of wage increases in the public sector. With respect to the recommendations on adult education, professional further training and the strengthening of entrepreneurial propensity, no measures have been initiated.

#	Recommendation	Priority
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
2.	Increase the difference between the wages paid for public work and the minimum wage	2

The difference between the wages paid for public work and the minimum wage is steadily growing, strongly influenced by the large minimum wage increases in recent years and the unchanged level of public work wages since 2017. While in 2012–2013 gross public work wages amounted to 77 per cent of the minimum wage, this had dropped to 55 per cent by 2019. The widening difference can further encourage public workers to find employment on the primary labour market.

3.	Raise the permitted upper limit on the amount of earnings for persons employed below the retirement age or while receiving pension	1
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Since as of 1 January 2019 no employers' taxes and contributions need to be paid for private sector employees who are pensioners in their own right (those receiving old-age pension or the pension due to women after the 40-year eligibility period), their insurance ceased. In the absence of that, the earnings limit of the pensioners in their own right was abolished. This easing does not apply to those receiving a service benefit or early retirement benefits or the retired entrepreneurs engaged in a supplementary activity, so in their case the earnings limit is retained. Overall, the earnings limit was not raised, but the permitted upper limit was abolished in several categories. Furthermore, from 2019 the income of the retirees working while receiving the old-age pension is subject only to a personal income tax of 15 per cent, they are exempt from the 10-per cent pension contribution and the 4-per cent in health insurance contribution in kind (and also from the 3-per cent health insurance contribution in cash and the 1.5-per cent labour market contribution).

4.	Provide additional incentives for atypical forms of employment to encourage capacity building and organisational development	3
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5.2	Activate labour market reserves via tax regime instruments	
5.	Expand the category of elementary occupations of the Job Protection Action Plan	3
6.	Extend the Job Protection Action Plan to employees' contributions	2
7.	Extend the Job Protection Action Plan up to the minimum wage	3

From 1 January 2019, the allowances available under the Job Protection Action Plan can be applied not only up to HUF 100,000 per month but up to the current minimum wage.

8.	Extend the Job Protection Action Plan in the form of sector-specific allowances based on criteria for reducing the shadow economy	3
9.	Provide an incentive for the employment of pre-retirees by granting a tax exemption on employers' voluntary pension fund contributions	1
10.	Introduce a counter-cyclical labour market contribution	2
11.	Promote targeted work time reduction combined with full or partial social contribution tax compensation and/or public wage compensation in vulnerable groups	1

#	Recommendation	Priority
5.3	Sustainable increase in wages	
12.	Continue the reduction of taxes on labour	3

Among the taxes on labour, the cuts to the social contribution tax that started in 2017 continued. From 1 July 2019, this tax fell from 19.5 to 17.5 per cent, which mainly boosts the demand side of the labour market.

13.	Attract digital nomads	2
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Although no measures specifically aimed at attracting digital nomads have been launched in Hungary, Budapest currently tops the digital nomad list ranking of 1,331 large cities (nomadlist.com), as a destination attracting digital nomads. According to the respondents, the advantages of Budapest include its affordability, the fast Internet connection, security and the good quality of life. However, Budapest continues to be rated average or poor in terms of English language skills and hospital care.

5.4	Incentives for Hungarians living abroad to return home	
14.	Increase wages paid in high-demand jobs in the public sector	3

Wages continued to rise recently in the construction and services sectors, which are experiencing acute labour shortages, with double-digit growth seen in several industries. The wages of health care personnel and staff and maternity nurses will increase by 72 per cent relative to the 2018 base remuneration, in four steps between 2019 and 2022. As a first step of the wage increase, their wages rose by 8 per cent on 1 July 2019, affecting 82,000 people. The process will continue with a 14-per cent rise on 1 January 2020, a 20-per cent increase on 1 November 2020 and a 30-per cent hike on 1 January 2022, relative to the 2018 base.

15.	Increase awareness of family support elements, run campaigns to raise awareness of the educational and health care system supported by the state	1
16.	Support Hungarian companies' recruitment abroad through the deduction of expenditures and tax benefits	1
17.	Simplify the recognition of degrees obtained abroad	1

5.5	Strengthen the system of adult training	
18.	Introduce output criteria and independent examination centres in the system of adult education and training	1
19.	Ensure that first qualifications may be obtained free of charge in adult training	2
20.	Develop digital and language skills in senior generations	3

5.6	Strengthen professional training	
21.	Provide incentives for lifelong learning by allowing education expenses to be deducted from the corporate income tax base	3
22.	Introduce a mandatory further training minimum for companies	3
23.	Reimbursement of the fees of successfully passed examinations for the most renowned international certifications	1

#	Recommendation	Priority
24.	Support the retraining of labour released as part of reducing red tape by covering costs and granting allowances on contributions	2

5.7	Strengthen entrepreneurial propensity	
25.	Incorporate entrepreneurship skills into public and tertiary education	2
26.	Run domestic and foreign media programmes for the promotion of entrepreneurship	1

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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6 Regional convergence

Mitigating regional differences may benefit Hungary's sustainable convergence from an economic and social perspective. Although the regional concentration of companies and labour leads to a productivity surplus in the short run, over the longer term it may exacerbate the economic and social differences between regions. Reducing regional differences can be facilitated by measures that encourage labour mobility and capital flows.

Fostering labour market mobility by supporting commuting and change of residency status could dampen the differences seen on the labour market. The recommendations put forward in the Competitiveness Programme could help lower the unemployment rate to below 5 per cent in all counties. Direct support for less developed regions and the expansion of the opportunities to acquire funds could assist underdeveloped counties in catching up to the national average.

Progress has been made in 5 out of the 13 recommendations fostering regional convergence. Labour mobility may be promoted by the assistance for developing workers' hostels announced within the framework of the Economy Protection Action Plan and the improvement in interurban passenger transport. With respect to the other forms of mobility promotion laid down in the Competitiveness Programme, no new measures have been announced. No substantial headway has been made in the recommendations concerning the direct support for less developed regions, while only one recommendation regarding their financing, namely on increasing the absorption of funds from the European Investment Bank, can be considered started. Preparations for the long-term government programme called 'Converging Settlements' have started in 31 places to improve the situation of those living in underdeveloped settlements. In the years ahead, the programme that is headed by the Hungarian Charity Service of the Order of Malta with the cooperation of civil society and religious organisations will provide assistance to a total of 300 communities in a difficult situation for diagnosis-based convergence. With respect to fostering regional convergence, despite the measures launched, there is still considerable room for improvement in labour mobility and providing subsidies to underdeveloped regions.

#	Recommendation	Priority
6.1	Encourage labour mobility	

1. Support labour market mobility by providing incentives for commuting

3

Pursuant to one of the measures in the Economy Protection Action Plan announced in May, subsidies provided for constructing workers' hostels will continue to increase, and from autumn not only local governments but also private companies can tender to construct or renovate workers' hostels.

2. Support labour market mobility by supporting change of residency status

2

3. Provide mobility incentives to supplement the employment benefits granted to public employees

3

Although the new programme supporting the construction of workers' hostels does not exactly target the mobility of public workers, it could have a positive effect on their employment on the primary labour market, because workers' hostels would facilitate employment.

4. Improve interurban passenger transport

2

The improvement of interurban passenger transport is influenced by the recent railway developments, within the framework of which 11 double-decker KISS trains will start operating on the Budapest–Vác–Szob and the Budapest–Cegléd–Szolnok suburban lines from February 2020 and another 8 trains from the end of 2020. Moreover, the timetables of the MÁV trains and the Volán buses, which serve a feeder function on railway stations, are being coordinated.

5. Introduce coupon benefits based on the Polish model

3

6.2 Direct support for less developed regions

6. Ensure strong reliance on the sectoral and technological specialisations of economic centres outside Budapest

3

Development of the economic centres outside Budapest is supported by both foreign and Hungarian investments, which not only create jobs but also implement advanced technologies and higher value added production, thereby contributing to the improvement of rural areas' attractive and retaining capacity. The implementation of several investments outside Budapest were announced recently, which will create hundreds of jobs going forward. Key examples include the service centre established by Lufthansa Technik in Miskolc, Thyssenkrupp's production facility in Pécs, Toray Industries' plant in Nyergesújfalu and Inzi Controls' battery production factory in Komárom.

7. Provide for the favourable treatment of tenders based on local suppliers and resources

3

8. Introduce a territorial compensation mechanism to counterbalance the labour drain

1

9. Introduce a compensation mechanism for teachers taking up employment in less developed regions

1

6.3 Funding in less developed regions

10. Incorporate territorial differentiation into the Széchenyi Card Programme

1

11. Provide a combination of capital and funding through banks' participation

2

#	Recommendation	Priority
12.	Provide a wider range of benefits in Free Enterprise Zones	2
13.	Increase the absorption of funds from the European Investment Bank (EIB)	1

The combined value of the loan contracts signed with the EIB Group amounted to EUR 891 million in 2018, from which the EIB's direct share was EUR 747 million and the EIF's was EUR 144 million. Thus, the value of the loans received from the EIB increased by 8 per cent year-on-year. It can be realistically assumed that the EIB's contribution will increase in the larger infrastructural, energy and business development plans implemented in the years to come.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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7 Family-friendly programme

One of the key factors of sustainable convergence, long-term economic growth and competitiveness is human capital, the quantitative characteristics of which are determined by demographic developments. In Hungary, a steady population decline and ageing of the population has been observed since the early 1980s. The current rate of population decline could be mitigated by the measures aimed at supporting childbearing, and in the long run a total fertility rate of 2.1 should be achieved and sustained to ensure unchanged population numbers. To achieve the replacement rate of 2.1 by 2030, the annual number of births should reach 110,000 by then, and for that the number of newborns should increase by 2,000 every year.

The MNB's Competitiveness Programme put forward a number of recommendations for the continuation of the government's family-friendly programme through to 2030. Measures on family policy that have been implemented in the past period and those in the Family Protection Action Plan announced in February 2019 provide considerable support for the starting and growth of families. However, given the gravity of the issue, the development of family support measures is unlikely to be considered complete for a long time to come; bearing this in mind, the Competitiveness Programme formulated additional recommendations which, together with the ongoing programmes, may contribute to the achievement of the desired demographic turnaround.

In the past two decades, several countries (most recently Poland) have bolstered their pension-supplementing systems with mechanisms defined here as guaranteed membership, making them much more robust in the face of demographic challenges. A potential solution to the currently low, roughly 30-per cent coverage and the demographic pressure on the social security system could be the merging of the current voluntary health and mutual aid and pension funds in Welfare Funds with guaranteed membership but voluntary participation. The funds would then be able to manage the health and pension-supplementing objectives, and their range of family-friendly services could help achieve goals such as home purchases, childbearing and elderly care, which could help approach those aged below 40, who are currently difficult to reach.

There has been progress in one third of the family-friendly recommendations presented in the Competitiveness Programme. In evaluating the measures, one should bear in mind that Hungary ranks high in an international comparison when it comes to public spending on family benefits. Out of the 46 points aimed at achieving a demographic turnaround, one has been fully implemented, another four have been partly implemented and the implementation of ten has started. Areas where there is still room for improvement include the elimination of the health barriers to childbearing and measures supporting the day-to-day lives of families with small children.

#	Recommendation	Priority
7.1	Strengthen the elements of the family support system	
1.	Raise the ceilings applicable to the infant care allowance and the childcare allowance	3
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)	1
3.	Introduce an initial capital scheme for young returnees who undertake to have children in Hungary	2
4.	Provide a one-off health fund allowance to cover the expenses of childbirth care	2

The prenatal baby support introduced in July 2019 provides an opportunity to finance the health care spending related to childbirth.

5.	Support parenting by higher-education students	2
Childbearing by higher-education students is supported by the 2014 introduction of the graduate childcare allowance as well as the waiver extended to student loan holders upon the birth of the second and third child.		
6.	Ensure the constant review of the elements of the family support system and the analysis of their efficiency	1
7.	Promote parenting (by awareness raising, advertising of family support elements, and support for preparatory trainings)	2

After the announcement of the Family Protection Action Plan, a major media campaign was launched to advertise family support elements. A telephone customer service and a website about the family support elements (csalad.hu) also provide information.

7.2	Family-friendly development of the health care system	
8.	Provide for the prevention and treatment of diseases that inhibit parenting	3
9.	Run an information campaign on insulin resistance and provide free insulin resistance screening for women of reproductive age	1
10.	Provide more active support for artificial insemination	2
11.	Provide a wider range of subsidised examinations during pregnancy	1
12.	Reduce the number of foetal deaths through improvements to prenatal care	2
13.	Reduce vaccine prices	1

In accordance with Ministry of Human Capacities Decree No. 12/2019 (VII. 3.) published in Issue 116 of 2019 of the Hungarian Official Journal, the vaccine against chickenpox is included among the compulsory vaccines, which applies to those born after 31 July 2018. The first dose of the chickenpox vaccine is administered to children at the age of 13 months, while the second dose is given at the age of 16 months. This vaccine can be obtained free of charge.

14.	Align consulting hours to working hours	3
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7.3	Family-friendly tax reform	
15.	Ensure that the employment-related elements of the family support benefits track the dynamic wage growth	3
16.	Reform the family tax base allowance by allowing negative taxation	1

#	Recommendation	Priority
17.	Grant full tax exemption for mothers in large families on a broader base	3

Under the Family Protection Action Plan announced in February 2019, the complete personal income tax exemption of mothers with at least four children will be introduced. The measure will become effective on 1 January 2020 and will cover not only the current dependants eligible for the family tax allowance but also those who already grew up as adopted children as well.

18.	Increase the family tax base allowance for the children of mothers giving birth under 30 years of age	1
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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	3
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Pursuant to the Family Protection Action Plan announced in February 2019, the capacity of nurseries will continue to be increased. Based on the government's announcements, the capacity of nurseries will grow from 49,000 in 2018 to 70,000 until the end of 2022, and thus the number of places will rise by 21,000 over 3 years.

20.	Increase nursery school capacities in order to enable admissions to mini groups from the age of 2.5 years	3
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21.	Support the use of private nurseries through public contributions to charges	2
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Under the tender 'Supporting the return to the labour market of those rearing small children' in the Economic Development and Innovation Operational Programme (GINOP), the parents who return to the labour market and place their child in a family- or workplace-run nursery can apply for an allowance of up to HUF 40,000 from August 2019. If the monthly fee is below HUF 40,000, the allowance amount equals the fee to be paid by the parents.

22.	Make family-friendly improvements to the public education system	3
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7.5 Support for the daily lives of families with children

23.	Support the re-entry of women into the labour market following childbirth	3
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24.	Create a family-friendly workplace environment and provide incentives for day care in the workplace	3
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The establishment of a family-friendly workplace environment is supported by the introduction of the Family-Friendly Workplace competition, which recognises the employers who promote a work-life balance. The subsidies from the central budget provided for the operation of workplace-run nurseries will increase considerably from 2020: in the case of budgetary authorities, it rises from HUF 360,000 to HUF 700,000, while in the case of other operators from HUF 180,000 to HUF 350,000 per year per child.

25.	Support summer camps for children	3
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Within the framework of the Erzsébet Camp Programme, the education districts can submit applications for organising day-care camps for primary education students.

26.	Clarify the legal status of babysitters	1
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27.	Set up a public school bus system	3
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According to a government announcement in November 2018, a school bus network based on the US model will be established in Hungary by the end of 2020.

#	Recommendation	Priority
7.6	Support for home starters	
28.	Make family-friendly improvements to the services of the financial system	2
29.	Extend eligibility for non-refundable assistance under the family housing benefit scheme (CSOK) as an incentive for birth of second children	3

From 1 July 2019, the loan granted at a subsidised interest rate as part of applications for the housing subsidy for families (CSOK) will also be available for the purchase of used homes. With the preferential interest rate capped at 3 per cent annually, 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. The state provides the home creation interest subsidy for the whole maturity but only up to 25 years. Within the framework of the 'Hungarian Village Programme', the rural CSOK is introduced in the rural communities with a population of under 5,000 where the population has shrunk since early 2003. In these small communities, non-refundable subsidies for purchasing and constructing new homes can be used to purchase used homes as well. To prevent property price increases, only up to half of the highest subsidy amount of HUF 10 million can be used for purchasing, and the rest may be spent on renovation and extension.

30.	Adjust the figures specified in the CSOK rules so that the scheme may effectively track developments in the property market	2
31.	Remove the HUF 35 million cap on the CSOK available for the purchase of used homes	1

As part of the Family Protection Action Plan, the conditions of CSOK for purchasing used homes have been modified. As of 1 July 2019, the limit of HUF 35 million was abolished in the case of the CSOK requested for purchasing used homes.

32.	Tighten the rules applicable to the purchase of homes for investment	2
33.	Develop new district concepts to improve the territorial allocation of housing developments	1

At the government's request, Budapest's long-term urban development plan is being formulated, and it will include plans concerning the courses of home developments in the capital.

34.	Utilise vacant public housing	1
35.	Increase the duty allowance on first home purchases	2
36.	Arrange for the continuous review of the value threshold of the duty allowance on new home purchases	2

7.7	Support for home creation by the expansion of construction capacities	
37.	Increase the construction workforce	3
38.	Scheduled market entry of public investments	2

At the government's request, Budapest's long-term urban development plan is being formulated, taking into account the availability of the funds and capacities necessary for implementing the designated home development objectives.

39.	Ease administrative barriers to home construction	2
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7.8	Recognition of parenthood in the pension system	
40.	Acknowledge the number of children raised in assessing the initial amount of pension	1
41.	Consider the family tax allowance for pension calculation	1

#	Recommendation	Priority
7.9	Mitigating the demographic challenges of the pension system	
42.	Membership in supplementary pension funds by subjective right	3
43.	Support employers' contributions to supplementary pension funds	2
44.	Increase the effectiveness of state subsidies in supplementary pension funds	1
45.	Increase investment and cost effectiveness and security	1

Instead of the current one-sided financing based on payments, the MNB has designed a more balanced cost model based on assets and payments, in consultation with the advocacy organisation of pension funds.

46.	Ensure that welfare funds provide a range of family-friendly services and support home purchases	3
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Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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8 Healthy society

Health status is an area where the interests of individuals, families, economic actors and the society coincide: it is best for everyone if individuals live as long as possible and as healthily as possible. The health status of the population and the health care system are important factors in providing the quantity and quality of human capital necessary for the functioning of the economy. Health is part of the human capital stock that fundamentally determines the economic growth rate and its future potential. It exerts a major impact on labour market participation (and thus also the number of workers available in an economy), labour productivity and the consumption and saving rate through the number of years spent working. Also, the health care industry can contribute to economic growth through its output. Using the currently high rate of direct out-of-pocket financing by households in a clearly regulated, supervised and professional institutions would better support the long-term investments of private health care and the reduction of illicit activities in the system and ease the pressure on public health care.

In compiling its competitiveness recommendations concerning health, the MNB's main priority was to raise the healthy life years in Hungary from 60 to 64 years by 2030. This requires the strengthening of the preventive system, especially supporting regular physicals and screening tests that foster the early detection of diseases. The continuous indebtedness of public institutions and the inefficient use of private funds necessitates a comprehensive overhaul of the financing system. That is why the MNB's recommendations include the establishment of Welfare Funds, the assessment of actual costs and a focus on systemic cost efficiency. More effective functioning of the public care system would be fostered the most by reducing the hospital-centric approach, increasing the number of health care personnel and staff, using modern technologies and strengthening professional and financial control. More efficient spending would be facilitated if as many people from the working-age population as possible joined the Welfare Funds, which could be encouraged by the introduction of guaranteed membership. The establishment of the system of supplementary private health insurance would provide a new form of supplementing the social security system and reducing the burden on it.

Among the recommendations aimed at improving health status, implementation has started in 16 cases in 2019. Major progress has been made in strengthening the preventive system. The excise duty on tobacco products will continue to be raised in the years to come in several steps, as announced. Numerous measures seek to expand screening tests as widely as possible, promote regular physical activity and strengthen primary care, especially the general practitioner system and emergency medical services. Wage increases for health care personnel and staff have started, including maternity nurses and the staff of the Hungarian National Ambulance Service. There has been no major progress in overhauling the public funding system, but the preparation of performance-based financing in rehabilitation care is a promising development. Channelling out-of-pocket payments to professional institutions could considerably boost the transparency and effectiveness of the system, however, the implementation of the recommendations has not started in this area. The improvement of the care system is underway in several fields, out of which the development of same-day care capacities and the fostering of the spread of telemedicine and the use of innovative technologies are especially welcome. Strengthening professional and financial control has begun, but significant advances need to be made in this area to substantially increase the systemic efficiency of the care system.

#	Recommendation	Priority
8.1	Strengthening of prevention	
8.1.1	Preventing illnesses	
1.	Promote healthy eating habits through information and tax benefits	3
2.	Incorporate basic health knowledge into public education curricula	3
3.	Extend the public health product tax	2
4.	Increase the excise duty on spirits	1
5.	Increase the excise duty on tobacco products to reduce smoking and the costs of related diseases	1

Currently, the excise duty on tobacco products in Hungary is lower than the minimum required by the EU. Therefore, in order to reach the European Union's minimum level of excise duty, the rise in the excise duty on cigarettes and cut tobacco will continue in several steps from 1 January 2020, in a predetermined manner. During the excise duty increase, the excise duty content of cut tobacco will gradually approach that of cigarettes, which could contribute to reducing the use of hand-rolled cigarettes that are very popular among young people.

6.	Provide opportunities for regular sports activities	3
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The popularisation of sports activities is aided by the fact that in 2019 Hungary hosts close to 150 international sports events, while Budapest also earned the title of European Capital of Sport for this year. Under the National Public Education and Infrastructure Development Programme, 51 swimming pools and 47 gyms are being developed in September 2019. Within the framework of the second subprogramme of the 'I Believe in You!' Sport Programme, a tender for small and medium-sized sports clubs was announced with an allocated amount of HUF 200 million. The launching of the first phase of the National Skate Park Programme started in 2019, which is aimed to support the establishment of skate parks that are safe and can satisfy the needs of hobby athletes as well as professionals.

7.	Offer grant schemes to support the creation of quality work and home environments	1
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8.1.2	Supporting early recognition	
8.	Strengthen the functions of the general practitioner system	3

In the 'Three Generations for Health' tender, 81 general practice partnerships received a total of HUF 5.4 billion in subsidies, with aim of preventing cardiovascular diseases, assessing of risk factors, strengthening of the public's health-consciousness, increasing participation in cancer screening and educating children about healthy lifestyles. Since 1 July 2019, maternity nurses have been covered by the wage scale of health care personnel and staff, and therefore they will also receive the 4-stage, 72-per cent wage increase by 2022. From September 2019, the chickenpox vaccine will be compulsory and administered to children at 13 to 16 months of age. The National Health Insurance Fund (NEAK) put out a tender for filling general practitioner and dentist practices that have been vacant for at least 12 months, with a total amount of HUF 1.25 billion, and the same amount is allocated for supporting the purchasing of practice rights.

9.	Support regular physicals and screening tests	3
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A national campaign entitled 'Bringing Screening Tests to Your Door' is being launched by the National Public Health Centre in cooperation with the Hungarian Charity Service of the Order of Malta and local health care service providers to improve the health of those living in underprivileged communities, offering screening tests locally in 30 communities in 2019. A new oncology centre will be constructed in Salgótarján by the end of 2020 for HUF 13 billion. Within the framework of its programme of almost HUF 10 billion, the National Healthcare Services Centre is renovating hospitals' pathology wards across the country, and equipment for histological examinations is being purchased for 37 pathology wards.

#	Recommendation	Priority
10.	Set up a National Health Database	1
The databases of the National eHealth Infrastructure (EESZT) operating since 2017 will be further expanded: patient information is uploaded for the past five years, and the currently functioning databases (e.g. national blood stocks, vaccine register, maternity and paediatric booklet register, central implant register) will be integrated into the health care cloud.		
11.	Develop and systematically implement a comprehensive mental health package	2
The National Mental Health Programme has become one of the five key public health programmes, however, the government has not adopted the corresponding policy programme and the mental health strategy. The public health programme focuses on four main areas: psychiatry, child psychiatry, addictology and psychotherapy.		
12.	Strengthen the system of emergency medical services	2
The Hungarian National Ambulance Service (OMSZ) was able to purchase 2,500 pieces of new, high-value equipment (e.g. defibrillators, life support systems) from HUF 1.6 billion, which were delivered in the summer of 2019. 254 new ambulances are planned to be purchased in 2019 and 2020, reducing the average age of the fleet below 5 years. The wage increases of health care personnel and staff also include the employees of OMSZ.		

8.1.3	Supporting recovery from illnesses	
13.	Extend funding methods based on patient cooperation	1
14.	Strengthen rehabilitation care	2
After 1 August 2019, the coding rules regarding inpatient rehabilitation care were modified in line with the professionals' proposal. The new coding system based on the Rehabilitation Care Programmes (REP) will serve as the basis for the performance-based financing. The capacity of the Szent Ferenc Hospital in Budapest, which serves the 2 million people living in Central Hungary in cardiology rehabilitation, was doubled from a public subsidy of HUF 3 billion.		
15.	Increase capacities for long-term and home care by strengthening cooperation between health care and social care systems	2
From 1 January 2019, the children's home-care benefit (gyod) was introduced, which is paid to the parents of children who are unable to support themselves, independent of the child's age, and amounts to HUF 100,000 per month. From 2020, the monthly base amount of the care benefit and the children's home-care benefit will grow from HUF 32,600 to HUF 39,365. In 2020, HUF 55 billion will be allocated from the budget for care benefits, which is double the 2018 figure.		

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	3
17.	Ensure that administration and controlling on a case-to-case basis is implemented at health care institutions	2
According to the announcement of the Ministry of Human Capacities (EMMI), a controlling and monitoring system will be set up to strengthen the oversight and control over public health care institutions. However, the details of this are unknown.		
18.	Review the application of performance volume limits	1
19.	Introduce a financing method across levels of care	1

#	Recommendation	Priority
20.	Extend the application of pay-for-performance financing methods	2
21.	Set up a professional feedback system for patient treatment histories	2

8.2.2	Improving the situation of human resources	
22.	Establish a transparent remuneration system	3
23.	Increase the number of health care personnel and staff	3

From 1 July 2019, the wages of health care personnel and staff will increase by 8 per cent (including maternity nurses and the employees of the Hungarian National Blood Transfusion Service (OVSZ) and the National Ambulance Service (OMSZ)). During the multi-stage wage increase programme that began in 2016, the wage of health care personnel and staff will grow by 14 in January 2020, another 20 per cent in November 2020 and an additional 30 per cent in January 2022 relative to the base.

8.2.3	Institutionalised and controlled utilisation of private resources	
24.	Elaborate the conditions for a system of supplementary private health insurance	3
25.	Guaranteed membership in the health funds and provision of targeted incentives for in and out payments	3
26.	Extend support to prevention and service invoices	2
27.	Provide tax benefits on corporate health care packages	1
28.	Provide tax benefits on private health insurance	1

8.3	Improvement of the care system	
8.3.1	Strengthening control in the provision system	
29.	Ensure that minimum requirements, professional and financial directives and protocols are regularly reviewed and updated	3
30.	Develop a clear definition of the care package covered by social security	1
31.	Strengthen professional and financial control	3

In 13 institutions which are the most responsible for the accumulation of hospital debts, an appointed budget supervisor is assisting with financial operations. A controlling and monitoring system will be set up to strengthen the oversight and control over public health care institutions. The State Audit Office has paid special attention to examining the functioning and management of public health care institutions in recent years, and the reports prepared based on that were published in the spring of 2019. Within the framework of the Human Resources Operational Programme, HUF 11.4 billion will be spent on the professional, methodological and legal assistance on reducing hospital-acquired infections.

32.	Ensure standardised measurement and publication of the performance of health care institutions and patient satisfaction	2
33.	Increase the reporting obligations of private health providers	2
34.	Introduce a management assessment system in public institutions	1

At the most indebted hospitals, the performance assessment of managers will be introduced, and when distributing consolidation funds, the NEAK will take into account the responsible financial management of the institutions, just like the change in their performance over time.

#	Recommendation	Priority
8.3.2	Increasing efficiency in the provision system	
35.	Increase the capacity for active same-day care	3
By January 2020, 20 same-day surgical posts will be established from HUF 8 billion provided by the Human Resource Development Operational Programme (EFOP). The programme will include construction work and renovation at 15 sites, and the project creates an opportunity for acquiring equipment, the development of human resources and public information campaigns as well.		
36.	Reallocate and reduce pharmaceutical expenditures on a professional basis	2
37.	Treat the pharmaceuticals trade as a strategic industry	1
38.	Developing telemedicine	1
The national cardiovascular imaging network will be set up, which facilitates the creation of standardised medical reports in 21 cardiology centres across the country. The project will include the construction of a central teleconsultation and a modern telemedicine system supporting telemedicine. The test run of remote monitoring and remote consultations will be performed with the involvement of 250 general practitioners and 50 medical specialists, covering around 15,000 patients and focusing on diabetes, hypertension, cardiac arrhythmias, dermatology and endocrinology.		
39.	Increase reliance on innovative technologies to simplify care management	2
The national oncology information system will be rolled out in 19 county and four regional centres, including the data from all patients as well as the oncotherapy protocol. This is forecast to reduce the current 60-day examination time by one half. In addition, the national central general practitioner reservation system will be established as well as an IT system for the early diagnosis of lung cancer that will be able to automatically assess low-dose CT images.		

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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9 Knowledge-based society

Education has a major impact on a country's economic performance and competitiveness through the quality and productivity of the available labour force. However, measuring the efficiency of the education system is not easy, since for example a graduate has received least 18 years of education since nursery school, and it is difficult to clearly distinguish the value added from the different levels of education. The task of the education system is complex: it must 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 development, it is virtually impossible to say exactly what kind of knowledge the students commencing their studies now will need when they enter the labour market. Therefore, the education system should focus on developing and expanding the appropriate skills of the students and providing practice-oriented knowledge. Moreover, it would be especially important to make the education system instil the desire for continuous development in students, since the positive attitude to learning is vital for lifelong learning.

Internationally, the most acknowledged measures of the quality of public education are the PISA competence tests, in which Hungary should exceed the EU average. The availability of skilled labour is limited considerably by the high rate of early school leaving, and reducing that phenomenon could help mitigate the number of bottleneck jobs. The share of graduates in Hungary is one of the lowest in the EU. A crucial element of the introduction of a new economic model necessary for sustainable convergence is to substantially increase the number of graduate workers and significantly boost the international competitiveness of Hungarian tertiary-education institutions.

Among the recommendations fostering the creation of a knowledge-based society, implementation has started in 24 cases. The new National Core Curriculum and the corresponding framework curricula are currently being developed, and they are scheduled to be introduced from September 2020. In the development of language learning, a major step forward is the public subsidy provided for two-week language courses abroad from 2020, in which all students from grades 9 through 11 can participate. The Vocational Training 4.0 Strategy has determined similar objectives to the MNB's Competitiveness Programme in several fields, such as the reduction of school leaving without qualification, the strengthening of the career guidance system and the dual vocational training. Within the framework of the Digital Education Strategy, the number of IT devices in educational institutions will considerably rise, teachers take part in continuous digital further training and digital learning materials are constantly developed. In terms of strengthening the tertiary education system, fewer steps have been taken, but one should definitely mention the establishment of the new operational model of the Corvinus University of Budapest, which can serve as a model for the development of other institutions. The strategy aimed at increasing financial awareness has entered the implementation phase, and the MNB has been actively involved in this work through the Pénziránytű Alapítvány.

#	Recommendation	Priority
9.1	Improving the public education system	
9.1.1	Primary education focusing on development of skills	
1.	Introduce a grounding grade 0 in primary schools on demand	1
2.	Elaborate a National Core Curriculum focusing on skills development and practical knowledge	3

The government plans to introduce the New National Core Curriculum (NAT) from 2020. The corresponding framework curricula are still being developed, which will be followed by preparation for introduction.

3.	Improve the methods and forms of teaching and learning	3
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Under the Debrecen 2030 education strategy, a complex education development programme is being launched with a total allocated amount of HUF 13 billion, encompassing the development of infrastructure, educational materials and the training structure in public and tertiary education as well as vocational training. The KINCS Research Center of Education Sciences was established at the University of Debrecen, contributing to the rapid integration of family studies into education. Educational institutions in Hungary and abroad can apply for subsidies totalling HUF 850 million in the National Talent Programme, for implementing talent-supporting programmes facilitating the strengthening of mathematical, scientific and digital competences. The framework curricula of alternative schools will be modified, and they will now have to be 70 per cent identical to the structure of the NAT curriculum.

4.	Ensure standardised measurement and publication of the performance of educational institutions and the satisfaction of stakeholders	1
5.	Introduce a basic examination at the end of primary school studies	2
6.	Increase the weight of sciences and information technology in secondary school admission examinations	2
7.	Improve career guidance and promote increased awareness in career planning	2

One of the key areas in the Vocational Training 4.0 strategy is the coordination and renewal of career guidance activities. In the 'Teach for Hungary' programme, university students mentor 7th-graders in 56 small communities.

9.1.2	Strengthen secondary education	
8.	Implement curriculum reform in the secondary school system	3
9.	Apply output criteria and more flexible curricula	2
10.	Strengthen dual vocational training	3

One of the special topics in the Vocational Training 4.0 strategy is the enhancement of the Hungarian dual vocational training model. The strategy proposes the establishment of a labour market forecasting system based on the German model as well as the overhaul of the scholarship system. According to the ITM's announcement, the National Qualifications Register (OKJ) system will be eliminated, which will be replaced with a system better aligned to the rapidly developing economic environment from 2020.

11.	Strengthen the links between vocational training schools and market actors	2
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One of the special topics in the Vocational Training 4.0 strategy is the establishment of a cooperation-based policy aligned with the economic needs of the regions. The strategy aims to strengthen the engagement of the corporations that have a large education base, the enhancement of the active corporate ties of vocational training centres as well as the increased involvement of SMEs in the practical training.

#	Recommendation	Priority
12.	Ensure flexible switching between various forms of education	2

The Vocational Training 4.0 strategy proposes the establishment of an educational structure facilitating the switching between the different forms of secondary school education. The proposals include the introduction of an orientation grade for those who would enter vocational training with competence shortages, the creation of workshop schools where the young people wishing to leave vocational training could at least complete a part of the training as well as the more active support of the entry of technical school graduates into tertiary education.

13.	Reduce (early) school leaving without a qualification	3
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From 1 May 2019, vocational training schools mostly introduced the IT programme designed to prevent early school leaving (ESL system), which operates as part of the Public Education Registration and Education Basic System (KRÉTA). The 'Strengthening the Role of Public Education in Creating Opportunities' EFOP project supported the professional development of the institutions caring for people with severe and multiple disabilities with HUF 7 billion. The amendment of the Public Education Act tightened the rules on the exemptions from the compulsory enrolment in nursery school. The Vocational Training 4.0 strategy seeks to reduce the drop-out rate in vocational training with various proposals (e.g. introduction of partial vocational training, extension of the scholarship system).

9.1.3 Making teachers' career more attractive

14.	Allocate more public and private funds to education	3
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According to the announcement of the government, from 2020, all students will obtain their textbooks free of charge from the 1st to the 12th grade in public education and in vocational training. Financial management of the vocational training centres has been controlled by chancellors since the spring of 2019, whose appointment serves the responsible, transparent and professional financial management.

15.	Increase the number of primary school teachers and teaching assistants	2
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16.	Provide regular further training for teachers	3
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During the implementation of the Digital Education Strategy, 40,000 teachers will receive further training in IT by the end of 2020. Hungary's first massive open online course on digital education ('MOOC is the future of learning') was conducted in the spring of 2019 organised by the Tempus Public Foundation, attracting more than 1,300 participants who could try out the latest innovations in digital education.

17.	Improve the social esteem of teachers, kindergarten teachers and nursery nurses by extending and enhancing the career path model	3
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Amendment of the Public Education Act enabled the option of further wage supplements and incentive pay to school headmasters. EMMI and the Teachers' Union (PSZ) reached a strategic agreement, and therefore the union will have a stronger role than before in legislation and public consultations.

9.1.4 Increasing the efficiency of language teaching

18.	Redesign language examination requirements and align school programmes accordingly	1
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19.	Provide public support and premises for extra-curricular foreign language activities and language exam preparatory courses	2
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9th and 11th graders can take part in two-week language courses in groups in school or individually abroad from 2020. The programme covers 140,000 students annually and will cost HUF 90 billion. The students will be accommodated at families and free-time activities will be organised for them so that they have as many possibilities to communicate in the foreign language as possible. The language courses abroad and the government programme reimbursing the costs of successful language exams introduced in 2018 both help students meet the language exam requirement that will be compulsory at university entry exams from 2020.

#	Recommendation	Priority
20.	Provide the option to take secondary school admission and secondary school leaving examinations in English	1

9.1.5	Boosting foreign relations in education	
21.	Promote more active participation in exchange programmes with other countries	1
22.	Provide incentives for foreign students to stay in Hungary	1

The Tempus Public Foundation organised a training to prepare the staff of tertiary education institutions dealing with foreign students. The employees were introduced to new methods and techniques in English training and took part in simulation exercises and competence-building activities.

23.	Provide bi- and multilingual education in each Hungarian county	2
24.	Promote subtitled films and series	1

9.1.6	Enhancing digital skills	
25.	Develop and maintain information technology instruments in schools and vocational training centres	3

Under the Digital Education Strategy and as part of digital developments, schools are to receive 51,000 laptops, 31,500 tablets, 5,000 projectors, 3,000 interactive whiteboards and 14,000 PCs by 2020. In addition, the government will spend a total of HUF 26 billion from EU and Hungarian funds on providing broadband WiFi in schools. The Vocational Training 4.0 strategy identifies the development of digital devices in vocational training centres as an area for intervention.

26.	Develop digital learning materials	3
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The government has adopted the proposal on the development and introduction of the digital competence framework (DigKomp), which makes the levels of digital competence transparent, readily interpretable and measurable. More than 1,000 schools took part on the 2019 Digital Thematic Week, where close to 1,700 events were held with the participation of around 140,000 students. A roadshow aimed at the safe Internet use by the youth, in which over a hundred experts visit the country's schools and point out the dangers of digital space in a casual form. The Tempus Public Foundation announced a tender for the innovative and creative teaching methods of teachers, teacher groups, professional work communities and teacher-training students. The Vocational Training 4.0 strategy identifies the acquisition of digital learning materials and keeping them up-to-date as an area for intervention.

27.	Integrate programming into the teaching of mathematics	1
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9.2	Internationally recognised tertiary education	
9.2.1	Boosting competition among tertiary education institutions	
28.	Create a competitive environment in tertiary education	3

Transformation of the Corvinus University of Budapest is now underway, and it has been managed since 1 July 2019 by the Maecenas Universitatis Corvini asset management foundation created by the state. The new operational model seeks to provide students with an internationally recognised degree and competitive knowledge, and to enter the university to the top 200 universities globally and the top 100 universities in Europe by 2030 in its own subject.

29.	Develop the infrastructure and equipment of tertiary education institutions	2
30.	Strengthen links between tertiary education and companies	2

#	Recommendation	Priority
31.	Channel market needs and private capital into education	3

Within the framework of the education development programme related to automotive industry investments in Debrecen, a complex automotive industry laboratory will be built at the University of Debrecen, the engineering faculty will be expanded with a new wing, and the complex providing scientific knowledge will be renovated. The Budapest Business School is establishing an Innovation and Knowledge Centre in Zalaegerszeg with public subsidies of around HUF 1 billion, paving the way for more efficient cooperation between the university and economic actors in the future.

32.	Raise R&D expenditure in tertiary education to 0.5 per cent of GDP	2
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Within the framework of the 2019 Thematic Excellence Programme, 55 research themes of 26 universities and state-run research institutions will receive around HUF 14.6 billion. The planned research topics need to be aligned with four fields of research: health, culture and family, secure society and environment, and industry and digitalisation. In the 2020 budget, the HUF 133 billion allocated for R&D&I in the previous year was increased by HUF 32 billion. According to the ITM's announcement, 8 university innovation centres will be established, the first of which will be hosted at the Budapest University of Technology and Economics.

33.	Provide opportunities to lease university infrastructure	1
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9.2.2 Improving the international competitiveness of Hungarian tertiary education

34.	More attractive career path for university professors	3
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35.	Ensure that the ranking criteria for tertiary education institutions are taken into account in funding	3
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36.	Support dual degree programmes	1
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The joint MBA programme of the Corvinus University of Budapest and Fudan University was launched, marking the first time Fudan University started an MBA outside China. Programme participants will receive Fudan University's Master in Finance and Corvinus University's Master in Business Administration degree.

37.	Support publications in English	2
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38.	Launch specific postgraduate courses to reverse student emigration	1
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The American university MIT is launching a health care research programme in the clinical centre of the University of Debrecen. According to the recent agreement, the MIT Catalyst Programme, which has been running in the US for seven years, will launch next year with the assistance of GE Healthcare, specifically targeting PhD students. The cooperation will involve joint research and training development, and the topics covered will include digital medicine, artificial intelligence, virtual reality and sports medicine.

9.2.3 Increasing the ratio of tertiary education graduates

39.	Widen the enrolment base of tertiary education	3
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More than 112,000 students have submitted their application in the 2019 general tertiary education admission process, 4 per cent more than in the previous year. The number of those applying on first choice and also those being admitted to engineering and IT courses has increased sharply. The Vocational Training 4.0 strategy proposes that in the future those graduating from technical schools should enter the targeted tertiary education courses more easily.

40.	Increase the capacity of dormitories	3
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41.	Expand merit-based and needs-based scholarship schemes	2
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42.	Make tuition fees in tertiary education dependent on academic progress	1
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43.	Redesign the course structure in tertiary education	2
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#	Recommendation	Priority
44.	Increase student activity	1
45.	Increase opportunities for partial training abroad	1

Out of the 17 winning alliances in the new tender called European Universities, five have a Hungarian member. Applicants have the common aim of creating European campuses spanning borders, where they can coordinate the operation of the universities, for example their research, administration and services. The Tempus Public Foundation published a work entitled 'Fókuszban a minőségfejlesztés – Az oktatók szerepe a felsőoktatás nemzetköziesítésében' ('Quality improvement in focus – The role of teachers in the internationalisation of higher education') presenting good practices.

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	1
47.	Reduce the drop-out rate in university courses	2

University and college students with either an active or suspended student status but without the necessary number of language exams and university and college students who have passed their final examination but did not receive a degree for lack of a language exam can obtain student loans earmarked for language learning from October in the 2019/2020 academic year. The language learning student loan is a lump-sum loan of up to HUF 500,000 that students need to start paying back 12 months after taking it out.

9.2.5	Spreading financial skills	
48.	Deepen financial literacy	2

The MNB has performed intensive textbook and content development work with the help of the Pénziránytű Alapítvány and in cooperation with EMMI and the Hungarian Institute for Educational Research and Development, and as a result the development of financial awareness in school is now promoted by several textbooks and publications, such as Számoljunk a befektetésekkel! (Let's take into account investments!) and Történelem és pénzügyek (History and finance). The Budapest Business School's Fintelligence Financial Literacy Centre has opened, and its aims include the teaching of new financial solutions and their practical understanding.

49.	Provide further training for financial professionals	1
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The Budapest Institute of Banking (BIB) has signed an agreement with the most prominent European FinTech training centre, the London-based Centre for Finance Technology and Entrepreneurship (CFTE), pursuant to which the BIB will be the CFTE's partner in the region, and the two educational institutions also plan to enter into joint education development activities. The cooperation seeks to ensure that the two institutions offer the most advanced FinTech education programmes in the future in Hungary and in the Central and Eastern European region.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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10 Research and development and innovation

Research and development and innovation capacities fundamentally determine the renewal capacity of the economy. The support provided to research and development activities has increased in recent years, although R&D spending relative to GDP is still below the EU average. Besides the availability of funds, new research staff should be trained and existing staff should be retained in the country or attracted to Hungary. In addition to boosting R&D spending and the number of workers, increasing the number of ties between the corporate sector, tertiary education and the state and reducing bureaucratic burdens can foster the emergence of a modern, competitive research and development ecosystem.

We believe that raising research and development spending to 2 per cent of GDP would ensure that Hungary can enter the information-driven phase of economic development. This would help achieve interim objectives, such as increasing the share of innovative SMEs (to 30 per cent) and boosting the number of research and development personnel within the employed (to 1.4 per cent). The former could be helped by granting special assistance for companies at the start of their life cycles for their R&D expenditure and reducing patent-related costs, while the latter could be assisted by the allowances granted to those with a doctoral title and the wage increase of research and development personnel.

Implementation of more than one third of the recommendations on encouraging research and development and bolstering innovation has already started. In accordance with the Economy Protection Action Plan, research and development will receive additional state funds in the amount of HUF 32 billion in 2020, but the exact aim and method of the extra funds has not been determined. The money could be used for raising the wages of research and development personnel. Cutting red tape in bureaucracy and administration, such as the option of group-level corporate tax payment, the ex-post sharing of the tax base of research and development services, the elimination of the requirement on the supplements to the advance corporate tax with respect to the innovation contribution, could also increase research and development spending. However, there is no change in extending the tax allowance for PhD graduates to researchers holding university degrees, providing additional state subsidies for the costs of doctorate courses, reducing patent maintenance fees and the extension of the targeted tax allowances for SMEs engaged in research and development.

#	Recommendation	Priority
10.1	Providing the necessary human resources for research	
1.	Extend the tax allowance for PhD graduates to researchers holding university degrees	3
2.	Raise the number of assistant staff in research and development through further wage increases	2

In accordance with a point in the Economy Protection Action Plan, in the 2020 budget, the HUF 133 billion allocated for research and development in the previous year was increased by HUF 32 billion. Specific utilisation of the additional funds has not been determined yet, but it could be used for the wage increase of the (assistant) staff working at state-run scientific institutions and research and development workplaces.

3.	Provide state coverage of 50 per cent of the costs of doctorate courses for employees over 30 years of age	2
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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)	1

The introduction of the 'corporate tax group' this year creates a new opportunity for company group's tax planning. The measure provides an opportunity for groups comprising several payers of corporate tax to submit a group declaration instead of individual tax returns, which could improve the willingness for research and development. Another administrative easing is that from 2019 tax allowances can be deducted retrospectively, through the self-revision of corporate tax. Thanks to the changes, companies can use the option of reducing the combined tax base of research and experimental development services for 2018 as well. Also starting this year, the requirement on the supplements to the advance corporate tax, for example with respect to the innovation contribution, is eliminated.

5.	Grant special assistance for companies at the start of their life cycles for their R&D expenditure	3
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The tax base allowance for investments in startups has increased in 2019 from HUF 20 million per year to HUF 20 million per investment. If the taxpayer subject to corporate tax acquires ownership in a startup, three times the value of the acquired share can be deducted from the tax base in the tax year of the acquisition or the three years following that.

6.	Reduce employers' contributions for SMEs implementing R&D investments	2
7.	Reduce patent maintenance fees	3
8.	Favourable accounting treatment of patent revenues	1

Legend

Not started	Started	Partly implemented	Fully implemented
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11 Efficient governance

Countries' competitiveness and sustainable convergence is fundamentally influenced by the state, which is present in economic life as an employer, service provider and regulator. The operation of the state is considered efficient if it creates an optimal environment for individuals and companies while minimising the inevitable distorting effect. For this, public administration needs to perform its duties with the necessary number of staff and in a cost-effective manner, and digitalisation can be an important tool for achieving this. Reducing the headcount in the public sector and cutting the number of overly bureaucratic processes could release resources for the private sector.

We believe that an important instrument in enhancing public administration could be the parallel application of performance measurement and wage bill management. In addition, the expansion of digital public administration would reduce tied-down resources on the side of the state and the private sector as well. In this respect, one objective could be to enable the matters available in Government Windows to be settled online without personal contact. The administrative burden borne by companies is currently higher than the European Union average, and therefore the recommendations also seek to reduce the time spent on completing tax returns. Combating tax evasion could be continued, for example, with the expansion of the system of online cash registers.

The Economy Protection Action Plan announced in May also contributed to the fact that out of the 23 recommendations aimed at increasing the efficiency of the state, implementation has started in 14 cases, and one recommendation, on discontinuing the use of supplements to the advance corporate tax, has already been fully implemented. The realisation of the measures aimed at cutting red tape is in the most advanced stage, although there is still room for improvement here as well, primarily by exploiting more of the opportunities offered by digitalisation. Implementation of the larger part of the recommendations included in the chapter on digital public administration has been started, but further efforts are needed for Hungary to catch up with Estonia, which represents the international best practice. Several of the recommendations aimed at the creation of a customer-friendly tax authority have been included in the Economy Protection Action Plan, including the reduction of the administrative burdens. Among the measures contributing to the reduction of tax evasion that are already underway, the expansion of the system of online cash registers and the reduction of the retail financial transaction levy deserve special mention.

#	Recommendation	Priority
11.1	Smaller bureaucracy	
1.	Audit, rationalise and remove parallelisms in the system of public institutions	1
<p>The major overhaul of the institutional system started after 2010, almost a decade ago, which was followed by a large measure that entailed the elimination of 46 institutions in 2016. There is still room for manoeuvre with respect to reducing the labour demand of public administration and improving the sector's productivity.</p>		
2.	Raise average wages in public administration and reduce bureaucracy	3
<p>The career path model introduced from 2016 in several stages entailed a wage increase of 30–50 per cent between 2015 and 2018. The wages of those working in ministries and background institutions was last raised by 30 per cent in early 2019, which was coupled with a 15-per cent reduction in the headcount.</p>		
3.	Promote wage bill management and performance measurement instead of headcount management	3
<p>The regulation of the narrowly defined public administration was fundamentally changed in 2016, as the career path model was introduced in civil service. The performance-related pay system extended to public administration workers gradually. It has included workers from district offices from 2016, those in county offices from 2017 and those in central administrative institutions from 2019.</p>		
4.	Measure the efficiency of state-owned enterprises and of services provided by state agencies	1
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	3
<p>Out of the 2,500 matters available in government offices, 700 will be simplified or eliminated in the years ahead according to the government's plans. In the course of this, the number of procedures requiring personal administration may be reduced considerably, allowing more room for electronic administration. This process could be promoted if certain authorities gain direct access to public registers.</p>		
6.	Interlink the databases of administrative organisations	2
<p>Readily available, accurate and up-to-date data are vital for public administration: therefore, the Central Governmental Service Bus (KKSZB) was created. It can be used to access several authentic registers, where information sharing is automatic. The connected institutions can access databases such as the company register, the personal data and address register and the travel document register. The system was launched in 2017 and the services offered were expanded substantially in 2018. The judicial organisation joined the KKSZB in 2019, which is expected to make judgements more efficient.</p>		
7.	Enhance mobile applications for simpler processing	1
8.	Increase the share of auto-populated information in electronic forms and datasheets	1
<p>In parallel with the increasing prominence of digitalisation, less and less information is necessary for completing a form online. The development can be seen in the EU's relevant survey (Digital Economy and Society Index), according to which the Hungarian figure for pre-filled forms increased from 27.7 to 31 in a year. Despite the higher indicator, there is still great room for improvement, because the best-performing countries achieve a value of 100. To put this into perspective, Austria had 81.4 in 2019, Estonia had 89.3, while Malta had 100.</p>		
9.	Carry out regular online satisfaction surveys for public services	1

#	Recommendation	Priority
11.3	Customer-friendly tax authority	
10.	Develop the tax authority and increase its efficiency	3

The improving efficiency of the tax authority is attested by the reduction of tax evasion in Hungary. According to a 2019 estimate by the European Commission, the 2018 VAT gap (the share of unpaid VAT) dropped below 10 per cent for the first time in Hungary, even lower than the EU average. This improvement was influenced by the introduction of online cash registers from 2013, the Electronic Trade and Transport Control System and the considerable expansion of online invoicing from 2018. According to the 2018 report by the National Tax and Customs Administration, digitalisation is a key tool in the hands of the tax authority, leading to a 10-per cent drop in the number of people turning up at the customer service and a 50-per cent fall in the number of paper-based tax account statements.

11.	Implement the scheme for corporate tax and value added tax returns produced by the Tax Administration	3
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According to the package of proposals entitled 'Programme for a More Competitive Hungary', besides the personal income tax and the excise duty, the corporate tax will also be automatically reported from 2021.

12.	Develop a taxpayer-friendly, transparent website, provide online processing for a wider range of matters	1
13.	Discontinue the use of supplements to the advance corporate tax	2

As part of the 13+1-point Economy Protection Action Plan, the requirement on the supplements to the advance corporate tax does not apply to companies from the tax year starting in 2019. Irrespective of the law, taxpayers may decide to pay the supplements for 2019, but if they do so, they may also opt to offer of their paid taxes.

14.	Gradually shift the corporate income tax to "cash-based taxation"	2
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Although the corporate tax system did not move much towards this direction, the tax regime has still approached cash-based taxation thanks to several factors. This is partly due to the rapid spread of the small business tax (KIVA), which can be considered a cash-based tax. On the other hand, the amount of development reserves increased significantly in the case of the corporate tax, which means depreciation carried forward, therefore this also makes it similar to cash-based taxation.

15.	Reduce administrative burdens	2
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The Economy Protection Action Plan includes the reduction of tax administration, whereby several tax types are combined and phased out. Fragmentation of the tax regime is reduced by the fact that the in-kind personal health insurance contribution, the pension contribution, the labour market contribution and the in-cash health insurance contribution will be combined from 2020. Also in 2020, the KIVA rate will drop from 13 to 12 per cent, while the EVA will be phased out. According to the Finance Ministry's plans, the number of tax types will be lower by one third in 2022 than in 2018.

11.4	Reduce the extent of tax evasion	
16.	Extend tax obligations to digital multinationals	2
17.	Continue the roll-out of online cash registers	3

Vending machines operated without staff do not need to issue receipts, but in order to prevent fraud, the government decided in 2018 to require that food and drink vending machines be linked to the National Tax and Customs Administration as a new tool for combating tax evasion. Based on the positive experiences after the launch of the system, the operators of all vending machines need to register with the National Tax and Customs Administration from the summer of 2019, and therefore the tax authority can control the transactions at carwashes and parking meters.

#	Recommendation	Priority
18.	Phase out the financial transaction levy	1

In accordance with the government's decision, credit transfer transactions from retail accounts below HUF 20,000 are exempt from the 0.3% transaction levy from 1 January 2019, and in the case of the credit transfer transactions of over HUF 20,000 only the portion in excess of the limit is taxed.

19.	Make it mandatory for specific merchant groups to accept electronic payment methods	2
20.	Reducing illicit activity in the construction industry	2

11.5	Competitive treasury system	
21.	Consolidate and improve the efficiency of the Treasury system	3
22.	Provide treasury account servicing for local governments and state-owned enterprises	2
23.	Improve the Treasury's customer relations, particularly in the sale of retail government securities	1

Around one quarter of the MÁP+ volumes were sold by the Treasury network in the first months, which is a remarkable result given that the Treasury competes with the extensive bank branch networks. However, since purchasing through credit institutions entails maintenance and transaction fees for households, the share of Treasury purchases should be increased further. This could be achieved by boosting sales at post offices, which could be supported by the appearance of the MÁP+ security in materialised form. Sales of retail government securities were expanded from 3 June 2019, and since then the new government security introduced then (MÁP+) can be purchased not only via the traditional sales channels, but also at the designated post offices of the Hungarian Postal Service and Fundamenta-Lakáskassza branches.

Legend

Not started	Started	Partly implemented	Fully implemented
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12 Modern infrastructure and efficient energy use

Developed infrastructure, appropriate access to energy sources and the efficient utilisation of those are fundamental conditions for the efficient operation of an economy. Modern infrastructure reduces transport costs, accelerates transactions, attracts investments and promotes the domestic mobility of labour and capital. Establishment of the appropriate energy mix provides a cost advantage and increases energy security in the short run and ensures sustainability in the long run. There is a growing demand for reducing energy-intensity and environmental burdens even in market competition, but in the long run it is vital.

The objectives in the MNB's Competitiveness Programme determined based on the above principles concerned the acceleration of railway transport and the development of the public road network as well as the alignment of the telecommunications network with the constantly growing needs. The density of the railway and public road network is adequate, but their quality lags behind the European average. The telecommunications infrastructure is currently competitive with the European standard, but Hungary can only keep up with technological progress through continuous developments. Energy dependence can be reduced by improving energy efficiency and expanding domestic energy production. These can also reduce environmental burdens, which can also be influenced by the changing structure of energy use.

Implementation of around two thirds of the recommendations has begun. Many projects are underway that enhance the electrification and comfort of railway transport, but the development of high-speed lines is progressing slowly and the replacement of rolling stock requires further efforts. The length of the motorway network is growing continuously, the reconstruction of motorway M1 has been started and it is expected to be upgraded to three lanes in the near future. However, upgrading the motorway M7 to three lanes and the construction of motorway feeder roads bypassing localities have not been put on agenda. In accordance with the recommendations in the subchapter Telecommunications and electric network that meets the needs of the Fourth Industrial Revolution, there have been measures for smart city solutions and the establishment of 5G. However, no significant progress has been made in developing the electricity network and the IT security software industry. The implementation of most of the recommendations on efficient energy use have been started, for example households' energy efficiency is improved by the expansion of the Warmth of Home Programme. Among the recommendations in the green economy subchapter, the improvement of the agricultural irrigation infrastructure has been partly implemented, because the government has allocated HUF 17 billion annually for increasing irrigated areas in the next 10 years. However, no steps have been taken to provide more state subsidies to wind power plants or introduce the general and compulsory deposit and return system – covering plastic bottles besides glass bottles – that increases the share of recycled waste.

#	Recommendation	Priority
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
<p>Electrification of the railway line in the Northern Balaton region is underway. In the first phase of the establishment of the electric operation on the Szabadbattyán-Tapolca-Keszthely line, the 55-km line between Szabadbattyán and Balatonfüred will be electrified. According to a statement by the Nemzeti Infrastruktúra Fejlesztő Zrt. (National Infrastructure Development Company), the public procurement procedure for preparing and implementing the project has been successfully completed, and the works have started after the contract entered into force. Full completion of the investment is expected for May 2021, according to the NIF Zrt. The contractual amount of the construction works is HUF 23 billion. In addition, the tram-train line between Szeged and Hódmezővásárhely that is expected to be completed in 2021 will provide access to Hódmezővásárhely, which has a population of over 40,000, on electrified tracks. The project's costs amount to HUF 25 billion. Moreover, electrification of the railway track between Püspökladány and Biharkeresztes is currently in the preparatory phase, whereby the line is electrified and modernised.</p>		
2.	Ensure travel speeds of at least 160 km/h on all principal railway lines	3
<p>The contract for the Budapest–Belgrade railway line has already been published in the public procurement bulletin, and the newly built railway line will be licensed for 160 km/h. On the Gödöllő–Hatvan line, modernisation of the track will increase the track speed to 100–160 km/h on a 27-km section by the end of 2020, from a contractual amount of HUF 64 billion. On the 40-km track between Püspökladány and Debrecen, there are also works for raising the track speed to 160 km/h from HUF 73 billion.</p>		
3.	Replace or modernise railway engines and passenger wagons	2
<p>Development of suburban railway transport is facilitated by the fact that 11 double-deck Stadler KISS trains will start operating on the Budapest–Vác–Szob and the Budapest–Cegléd–Szolnok suburban lines from the end of 2019, and later another 29 such trains will arrive, for which the contracts have already been signed. The new trains can accelerate faster and provide more rapid change of passengers in stops. Long-distance railway transport is promoted by the fact that the first twenty new-generation Intercity coaches of MÁV-Start Zrt. (Hungarian Railway Company) suitable for international transport were completed at the end of July 2019. The Hungarian railway company plans to produce 70 IC+ coaches suitable for domestic transport by the spring of 2021. MÁV is currently negotiating to acquire 115 new locomotives to reduce the age of the locomotives that are 40 years old on average.</p>		
4.	Establish an intermodal hub in every county seat and develop railroad freight terminals	2
<p>The establishment of an intermodal hub in Kaposvár, Debrecen, Kecskemét, Zalaegerszeg, Szombathely, Eger and Dunaújváros, and the development of the hubs in Székesfehérvár and Nyíregyháza is underway. With the exception of the Kaposvár project, which is in the implementation phase, all projects are in preparation.</p>		
12.2	Excellent road network	
5.	Upgrade the motorways M1 and M7 to three lanes	2
<p>According to the information on the website of the Nemzeti Infrastruktúra Fejlesztő Zrt. (National Infrastructure Development Company), the upgrading of the M1 motorway section between Budapest and Győr to three lanes in both directions is in the preparatory phase, but the upgrading of the M7 motorway to three lanes is not on the government's agenda right now. Reconstruction of M1 motorway has been a continuous process: in 2018, a 2.5-km section was reconstructed on the M1 motorway towards Hegyeshalom from the junction of the M0 motorway, as was a 12-km section on the same side between kilometre markers 28 and 40. In 2019, the section between kilometre markers 54 and 61 was reconstructed near Tatabánya towards Hegyeshalom. By November 2020, the remaining sections between the M0 motorway and Tatabánya-Újváros will also be reconstructed.</p>		
6.	Promote the construction of motorway feeder roads bypassing localities	2

#	Recommendation	Priority
7.	Enable the use of self-driving cars on highways	1

Construction of some sections of the M76 road suitable for self-driving cars is underway. The highway will connect Keszthely to Zalaegerszeg. Out of the 24 kilometres built in the project's current phase, a 10-kilometre section will be technically suitable for testing self-driving cars, as an advanced data traffic network is integrated into the road. The whole road should be completed by the end of 2022.

12.3	A telecommunications and electric network that meets the needs of the Fourth Industrial Revolution	
8.	Develop 5G technology by opening higher frequency ranges and providing state subsidies for the development of smaller cell sizes	3

Frequencies suitable for 5G communication are sold in the autumn of 2019 under the coordination of the National Media and Infocommunications Authority, through auctioning, and the network can be developed after that.

9.	Subsidise the spread of fibre optic cables	1
10.	Improve insulation across the power grid	1
11.	Increase the share of underground power cables	1
12.	Provide subsidies for increasing the number of higher-amperage connections in households	1

The increasing of the number of higher-amperage connections is not currently subsidised by any targeted government programme, but Kaposvár, Dunaújváros, Szombathely, Tatabánya, Veszprém and Zalaegerszeg are working together to implement smart metre investments, and these communities also coordinate their energy modernisation efforts.

13.	Upgrade the capital and all county seats into smart cities	2
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The upgrading to smart cities is served for example by installing smart metres to public utilities in certain Hungarian cities, the construction of intermodal hubs and the setting up of intelligent passenger information systems. However, the Hungarian county seats do not have a comprehensive strategy describing the detailed goals, the measures and the process of implementation. The government has prepared a pilot project for the practical implementation of smart city developments, which is conducted in Monor, Pest County.

14.	Develop Hungary's information security software industry	3
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12.4	Efficient energy use	
15.	Grant tax benefits to improve corporate energy efficiency	3

Cost accounting rules change favourably in the case of energy efficiency investments, because from January 2020 even immaterial assets facilitating the achievement of greater energy efficiency can be recorded as tangible assets.

16.	Allocate public funds to support the introduction of energy audits	2
17.	Improve household energy efficiency through more intensive subsidisation of renovations	3

Under the Warmth of Home programme, subsidies of HUF 36 billion have been provided to 300,000 households so far. Subprogrammes were also announced continuously in 2019, and the government last announced a subprogramme for smart cost sharing facilitating the modernisation of heating (e.g. smart meters) and replacing radiators.

18.	Continuously assess opportunities for further reductions in regulated energy prices	1
19.	Add high-capacity power storage facilities to the power grid	3

Adding high-capacity power storage facilities to the electricity grid is only in the initial phase, but the first such power storage capacity was installed in Hungary linked to the Zugló Power Plant. 45 per cent of the development costs of the battery were financed from state funds.

#	Recommendation	Priority
12.5	Green economy	

20.	Allocate HUF 50 billion in subsidies for wind and solar power plants	3
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Two cohesion EU tenders financed from non-refundable sources support the spread of solar energy in the fourth subprogramme of the Economic Development and Innovation Operational Programme. The call for bids GINOP 4.1.3-19 was announced in May 2019, and it supports the SME sector's solar panel developments from a total of HUF 24 billion. According to the call for bids, the funds can be used to implement a low-capacity development replacing own electricity use. The GINOP 4.1.4-19 call for bids was announced in October 2019, which can mainly provide the SME sector with subsidies for solar panel developments and other energy efficiency investments, up to HUF 20 billion. The aid intensity of the latter call for bids is capped at 55 per cent, and only firms registered outside the Central Hungary region can apply for the funds.

21.	Allocate HUF 25 billion in subsidies for SMEs' environmental protection investments	3
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22.	Modernise and equip water utilities with smart meters	1
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Kaposvár, Dunaújváros, Szombathely, Tatabánya, Veszprém and Zalaegerszeg are working together to implement smart meter investments, and these communities also coordinate their energy modernisation efforts.

23.	Enhance the sewerage infrastructure in localities with fewer than 2,000 inhabitants, and increase the number of wastewater treatment plants	1
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Small rural settlements can tender for solving their wastewater management for a total of HUF 10 billion, financed partly by EU funds and partly by the budget of Hungary. The settlements eligible to submit bids for the allocated amount include those that are not affected by the development requirements stipulated in Directive 91/271/EEC. The measure aims to reduce the environmental burden in rural settlements by choosing the appropriate wastewater management solution.

24.	Increase the share of recycled waste and introduce the deposit and return system	2
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25.	Strengthen support for electric vehicles	1
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The government has reviewed the Jedlik Ányos Plan on encouraging and regulating electromobility, and issued a new strategic document entitled Hungarian Electromobility Strategy (Jedlik Ányos Plan 2.0). This government strategy includes a policy recommendation that the subsidies for electric cars should not be cut, and that the state subsidy for electric car purchases should already be available at the time of the purchase (and not six months later). Another policy recommendation of the strategy is that based on the Western European practice, electric cars should be supported through taxes determined based on pollutant emissions. The support for electric vehicles can also be seen in the government's vehicle purchases. The government has proclaimed that 30 per cent of the state-owned fleet of cars should be electric by 2030. This is also supported by the fact that 249 electric cars are being purchased for hospitals, with a HUF 3 billion subsidy from the government. In order to make the operation of electric vehicles smoother, a total of 132 charging stations are installed near the hospitals.

26.	Improve the agricultural irrigation infrastructure	2
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Based on a point of the Economy Protection Action Plan, the government allocates HUF 17 billion each year between 2020 and 2030 to increase the amount of irrigated areas and the number of farmers involved in irrigation.

Legend

<i>Not started</i>	<i>Started</i>	<i>Partly implemented</i>	<i>Fully implemented</i>
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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.

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