National economy and public finances in the time of the coronavirus pandemic

Summaries of analyses prepared for the Fiscal Council of Hungary in 2021

Office of the National Assembly, 2021

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INTRODUCTION TO THE STUDIES OF THE VOLUME

Year after year it is an honour to be approached by the Hungarian Economic Association (MKT) to be a co-organizer of the joint conference with the Fiscal Council and thus, of the Central Bank of Hungary and the State Audit Office of Hungary. We are convinced that these meetings are important professional fora for substantive discussions, for open dialogues about the topical processes of the national economy, – in this case – public finances and its subsystems.

Beyond the congresses of economists, our joint conferences with the Fiscal Council have been considered as flagship meetings of the MKT for a decade now. This is not a coincidence: at these meetings organizations commissioned by the Fiscal Council to prepare background studies and the best domestic research institutions present their latest analyses and forecasts before the wide community of MKT professionals and those interested. Perhaps there are no other conferences where so many research institutions would get a forum to present their views at the same time!

The pandemic forced the year 2020 conference to switch location and from the usual Kossuth Club go online. At that time, we thought that it was a one-time occurrence, some sort of a move in desperation. Regretfully, we were wrong: due to the approaching fourth wave at that time, we were forced to organize our 2021 conference once again on the Internet. Obviously, we missed the personal contacts, the conversations in the coffee-breaks; however, the online forum undoubtedly has many advantages as well. For example: the fact that the presentations of the conference can be watched and heard through time at MKT's website, the YouTube channel, and its podcast. Thus, the thoughts expressed there are available not only to the relatively narrow circle of the audience but also to our fellow economists in the country and those living beyond our borders.

With our social and economic experiences of the three waves of the pandemic behind us, we had plenty issues to talk about and discuss at this year's conference. We were over the rough analysis of the immediate economic shock caused by the pandemic and the closures – we have done this through the past year and a half at a number of conferences, approaching the issues from many sides. The presentations of this year's meeting – and the studies of the present volume – are already going beyond this: apart from presenting the situation they are also addressing the directions of recovery. As to the numbers and forecasts it appears that we may have some reason to be optimistic.

Listening to the presentations of the conference and reading these studies I believe that the very rich knowledge accumulated by the Fiscal Council and presented in cooperation with the Hungarian Economic Association, serves as a good basis and a sort of compass for the economic policy leaders to build a strategy; thus ensuring that they would steer the boat of the Hungarian economy toward quiet and rich ports.

Budapest, November 2021

Gyula Pleschinger
President
Hungarian Economic Association

FOREWORD – DEDICATION

Regarding the Hungarian fiscal practice, it is a fundamental notion even today that with the 1989 amendment of the Constitution, followed by the signing of the Association Agreement with the EU in 1991 that opened the door to the European Union and finally, with our accession to the European Union in 2004, the requirements expressing the links to the social-economic-political community of the majority of the European countries have already appeared in our target system and our instrumental determinations. This was also confirmed by our Fundamental Law adopted in 2011. Our EU-accession implied legislative harmonization and the adoption of common European values and norms; i.a. the equilibrium in public finances.

Responsibly thinking Hungarian financial experts realized as early as 2006 – even before the burdens of the worldwide financial crisis fell on us –, that the prevailing domestic practice of the planning and realization of the budget departed in those times from the integrational norms and resulted in ever deepening equilibrium problems in public finances that projected the imminent occurrence of national bankruptcy. Fifteen years ago, looking for solutions and following the initiative of György Kopits, a financial professional of international fame and member of the Hungarian Monetary Council, started the work running along several paths with the aim of establishing constitutional guarantees, procedural rules and authorizations, creating new operational frames and approaches that made it possible for Hungary as well to establish in 2009 an independent institution, the Fiscal Council (Council, FC) guarding over the stability of public finances. It is natural that the decade-and-a-half span has brought about smaller and bigger changes in the life of our national institution, both as regards its functioning and the approach to its tasks. By the end of 2008 – in the shadow of a threatening national bankruptcy and borrowing from IMF-EU – the Act on Responsible Fiscal Management was born in Hungary, aka "ceiling law" (referring to its perception, intervention mechanism and its setting expenditure limits). The law essentially limited the expenditure total of the following year's budget. Beyond this, rules were formulated regarding the structural balance, as well as the predictable amount of government deficit. Apart from a prestigious authority representing the state president, members of the three-men-strong Council were experts recommended by the heads of the State Audit Office and the Central Bank of Hungary. The Council was assisted by an Office, consisting of a significant number of staff with substantial expertise in macroeconomic analysis. The "ceiling act" was in force up to the end of 2010.

It has been ten years now that, by creating the constitutional guarantees of financial equilibrium and followed by the adoption of the Stability Act, the present framework for the realization of the Council's mission was established. The Fundamental Law of Hungary adopted on April 18 2011 dedicates a separate chapter to public finances. The chapter lays down the fiscal rights of the National Assembly. Additionally, it says that public finances shall be managed transparently and in a verifiable manner, keeping in mind the requirements of legality, expediency and efficiency. It also sets up a limit for indebtedness, not solely for the whole of public finances but, within it, also for local governments. This opened a new chapter in rule-based budgeting, reflecting its importance. The Fundamental Law also specifies the extent of the predictable annual government debt by creating the government debt rule. According to this the National Assembly shall not adopt such a central budget act that would increase the government debt above half of the GDP. As long as government debt is exceeding thislevel, the National Assembly can only adopt such a budget law that contains the decrease of the government debt as a share of the GDP, with the exception of those years when the economy is shrinking, due to a crisis, pandemic or natural disaster.

The Fundamental Law raised the Fiscal Council – the organization ensuring compliance with the rules of fiscal stability – to the rank of conditions of constitutional functioning. The Council is functioning subjected to the Fundamental Law and other laws. Within this framework, the Council is involved in the process of formulating the central budget bill on the one hand; thus, as an organization supporting the legislative activities of the National Assembly, it examines the bill and issues its opinion on the soundness of it, while, on the other hand, grants (or refuses) its prior consent to the adoption of the central budget bill and thus ensures the observation of the government debt rule. By this latter task and competence, the Council, as an independent fiscal institution, obtained a role of public law, related to the budget act – the so-called right of consent for the final voting in the National Assembly – together with the respective responsibilities. According to this, if the FC indicates its disagreement in the course of formulating its opinion on the budget bill, the Government should re-negotiate the bill and coordinate again with the Fiscal Council. The right concerning the obligation to give the Council's prior consent regarding the compliance of the budget bill with the government debt rule is an even "tougher" rule: in case the FC refuses to give its prior consent – by wielding its "right of veto" – the final voting shall be postponed, and they should carry on with the procedure until the Council grants its consent.

The decisive role of participating in the preparation of the annual budget implies a background of expert work, research and analyses that bear serious responsibility and assist the orientation and serve as a basis for decision-making for the FC members when delivering their task regarding the planning of the budget. With their respective forecasts and feedbacks related to the half-yearly monitoring of the long-term and medium-term outlooks, the sustainability studies as well as the execution of the current budget act represent and additional contribution for the Council by assisting it in formulating the body's opinion, widening the horizon and the versatile examination of the annual budgetary processes and goals.

With its own tools and, not least with its strong mandate promoting fiscal discipline or, in other words, with its guaranteeing presence and with the support of the very wide-range and versatile expert work, the Council was given the opportunity to contribute to the success of the policy of fiscal equilibrium.

The excessive deficit procedure launched against Hungary shortly after the country's accession to the EU was terminated in 2013, the government debt in the share of the GDP has significantly decreased in the horizon of the decade up to 2019, followed by the successful crisis management in 2020 and 2021 that resulted in an outstandingly rapid restart.

Recalling those professional or politically motivated opinions, favourable and critical – occasionally sceptical – manifestations that accompanied the work or even the composition of the body throughout the past one and a half decades, would exceed the frames of this brief introduction-cum-dedication. However, everyone has always agreed that exercising control over maintaining fiscal stability demands that the professional grounding, objectivity of the decisions and the opinion of the Council shall always be proven and never be questionable, irrespective of the institutional, philosophical or career and professional background of the members of the body. Thus – although their decisions are always personal – it is important to be aware of the basis (solid facts, tendencies, recognition of risks) on what the aforementioned decisions are built and be obvious for anyone at home or abroad. This is why the fact that the professional decisions, opinions of the Council are public and supplemented by extensive justification both in Hungarian and English languages and the background studies, analyses, forecasts are easily accessible to anyone, is of paramount importance. The authenticity of the Council's decisions depends on their transparency. In other words, offering a clear picture of the facts the current members of the body were relying on; what forecasts and evaluations they considered that led to their respective decisions, serving the purpose of keeping and strengthening the stability of the budget, in harmony with their best intentions. This is how the total transparency of the Council's work became a fundamental requirement, following the adoption of the Fundamental Law of Hungary and subsequently the Stability Act that went into specific details. This naturally required that all the professional background analyses commissioned by the Council be available not only for the decision-making members of Parliament and governmental actors but also, for everybody else interested. I think that the opportunity to cast a glance at the more than two hundred papers completed so far or just the sixteen analyses prepared only in the last year, is given not solely for the strictly professional parties but for all responsibly thinking citizens interested in the position of Hungarian public finances and the related processes. They can follow up the road we have completed so far; what were the reasons for the respective decisions of the Fiscal Council when evaluating the financial stability of the state. Beyond this opportunity available for both the professionals and those feeling responsible interest for the state of the financial matters of the country, those interested have had the opportunity to meet the authors of the papers each year at the professional workshops organized jointly with the Hungarian Economic Association and could get acquainted with their respective ideas.

It is common knowledge that the fight against the coronavirus outbreak last year has thoroughly rewritten – among others – the world of budget finances. So it has become an even more important requirement for the Council to have the professional evidence of its decisions related to the fundamentally rearranged financial situation available for an even wider circle. This is why the Council decided that the scientific studies prepared in an extraordinary situation and serving the purpose of supporting the body's decision-making shall be not only published but the FC also commissioned the authors to summarize and update the contents of the respective papers on the state of the economy and public finances of the last months of year 2020 as well. The volume published last year – that has been made available on the Fiscal Council's parliamentary website – was also forwarded to fellow institutions in the world, like the competent authorities of IMF and the European Commission, who welcomed it with great interest. This favourable experience prompted the Council to publish also in 2021 a Hungarian and English language collection of the summaries of papers, shedding light on the background of the body's decisions. Under the force of the circumstances, this volume will be published exclusively online, following the conference organized in cooperation with the Hungarian Economic Association.

In the earlier years the evaluations made by the State Audit Office of Hungary and the Central Bank of Hungary prepared for the FC together with those coming from external advisors, experts representing a wide spectrum of philosophies reported of the strengthening of the economy and the stability of public finances, a rising economic trajectory, beside a significant number of occasionally serious critical remarks and notes with the intention to improve. The papers presented this time are reflecting the serious difficulties caused by the pandemic, the recovery and restart of the economy, the evolution of the domestic and world economic environment. They prove that to successfully fight the consequences of the crisis, to restart the economy, it is fundamental to have a clear, factual awareness of the situation as well as offering reliable perspectives and making them accessible for a wide domestic and international audience can in itself be a tool facilitating the return to the point from where we were forced to deviate by circumstances beyond our power. This is why the Fiscal Council – with the researchers offering professional support and in cooperation with the Hungarian Economic Association – deemed important the publishing of the summaries of the aforementioned papers this year again.

I hope that thanks to the dedicated work of the Secretariat of the Fiscal Council and of the Hungarian Economic Association we proceed on the undertaken road. A long line of papers can gain wide publicity again and by reviewing them readers can acquire a picture of the versatile professional background the Fiscal Council could rely on also in 2021 when formulating its opinions and making its decisions regarding the planning of the Hungarian central budget and the evaluation of the realization of the budget every six months. By publishing the summaries of these papers, the mission of the Fiscal Council becomes known in an even wider circle and its work is becoming even more transparent.

On behalf of the Council, I would like to take this opportunity and express my thanks again to the authors, as well as the management of the Hungarian Economic Association for their valuable contribution.

Kovács Árpád,
Chairman of the Fiscal Council

Dániel Molnár –Diána Horváth – Gábor Regős – Gergely Horváth–
Tamás Isépy – Anna Nikl – István Posgay[1]

MACROECONOMIC AND FISCAL SITUATION PICTURE ABOUT 2020

International environment

In 2020 the European Union's GDP fell by 6.2 percent compared to the previous year. The Eurozone also suffered a recession, at 6.6 percent. The 2.2 percent growth in the U.S. in 2019 turned into a 3.5 percent recession in 2020, with the Japanese economy falling 4.8 percent after an expansion of 0.3 percent the previous year. The economy of the UK shrank by an outstanding 9.9 percent after 1.4 percent growth in 2019. There has been a downturn in almost each economy in the Union: in Germany, the 0.6% increase in 2019 was followed by a 4.9% decrease and in France, the 1.5% increase was followed by an 8.1% decrease. The recession in the Visegrad countries was milder than the EU average: 2.7 percent in Poland, 5.2 percent in Slovakia, and 5.6 percent in the Czech Republic, while in 2019 the growth rates were 4.5 percent and 2.3-2.3 percent respectively, in these countries.

Following the outbreak of the coronavirus epidemic, nearly 22.4 million jobs were lost in the US in two months and, although employment began to grow again in May, in December it lagged behind by 9.4 million from the value a year earlier. In the European Union, the number of employees aged 15-64 decreased by 1.4 percent in 2020. Due to the decline in employment, the unemployment rate in both economies rose: to 6.7 percent in the US in December, and to 7.3 percent in the EU, meaning the former rising by 3.1 percentage points and the latter by 0.8 percentage points on an annual basis.

In the wake of the coronavirus epidemic, the world's leading central banks have introduced significant monetary easing. The Federal Reserve reduced its benchmark rate to 0-0.25% in two extraordinary sessions and relaunched its asset purchase programme. The ECB, on the other hand, did not have the option to cut interest rates due to the 0% base rate, but expanded the scope of its existing asset purchase programme and launched a new programme (PEPP). The regional central banks also reduced their key rates, and in the case of the National Bank of Poland and the National Bank of Romania, government securities were purchased on the secondary market.

10-year government bond yields decreased in all of the countries mentioned before (USA, UK, France, Japan, Germany) until the beginning of March, then – due to the uncertainties caused by Covid19-related restrictions – increased significantly. Overall, with the exception

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[1] Századvég Economic Research Co.t.. Date of submission: 16 April 2021.

of Japan, where yields rose by 5 basis points, the yields of 10-year government bonds in all other countries discussed decreased in 2020. This decline in yields was 90 basis points for the United States, 56 basis points for the United Kingdom, 36 basis points for France and 28 basis points for Germany.

Over the past year, the development of the major currencies with floating exchange rates have shown a varied picture against the dollar: the yen strengthened by 5 percent, the Swiss franc by 9 percent, the yuan by 6 percent, while the euro and the pound depreciated by 9 and 3 percent over the period.

The world's leading stock indices showed also varied trends over the past year as a whole. DAX produced a 5 percent, Nikkei an 18 percent, DJI a 6 percent and Shanghai Composite an 11 percent growth. At the same time, FTSE 100 fell by 13 percent and STOXX by 4 percent between the beginning and the end of last year.

Oil prices in 2020 were on average 32.9 percent lower than the year before. Accordingly, inflation also slowed in 2020 compared to the previous year: from 1.3 percent to 0.8 percent in the United States, from 1.5 percent to 0.7 percent in the European Union and from 1.2 percent to 0.3 percent in the euro area. Within the Union, the countries with the highest inflation are Poland (3.7 percent), Hungary (3.4 percent) and the Czech Republic (3.3 percent). In the fourth Visegrad country, Slovakia, the rate of money deterioration was 2.0 percent.

In the fiscal year 2020 the US budget deficit tripled, reaching 14.9 percent of GDP. As a result, government debt as a share of GDP rose from 79.2 percent to 100.1 percent. Due to the expansion of government expenditures, the average budget deficit in the European Union member states has also increased: from 0.5 percent in 2019 to 6.9 percent of GDP. Due to the growing deficit, the government debt-to-GDP ratio increased significantly, by 13.2 percentage points to 90.7 percent in the EU. At the same time, there have been significantly different developments in public debt across member states, especially in countries that had already been heavily indebted before the crisis, so the crisis caused by the coronavirus epidemic further widened the gap between member states.

The situation of the Hungarian economy

The Hungarian economy contracted in 2020, due to the deconjunctural effects of the coronavirus epidemic and restrictive measures introduced in consequence of the epidemic: according to raw data, the decline in GDP was 5.0 percent, and according to seasonally and calendar-adjusted data, 5.1 percent. Thus, among the Visegrad countries, Hungary's GDP decline was the second smallest: Poland's economic decline was -2.7 percent, Slovakia's -5.2 percent, and the Czech Republic's -5.6 percent in 2020. The GDP deflator describing the development of producer prices was 5.4 percent (after 4.8 percent in 2019). Last year, none of the sectors of the national economy was able to contribute to economic growth and there was a decline everywhere. Compared to 2019 the value added of both the industrial and service sectors decreased by 4.8-4.8 percent, that of agriculture by 6.7 percent and that of construction by 9.4 percent. Thus, the contribution of service sectors to the downturn was 2.7 percentage points, 1.0 percentage points of the industry, 0.5 percentage points of construction and 0.2 percentage points of agriculture. Within the service sector, growth could be found only in two sectors, the most significant of which, 6.2 percent, was in the information and communication sector, followed by a 3.5 percent expansion in the financial and insurance acativities. In case of other sectors, a decline can be observed, the largest of which, -16.6 percent, was suffered by the transport and storage sector.

On the final use side, household consumption expenditure fell by 2.5 percent, taking 1.2 percentage points out of growth. This decline was due to the coronavirus epidemic, as much of the spending of the population was postponed due to uncertainty and restrictions, and this could not have been offset by a 6.2 percent increase in real wages. Gross fixed capital formation fell by 7.3 percent, reversing growth by 2.0 percentage points. Net exports were also unable to contribute to the growth with its -2.4 percentage points. Exports fell by 6.7 percent and imports by 3.9 percent, all due to the disruption of supply chains in the wake of the coronavirus epidemic. At the same time, foreign trade in goods and services was characterized by a similar trend: exports of goods fell by 1.3 percent and imports by 1.0 percent, while in the case of services the decline was 22.1 percent and 15.0 percent, respectively.

Net export surplus were entirely due to foreign trade in services, the balance of which was HUF 1,382 billion, while that of goods was HUF -299 billion, so the total balance was HUF 1,083 billion. Overall, the current account deficit as a share of GDP turned from a level of 0.45 percent in 2019 to a surplus of 0.07 percent by 2020.

In 2020, the number of employed persons in the 15-74 age group decreased by 43,000 to 4,603,000, while in the second quarter, at the height of the crisis, the decline was 87,000. The number of employees decreased more significantly (by 109 thousand), especially in the private sector by 102 thousand, as a result of the imposed restrictive measures and emerging crisis. The reason for the discrepancy between the two data sets is that, due to restrictions, many are unable to work or work only part-time, which in turn has a negative impact on their income situation. The number of unemployed persons rose by 39,000 to 198,000 last year, while their share rose by 0.8 percentage points to 4.1 percent. The labour shortage has substantially decreased, suggesting that some of those who lost their jobs were able to quickly find themselves in one of the vacancies. At the same time, the share of vacancies in the public sector did not decrease last year, suggesting that structural labour shortages persist. The average wage in the national economy also increased dynamically in 2020, by 9.7 percent. Wage increases at the beginning of the year played a role in this, which were not yet influenced by the coronavirus epidemic. However, the composition effect also played a role in it, which results from the fact that lay-offs mainly affected lower average-earning sectors such as accommodation and food service activities. Net average earnings also increased by 9.7 percent to HUF 268.4 thousand, while taking into account various tax allowances; they increased to HUF 277.2 thousand. This represents a 6.2 percent increase in real wages. Thus, net real earnings have risen by a total of 61.3 percent over the past 10 years, compared with only 37.4 percent in the previous decade.

In 2020, inflation averaged 3.3 percent in Hungary after 3.4 percent in the previous year. Meanwhile, core inflation rose from 3.8 percent to 4.1 percent. Thus, on an annual basis, headline inflation also exceeded the central bank target, but was in the target range of 2 to 4 percent, while in the case of core inflation it was already above the target range. Among the individual product groups, the largest price increase, 7.3 percent, was measured in the case of food and non-alcoholic beverages, followed by a 7.0 percent increase in the prices of alcoholic beverages and tobacco products. The 5.6 percent decrease in fuel prices played a significant role in the decrease in the prices of other goods (-0.9 percent), which was due to the declining oil demand due to the deconjunctural effects of the coronavirus epidemic and restrictive measures introduced in the wake of the epidemic. Prices for services rose by 2.9 percent, for household energy by 0.3 percent and for durable consumer goods by 1.4 percent, while those for clothing fell by 0.1 percent. Among the underlying inflation indicators of the Hungarian National Bank (MNB), core inflation excluding indirect taxes was 3.7 percent; demand sensitive inflation was 3.1 percent, while sticky price inflation was 3.8 percent.

Due to the economic consequences of the coronavirus (temporarily lower employment rate and loss of income for companies), the Government decided to suspend the repayment of retail loans until the end of the year, which increased the liquidity of households and companies by HUF 2,000 billion. The decision to resolve the liquidity shock affecting the population was taken by the Government in agreement with MNB.

On April 7, the Monetary Council (MC) of the MNB took several decisions to mitigate the monetary policy aspects of the domestic effects of the pandemic and the expected effects on the real economy. Although it did not change its policy rate, it widened the interest rate corridor, keeping the overnight deposit rate at -0.05 percent, but raised the lending rate by 95 basis points to 1.85 percent. In addition, the Monetary Council raised the interest rate on its one-week covered loan to 1.85 percent. The interest rate on a one-week deposit instrument may differ from the level of the base rate upwards and downwards as well.

On May 4, the Monetary Council launched two programmes: a government bond purchase programme on the secondary market to create a stable liquidity position in the government securities market, and a re-launch of its mortgage-bond purchase programme to increase the long-term funding of the banking system. The central bank appears on the secondary market for government securities, where it can buy fixed-rate government securities denominated in HUF. The mortgage bond purchase programme covers fixed-rate, HUF-denominated, long-term mortgage bonds. According to MNB, there is no upper limit on central bank purchases (government securities or mortgage bonds), but the central bank carries out a technical review if specific volume levels are reached, i.e., HUF 1,000 billion for government securities purchases and HUF 300 billion for mortgage bond purchases.

Over the past year, the Monetary Council cut its key interest rate by 15-15 basis points in two steps (June and July) from 0.9 percent to 0.6 percent. According to the MC, a level of 0.6 percent of the base rate supports price stability (the central bank's basic goal) in a sustainable way, allows financial stability to be maintained and can also serve as a basis for restoring economic growth. In September, MNB raised the interest rate on one-week deposits to 0.75 percent, i.e., it diverted the effective interest rate from the central bank base rate.

In addition, the central bank launched its Growth Bond Programme (NKP) on 1 July 2019. In 2020, the central bank raised the purchase limit of high-quality bonds issued by domestically based non-financial corporations to HUF 450 billion and then to a total value of HUF 750 billion.

The rating of Hungarian government debt in December 2020 was as follows: Moody's had a positive outlook of Baa3, while both S&P and Fitch had a BBB with a stable outlook. Thus, the risk rating of Hungarian government securities in the former is at the lowest level of the category proposed for investment, while for the latter two major international credit rating agencies, it is one notch higher. On the one hand, Moody's outlook on 25 September 2021 is a good signal for the Hungarian economic policy, but it also shows that Moody's still rates Hungarian government bonds one category lower (albeit with a positive outlook). In February, S&P first upgraded Hungary's public debt rating to positive, highlighting sustained economic growth, and then pointed out the negative economic impact of the Covid-19 epidemic and changed the positive outlook to stable.

Last year the ratio of Hungarian government debt denominated in foreign exchange increased: after 17.3 percent at the end of December 2019, it stood at 19.7 percent at the end of December 2020. This ratio corresponds to the 10-20 percent bandwidth requirement set out in the 2020 financing plan. Given that the Government increased the budget deficit planned for 2020 due to the Covid-19 pandemic, it collected some of the increased funding needs from foreign lenders, thereby slightly increasing the foreign exchange ratio of government debt.

In 2020, the stock of Forint government securities intended specifically for households, increased to HUF 9,074.0 billion. In the fourth quarter of 2019 this amount was still almost HUF 1,558.3 billion lower (amounting to HUF 7,515.7 billion). The share of retail government securities in the total government debt thus fell from 30 percent[2] to 25 percent at the end of the previous year. The success of MÁP+ (Hungarian Government Security +) is decisive, as the households have consistently preferred long-term securities (with minor setbacks) since its introduction in June 2019.

The yield curve on the secondary government securities market shifted slightly upwards compared to the end of December 2019, except for the long end of the yield curve. Yields, which are still low/near 0, are due to loose domestic monetary policy at the short end of the yield curve. Significantly declining or stagnant longer-term yields were in line with the general, global trend of declining yields and stagnation, and reflected the central bank's long-term government securities purchases.

By the end of 2020, the stock of non-financial corporate loans increased by HUF 1,065 billion, or 12.85 percent (to HUF 9,351 billion), while the stock of retail loans increased by

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[2] According to the data supplied by the Government Debt Management Agency (ÁKK). MNB shows a lower percentage when publishing the statistics of security holders.

HUF 1,007 billion, or 14.2 percent, to HUF 8,116 billion compared to the end of 2019. Within retail loans, the consumer loan portfolio increased significantly by HUF 632 billion, i.e., by 21.1 percent[3], to HUF 3,625 billion.

Based on the MNB's quarterly time series on the credit institutions sector, the share of (non-performing) loans overdue for more than 90 days decreased in the retail segment as a whole in 2020, while it increased in the business sector. The NPL rate on loans to non-financial corporations rose from 4.3 percent year on year to 4.6 percent (the increase was markedly higher in the first quarter of 2020, but has since declined and stagnated), and the household default rate fell from 6.8 percent to 6.1 percent in 2020. Overall, the introduction of a moratorium on loan repayments has contributed greatly to the low default rates.

During 2020, mainly due to the Covid-19 epidemic crisis and the economic downturn, as well as uncertainty, the Hungarian currency depreciated by 34 forints against the euro, i.e., instead of HUF 330.52 at the end of December 2019, the rate was HUF 365.13 at the end of 2020. The much weaker Forint had a more unfavourable effect on the general government (and the foreign exchange ratio increased to the above-mentioned 19.7 percent), while the household sector that has a minimal amount of foreign currency loans, was not affected much. However, it is important to mention that a persistently weak or weakening domestic currency may lead to higher inflation through import prices.

Budgetary developments in 2020

According to the preliminary cash flow data published in January, the central government sub-system closed with a deficit of HUF 5,548.6 billion in 2020, almost five times (by HUF 4,420.7 billion) more than in the previous year and fifteen times higher (by HUF 5,181.6 billion) then prescribed by law. This was due to the HUF 4,953.5 billion deficit of the central budget and the HUF 641.8 billion deficit of social security funds, as well as the HUF 46.7 billion surplus of the extrabudgetary funds. The central government deficit was more than five times higher than at the end of 2019 (+ HUF 4,021.0 billion), while it was almost fourteen times higher than planned (+ HUF 4,594.5 billion). The social security funds accumulated a deficit almost three times larger than a year earlier (+ HUF 406.9 billion), while the Government expected a zero balance in the appropriation. The surplus of the extrabudgetary funds exceeded the fulfilment of the base period by 18.2 percent (HUF 7.2 billion), while a deficit of HUF 8.0 billion was included in the appropriation.

In 2020, the coronavirus epidemic and the restrictive measures to prevent its spreading shaped the revenue side of the central budget, such as VAT cuts, abolition of the 2019 tax advance supplement, reduction of the small business tax rate, personal income tax exemption for mothers with four children, special taxes, etc. Despite the above-mentioned items, the

[3] The stock of loans offered in relation to the 'baby expecting loan' for retail customers as stipulated by Government decree 44/2019 (III. 12.) is also shown here.

cumulative revenue of the central budget increased by 6.1 percent (HUF 1,323.2 billion) compared to the 2019 outturn. Compared to 2019, for the whole of last year, the payments of economic units increased by 13.9 percent (HUF 196.4 billion), the amounts received from consumption-related taxes by 2.1 percent (HUF 127.4 billion), while the payments of households increased by 4.8 percent (HUF 128.7 billion). The increase in the payments of economic units was mainly due to the 34.0 percent (HUF 103.2 billion) increase in the amounts received from corporate tax. In the case of consumption-related taxes, the 3.0 percent (HUF 136.7 billion) increase in revenue from value added tax should be highlighted, while in personal income tax receipts from retail payments the 4.3 percent (HUF 103.2 billion) increase should be mentioned.

Year 2020 as a whole was characterized by higher-than-expected revenues and expenditures. Measures taken to curb the coronavirus epidemic played a significant role in the development of a significantly higher-than-planned cash flow deficit. Purchases of medical devices related to the coronavirus epidemic amounted to HUF 614.7 billion last year. Expenditures related to EU programmes amounted to HUF 2,025.5 billion in 2020, compared to HUF 1,681.1 billion in revenue. The actual fulfilment was significantly higher than the deficit planned for the end of the year, by HUF 5,181.6 billion, which is mainly due to the 18.5 percent (HUF 1,152.9 billion) over-execution of budgetary bodies. The accrual-based deficit as a share of GDP, calculated according to the EU methodology, was 8.1 percent in 2020, compared to the planned 1.0 percent. As a result, government debt as a share of GDP could increase from 65.4 percent in 2019 to 80.4 percent. In view of the emergency, the European Union has relaxed the requirements for member states, and the Fundamental Law of Hungary also allows for derogations from the debt rule in the event of a special legal order or a lasting and significant economic downturn.

Dr. Pál Belyó[1]

MACROECONOMIC AND FISCAL SITUATION IN 2020

Macroeconomic data for 2020 indicate a deep economic crisis. Measured in terms of the volume of GDP at current prices of HUF 47,605 billion, it represented a 5% decrease compared to the previous year. The rate of decline in added value was 4.8% in industry, 9.4% in construction, 6.7% in agriculture and 4.8% in services, where industry contributed 1 percentage point, construction 0.5 percentage points, agriculture 0.2 percentage points and services 2.7 percentage points. On the consumption side of GDP, actual household consumption fell sharply by about 2.6%, while community consumption rose by 2%, i.e., consumption was only 98% of the previous year. The decrease in gross capital formation was 4.4%, of which that of gross fixed capital formation was 7.3%. Foreign trade processes deteriorated markedly, as indicated by a 6.7% decline in the volume of exports and a 3.9% decline in the volume of imports. Final consumption contributed to the economic downturn by 1.3 percentage points, gross accumulation by 1.2 percentage points, and the export-import balance of foreign trade turnover by 2.4 percentage points.

The extent of change of output in 2020 will determine the processes of the coming years. Since the onset of the pandemic, it has become difficult to forecast economic processes realistically and reasonably. The new emergency restrictions introduced during the third wave will further prolong the period of economic recovery and be accompanied by serious social difficulties. The previous pace of growth is likely to be reached only in 2023; most sectors (thus industry and services whose performance is so important in our exports) will hardly make up for the lagging growth in 2021. The equilibrium will not be restored due to the necessary monetary-fiscal easing, the pace of consumer price inflation may accelerate, and the forint may weaken further. Employment could fall again; a significant proportion of small businesses would be facing liquidation and precarious households would struggle with day-to-day problems for even longer.

The pandemic has significantly altered plans…

Starting from March 2020, the global economic situation caused by the coronavirus epidemic fundamentally affected our catching-up process which could have been considered positive so far. The process of the severe economic downturn has become clear and the effects of the worldwide coronavirus epidemic on the Hungarian economy are completely uncertain.

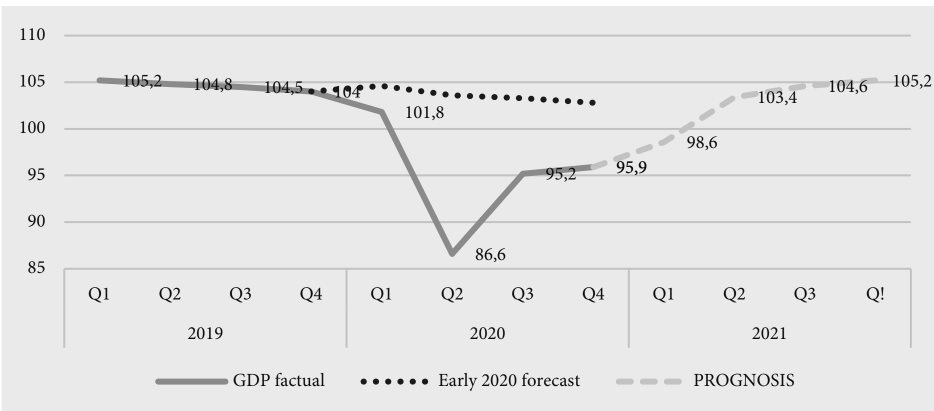
The forecasts are very pessimistic in the EU member states and this also determines the demand for Hungarian exports. The Hungarian rescue measures could only mitigate the

[1] ECO–VISTA Economic Services and Consulting. Date of submission: 26 April 2021.

decline in GDP production in the second half of 2020. The 9% decline in the second quarter was followed by a decline in GDP of around 5-7% in the second half. On an annual basis, the decrease in gross domestic product was 5%. Until 2019, the Hungarian economy was one of the fastest growing economies in the entire EU, but it has now slipped to 26th place among member states in terms of GDP growth. The lack of a rapid recovery is indicated by the fact that the Hungarian industrial confidence indices and the EU economic activity indices, including the IFO business index, indicate a serious weakening.

In 2020, investment fell by 10%, more than GDP. The investment ratio decreased by 1 percentage point, to around 26%. Gross industrial production decreased significantly, by 5.5%. Construction output fell by about 10%, while retail sales fell by 0.2%. Tourism, the sector being most exposed to the epidemic, has suffered a very significant decline. In 2020, the number of foreign guest nights decreased by about 75%, but the number of domestic nights also fell to one-third. Only the telecommunications sector was able to achieve significant growth in 2020, and GDP production already expanded by 5% in 2021.

Figure 1
Development of GDP production, seasonally and calendar adjusted and balanced data (same period of previous year = 100.0%)



Source: Central Statistical Office (CSO) of Hungary, own edition.

In 2020, developments in foreign trade had a sensitive impact on our monetary position through the current account. In the first half of the year exports declined more sharply, resulting in a very significant decrease in assets. Although the performance of foreign trade improved in the summer months, in the autumn, with the second wave of the epidemic, it fell again significantly. On an annual basis, our imports decreased by 1% and our exports by 1.3%. Foreign trade in services has declined, mainly as a result of the significant decline in tourism and international transport, after the positive trend of recent years, and in 2021 there may also be a serious decline in the third wave of the epidemic.

Helping businesses was essential…

One of the main difficulties in 2020 was the deterioration of business opportunities. Industrial production fell by 12.8% in the first half-year. The volume of foreign turnover, which accounts for two-thirds of total sales, decreased by 13.6%, while domestic sales decreased by 7.7%. Industrial production increased only in the Northern Great Plain (by 0.9%) but decreased by 2.9% to 21% in the other regions. It might have fallen by about 25% in Western Transdanubia. Even in June, production fell by 12.2% compared to the previous month and suffered an annual fall in production of around 12%. The fall in the construction industry was similar, and its contract stock was much lower than in previous years.

Although the Government tried to support the survival of the companies and the necessary improvements by significant sums and cheap resources, demand was uncertain throughout the year. As a result, a significant number of businesses have postponed their previously planned investments. In addition to the road construction, railway investments and the preparation of the Paks-2 investment, tourism investments-developments, the construction of sports facilities and the modernization process of the army were the only sure projects.

The number of employees, following the measures taken to overcome the crisis varied greatly from quarter to quarter, but was certainly less than a year earlier. The unemployment rate calculated according to the recruitment methodology rose to 4.6%, and the unemployment rate of 14.7% for those under 25 was 4 percentage points higher than a year earlier.

The number of employees declined at a slower pace than the GDP, although the number of employees also decreased significantly, by around 4%, and the employment ability of enterprises deteriorated sharply, by more than 5%.

In 2020, significant changes took place in the labour market during the crisis. The specific working conditions of employment have changed: home-office, reduced working hours, unpaid leave, forced redundancies have slowed down, and in some areas the previously improving actual income process has reversed. Thus, the actual development of gross earnings, i.e., the slowdown of the previous pace, is reflected e.g., by the fact that the increase in PIT revenues decreased by about half (compared to the previous year), to 5-6%.

Higher inflation and significant fiscal expansion – growing budget deficit…

Financial indicators have also deteriorated sharply as a result of measures aimed at addressing the crisis. Inflation rose to 3.8% in July 2020 – while core inflation rose to 4.5% as an eight-year high. The annual rate of increase in consumer prices was 3.3% but, by the end of the year, it had risen more significantly, above 4%. There have been noticeable changes in inflation. The structure of consumption has changed; the consumption weight ratio of each product group has changed the internal structure of inflation. Among consumer prices, food prices rose more strongly than the average, and this affected more households with lower incomes.

As a result of the crisis, at the end of the first half of the year, the Government raised the general government deficit to 3.8% and then projected a higher general government deficit as a share of GDP (7-9%), which thus is close to 10%. As expected, the annual deficit reached 8.1%, due to higher budget expenditures and much lower-than-planned GDP. The deficit increased by HUF 1,500 billion in the second quarter and reached HUF 2,165 billion by the end of July. This was financed by the issuance of a EUR 3.5 billion foreign currency bond in the spring, but the weekly regularity of bond auctions instead of the previous two-weeks regularity was also an important development. (The PM indicated that due to tax cuts and declining economic performance, the decrease in general government revenue in 2020 may exceed HUF 1,400 billion!)

General government gross debt, which was previously forecasted by the Government at 66.3% by 2020 and then at 72.6% during the year, increased significantly, reaching 80.4% of GDP by the end of the year. The MNB cut the key interest rate to 0.75% in June and then to 0.6% in July, i.e., further loosened its monetary policy. The exchange rate of the forint has been weakening for a long time, from the average exchange rate of EUR/HUF 275.4 in 2010 to an annual average exchange rate of EUR/HUF 351 in 2020, which is a depreciation of 25%. During the year, the very volatile exchange rate sometimes approached EUR/HUF 370. In an emergency, a mandatory annual wage increase of 8% has placed a heavy burden on employers. However, in the case of foreign-owned companies, the possible increase in the burden in terms of the strengthening euro meant a much smaller difficulty (sometimes even no increase in the wage-bill at all). The weakening domestic currency adversely affected Hungarian salaries, which are losing their real value due to rising inflation.

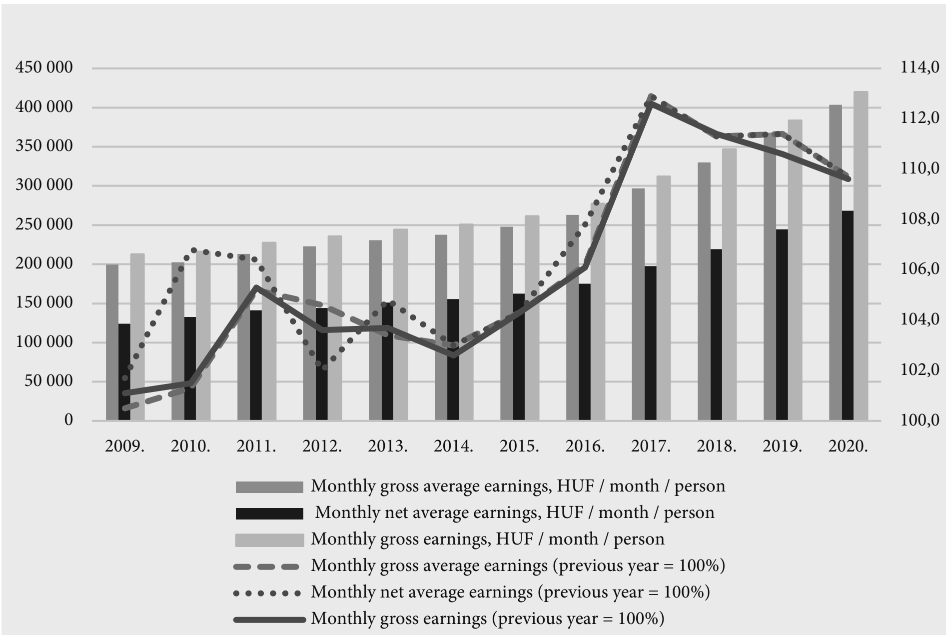
As a result of the crisis, the current account and capital account balance, after a deficit of EUR 1.2 billion in 2019, reached a deficit of EUR 2.8 billion in 2020. Several previously announced foreign investments postponed due to the crisis, were resumed in the second half of the year, but the process is disrupted by another wave. The deterioration of the foreign trade balance was caused by the 6.7% fall of exports and the 3.9% decrease of imports. And the strong volume expansion of gross fixed capital formation since 2017 declined significantly in 2020, to 92.7% over the previous year.

Situation of households is precarious…

Year 2020 was a major challenge for the labour market. Significant redundancies have appeared in several sectors and employment practices have changed fundamentally. The loss of employment has caused serious livelihood difficulties for many families. The economic effects of the epidemic posed the danger that, in the absence of substantial financial support, the lives of families who had been living in relative security so far, would be impossible to maintain, due to the lack of income as a result of mass unemployment. After the outbreak of the epidemic, more than two hundred thousand people lost their jobs or had to suffice with significantly reduced incomes and lived up their small savings during the year, thus losing their financial security.

In 2020, the significant expansion of consumption of recent years slowed down, as the impact of the previously dynamic wage increase, credit expansion and high consumer confidence established by the family protection programme faded. Growth was also dampened by higher housing construction and maintenance costs, higher housing rents and the ongoing inflation process. Therefore, in addition to the state support for the corporate sector, it has also become essential to provide measures and financial assistance to improve the living conditions of households. It was a particularly important step in the field of state aids to help families in the form of job-preserving support.

Figure 2
Change in earnings between 2009 and 2020 (in HUF and % change for previous year)



Source: CSO, own edition.

The average gross earnings of full-time employees in the national economy were HUF 403,600, excluding public employees it amounted to HUF 414,500. The net average salary without tax benefits was HUF 268,400, including benefits HUF 277,200. In the financial and insurance sector the average salary was HUF 709,300, while in the field of accommodation and food service activities it reached only HUF 250,900. The average gross earnings increased to HUF 439,900 for men working full-time and to HUF 370,000 for full-time working women.

Due to declining employment, average earnings grew by 9% on average in 2020, an increase of 6.2% in real terms. The pensioner price index was higher than the average consumer price index, i.e., pensions clearly lost their real value. Household consumption thus fell by around 2.5%, while public consumption increased by the same amount.

By the end of December 2020, the deficit of the central budget was HUF 4,910 billion, almost thirteen times the annual appropriation. The consolidated gross debt of the government sector increased to HUF 38,408 billion, which is 80.4% of the GDP. In its Excessive Deficit Procedure report to the European Union, the Government also announced the planned deficit of the central budget for 2021, which is HUF -3,508 billion, and the planned amount of the consolidated gross debt of the government sector, which may be HUF 41,153 billion.

Table 1
Macroeconomic forecast (previous year = 100%)

	2019	2020	2021	2022*
	Factual		**prognosis**	
GDP volume	104.9	94.9	**102.5**	**103.8**
Industrial production	105.4	94.5	**100.5**	**103.5**
Construction production	123	90.9	**104**	**111**
Retail turnover	106	99.8	**102**	**105**
Gross fixed capital formation	116	96.7	**105**	**109**
Imports	105	99	**103.5**	**104.5**
Exports	104	98.7	**104.5**	**106.5**
Gross earnings	111	109.7	**106**	**108**
Unemployment	3.3	4.3	**4.1**	**3.7**
Inflation	103.4	103.3	**104.2**	**103.8**
Deficit	2.1	8.1	**5.5**	**4.5**
EUR/HUF exchange rate, HUF	325.4	351	**355-360**	**350-355**

Source: CSO.

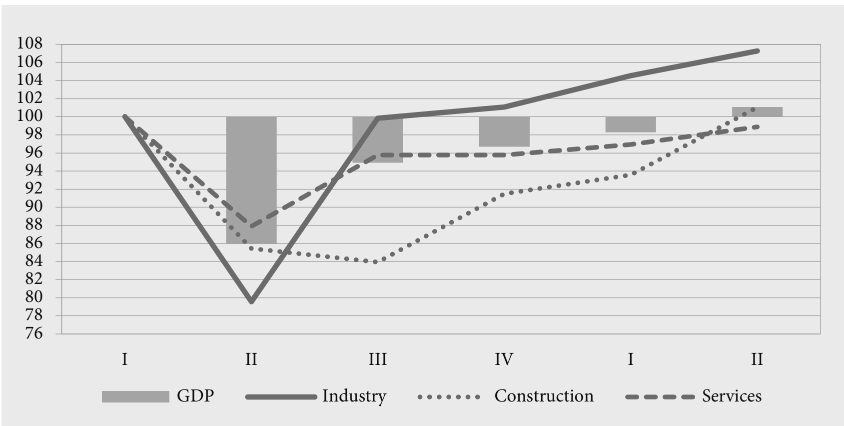
* Own forecast of April 2021.

Zoltán Matheika – Miklós Losoncz – Éva Palócz[1]

MACROECONOMIC REVIEW OF 2020 AND THE FIRST HALF OF 2021

The growth performance of the last quarter of 2020 significantly exceeded the expectations of most analysts, so that not only this quarter (with the rise of the second wave and the restrictions reintroduced in the second half of the quarter) but the whole last year experienced a slighter decline in the Hungarian economy, compared to what could be expected at the time of the first outbreak. In fact, the 4.7% annual decline in GDP was similar to what forecasters (including Kopint-Tárki) thought possible towards the end of the second quarter, i.e., after a promising, albeit partial, rebound from the first wave and before the start of the second wave.

Figure 1
Growth rates of key production components in 2020-2021 (2020 Q1 = 100)



Source: Central Statistical Office of Hungary.

Although the year-on-year dynamics of GDP deteriorated in the last quarter compared to the third one – which has been marked by a partial recovery in economic activity after the downturn, at least for services and even more so for industry – this deterioration was not drastic, and the seasonally adjusted GDP was even able to grow slightly compared to the previous quarter, thanks to industry, but mainly to construction. The second wave did not

[1] The following article summarizes the main findings of two studies written by authors of Kopint-Tárki on macroeconomic and fiscal developments of 2020 (written in April 2021) and that of the first half of August 2021 (written in August 2021).

affect all areas within services and did not have an overwhelming effect on trade, but at the same time, the seasonally adjusted value added of this sector of the economy stagnated in Q4 of last year.

For the year 2020 as a whole, the 4.7% Hungarian economic downturn was slightly worse than average in regional comparison: it was more severe than in Poland, Romania and Slovakia, but was milder than in the Czech Republic and Slovakia.

Table 1

Annual GDP growth rates in the V4 countries and Romania in 2020 (%)

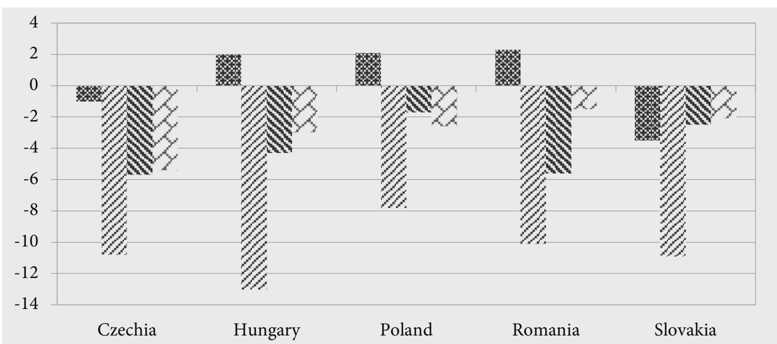
Czechia	Hungary	Poland	Romania	Slovakia
-5.8	-4.7	-2.5	-3.9	-4.4

Source: Eurostat.

Robust negative GDP growth in the first quarter played a role in the strong Czech annual decline: in the Czech Republic, a decline was already measured in the first quarter. However, the same can be said for Slovakia, but due to the less drastic fall (compared to that of Hungary) in the second quarter and the subsequent rapid (albeit partial) recovery, the annual GDP decline was minimally lower than in Hungary. During the second quarter, the shock of the first wave of the epidemic was the most dramatic in Hungary.

Figure 2

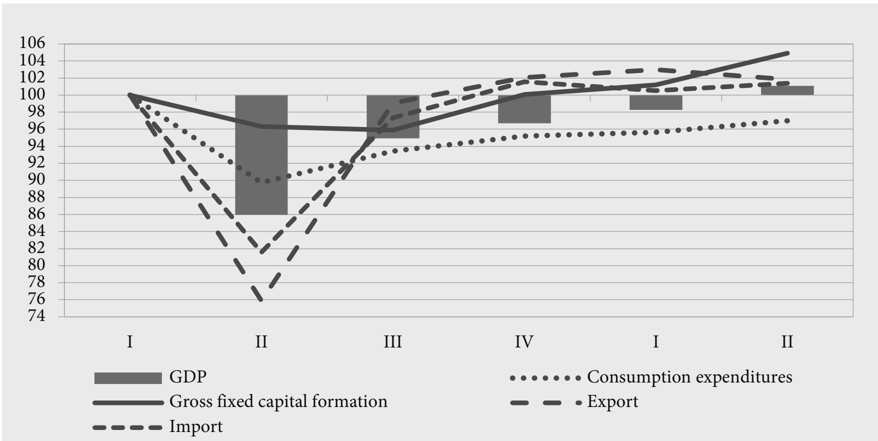
Annual GDP growth rates in quarters of 2020 in the V4 countries and Romania (%)



Source: Eurostat.

The first two quarters of 2021 show that the Hungarian economy has proved more resilient than previously expected to the second and third waves of the epidemic. The seasonally and calendar adjusted volume of GDP has been growing steadily compared with the previous quarter, at a relatively good pace. Thus, while the unadjusted year-on-year indices varied depending on the changing base levels, the overall growth performance of the economy came as a positive surprise in both quarters. In the second quarter, the volume of GDP, including fixed capital formation, and exports and imports of goods were both higher than in the first quarter of 2020, the last quarter before the crisis.

Figure 3
Quarterly growth rates of key consumption components in 2020-2021 (2020 I = 100)

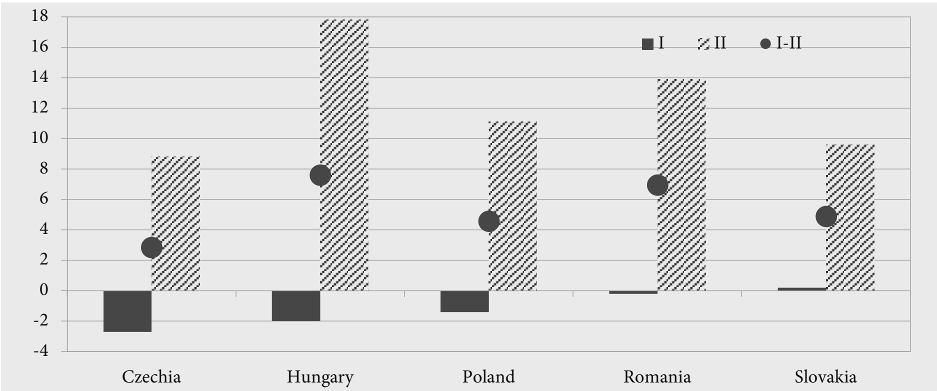


Source: Central Statistical Office of Hungary.

However, two remarks must be made here: on the one hand, the impact of the second and third waves can be seen in the fact that the growth rate of consumer spending (quarter-on-quarter) slowed down significantly in the first quarter of this year. This has also contributed to the fact that by the middle of this year, the volume of consumer spending has not yet reached the level measured in early 2020. On the other hand, the volume of exports, more specifically the exports of goods, declined in the second quarter compared with the previous one. This can be attributed to supply-side problems in the industry, which are perhaps the main source of uncertainty for the rest of the year.

Overall, in the second quarter of 2021, the annual growth rate of GDP jumped to a whole new level, as in the rest of the EU: most countries experienced double-digit growth. This is clearly related to the low bases due to the severe downturn in the second quarter of 2020, as proved by the fact that the fastest growth was achieved by the countries that underwent the biggest downturn last year. But growth in other countries has also exceeded expectations. Among the EU member states, the Hungarian economy performed particularly well: it produced the seventh fastest growth rate in the first half of this year, and the fourth fastest in the second quarter. Among the countries in the region, Hungary had the highest pace in both the second quarter and the first half of the year. (As we have seen, this was also partially due to the fact that in the second quarter of 2020 the Hungarian economy performed relatively poorly, i.e., output fell more drastically than average.)

Figure 4
Annual GDP growth rates in the first two quarters and first half of 2021 in the V4 countries and Romania



Source: Eurostat.

In regional comparison, the development of consumption expenditures in Hungary is not remarkable: the consumption volume in Q2 was higher than in 2019, not only in Hungary, but also in Poland and Slovakia. At the same time, it is noteworthy that in some countries, consumer spending declined further in the first quarter compared to the 2020 average – in the Czech Republic, for example, where the decline in 2020 was already higher than the regional average.

On the production side, with the exception of agriculture, which was largely influenced by non-cyclical factors, the quarter-on-quarter increase in value added in all major sectors of the national economy was continuous in the first half of this year. In the first quarter, this was only reflected in positive year-on-year growth in industry (and a slowdown in services) due to the high base. In the second quarter, however, double-digit year-on-year growth was measured in the three sectors of the economy in question (industry, construction, services), which, based on the above, is not solely the result of a base effect from a year earlier. Of particular note is the 12.4% increase in the value added of services in the second quarter, which is an absolute record: the growth rate has not reached 10% in any quarter since the change of regime. The dynamics of services were boosted by a more than 70% jump in accommodation and food service activities, but trade, transport, info-communications, professional and scientific activities, the health and social care sector and arts and entertainment increased at a double-digit rate as well. An interesting addition, however, is that in the latter case, the good pace stemmed from a mere base effect: in the arts and entertainment sector, seasonally adjusted volume fell from quarter to quarter after the third quarter of last year, albeit at an ever-slowing pace.

The fastest year-on-year growth in the industry was measured (36.9%) in Q2, which is, of course, due to the fact that the first wave of last year hit the industry the most. Thus, even in the average of the first half of this year, industrial growth was the strongest – almost 19% – among the branches of the national economy. The value added of the industry as a whole already exceeded the pre-crisis levels in the first quarter, however – according to the gross production data – the largest industry sub-sector, the automotive industry, did not fully recover, mainly due to the lack of microchips. Furthermore, the problems in the automotive industry apparently worsened in the summer months as well. The causes of the chip shortage are diverse, and logistical disruptions associated with it are multifactorial: the pandemic has only highlighted the vulnerabilities inherent in global just-in-time systems that have become dominant. Thus, on the production side, industry is the area where there is the most doubt about the continuation of good growth.

In the construction industry, the growth is mainly due to the construction of buildings – here the volume is now approaching pre-crisis levels –, however, activity in civil engineering also increased in June-July. A dynamic year-on-year expansion is expected in the construction industry for the rest of the year.

Following a steady deterioration of the year-on-year decline in services, there was a record increase in the second quarter of this year, also as a result of the reopening after the third wave, bringing the volume of services close to pre-crisis levels. Only in the transport-storage and arts-entertainment-leisure sector is the recovery period still significant. At the same time, the continued recovery of private consumption may help the dynamics of services.

On the expenditure side, the steady quarter-on-quarter increase is less uniform this year: in Q1, except for stagnant fixed capital formation (and a drastically negative change in inventories), growth was measured for all components, although, as already mentioned, growth in private consumption slowed compared to the previous quarter. In the second quarter, in addition to a smaller component, public consumption, exports of goods also decreased compared to the previous quarter.

In the case of consumption, the quarter-on-quarter slowdown in Q1 also contributed to the temporary increase in the year-on-year decline. At the same time, in the second quarter, as a result of the base effect – and the recovery in quarter-on-quarter growth – private consumption grew by more than 8% year-on-year, accompanied by a nearly 12% increase in fixed capital formation (this time with a positive change in inventories). Thus, overall, domestic consumption grew by 11.1% year on year in the second quarter.

Investment is the growth component, the recovery of which is unlikely to be significantly hampered by the fourth wave of the epidemic this year. Investments were driven by the state in Q1 and corporate investment in Q2, i.e., the stagnation of corporate investment in Q1 was not permanent. In the first quarter, in addition to the decline in corporate investment, public investment continued to expand at a brisk pace, but in Q2, with the quasi-stagnation of public investment, investment in the sector of medium-sized and large enterprises grew by 13%. While in the first quarter public investment was mainly driven by administrative and health investments, in the second quarter a double-digit decline was observed in these areas – the latter due to the high base (epidemic-related purchases in 2020), but not in the former. Meanwhile, investment in education continued to grow in Q2, with a 67% increase in the semi-public arts and entertainment sector. According to the CSO, there was some growth in the central budget bodies in the second quarter as well, but the decline in local government investment continued.

Foreign trade in goods soared in the last quarter of last year and slowed only slightly earlier this year, although chip shortages and supply disruptions have become increasingly apparent in the industry, especially in the automotive industry. Meanwhile, the dynamics of imports of goods declined more markedly, which may reflect a decline in consumption in the first quarter. In the second quarter, despite a decline in exports and an increase in imports, the positive gap between the dynamics of exports and imports of goods remained wide due to the base effect, and the contribution of external trade in services turned positive, as expected to a much greater extent, as the drastic year-on-year increase in exports of services was accompanied by a continuing year-on-year decline in imports of services.

Overall, net export growth after Q1 continued to exceed expectations in Q2, mainly as the positive divergence between exports and imports in foreign trade in services was at record levels. Here, tourism and transport services play a key role: in the case of the former, in a way that, in addition to the sharp rise in tourism exports, tourism imports have fallen further drastically.

Favourable developments have also taken place in the labour market. By July, the three-month rolling average of the number of employees approached the pre-crisis peak, with the monthly value even exceeding that, by a large margin. The year-on-year decline in the number of employees turned into a growth in the second quarter (by 1.4%), followed by a further acceleration of 2% in July. The acceleration is obviously related to the lifting of restrictions and the restart of certain service branches. However, it should be noted that the number of employees decreased again in August, the year-on-year growth rate fell to 0.5%. The unemployment rate fell to 3.9% in May, after 5% in January following the second wave, and remained broadly unchanged for the next three months.

Regarding the structure of employment, the increase in employment in Q2 is already largely due to the primary labour market: the number of people working abroad was lower in April-June than a year earlier, while the number of public workers was a few thousand higher. As opposed to Q1, the number of employees increased in Q2, although the number of one-person firms continued to increase significantly.

In European comparison, unemployment in Hungarian did not change significantly over the past year. Last June, the unemployment rate in 13 EU member states was lower than in Hungary, and only 12 in June this year. The full-year unemployment rate is expected to fall below 4% this year, after 4.1% last year.

The high degree of uncertainty about the timing and effects of the epidemic has also left its mark on fiscal processes and policies. The international experience, according to which fiscal policy in crisis management has become more important due to the narrowing possibilities of monetary policy, also applies to Hungary.

According to the data published by the Hungarian State Treasury, the cash deficit of the general government central budget increased almost five times by the end of December 2020, to HUF 4,953 billion. Despite the recession caused by the coronavirus epidemic, nominal revenues increased, with expenditures rising due to the deficit, especially in December. The accrual-based deficit as a share of GDP was close to the EU average of 8% in 2020 and a deficit of 7.5% in 2021 is projected in the amended budget law. Data for the first half of the year would allow for a much lower deficit due to faster-than-expected economic growth and higher inflation. The accrual-based deficit was 6% of GDP in Q1, 2.5% in Q2, and 4.2% of GDP in the first half. However, the budget deficit is expected to reach the planned 7.5%, as the measures announced by the Government will significantly increase planned expenditures, and we do not even know the decisions on additional expenditure items that are usually made at the end of the year based on individual government decisions. The inflow of EU funds is a positive risk factor, although there is little chance of this in 2021.

Pro-cyclical fiscal policy is expected to continue in 2022, as the planned budget deficit of 5.9% is coupled with a relatively high growth forecast (around 5%).

The consequences of the coronavirus epidemic have halted the declining trend in public debt since 2010-2011. At the end of 2020, gross government debt calculated according to the Maastricht criterion was about 15 percentage points higher than in the previous year, 80.1% of GDP (10 percentage points lower than the EU average), and by the end of 2021 a rate minimally less than 80% is expected. In 2020, the Public Debt Management Centre relied primarily on forint issues in debt financing, and the central bank, which intends to rely on retail government securities, also joined in June.

In the European Union, the rate of increase of consumer prices in Hungary (3.36%) was the second highest (after Poland) in 2020 (3.63%) and was among the highest in the first half of 2021. It is noteworthy that in 2020 and the first half of 2021, the top five member states in the inflation ranking were the V4 countries and Romania.

The highest price increase in the Hungarian market was observed in the food sector in 2020 (7.2%), while in 2021 fuel, alcoholic beverage and tobacco prices pulled the price index upwards. During 2021, the consumer price index rose steadily, from 2.7% year on year in January to over 5% in May and June. After some summer easing, the price index is again above 5% in the autumn months and may approach 6% in November-December.

Prospects

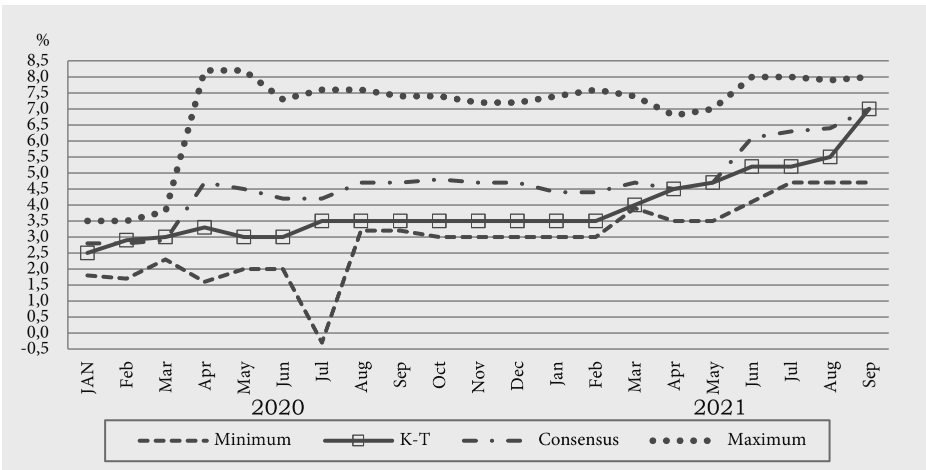
The already favourable growth data for the first quarter have led to a real jump in this year's GDP growth forecasts of analysts. In June, the average forecast was over 6%, up from 5% a month earlier. Kopint-Tárki remained cautious at the time, partly due to supply-side difficulties in the industry and partly due to doubts about the surge in consumption.

However, according to Q2 data, the situation has changed: by the middle of the year, GDP volume has now risen to a level, from which even if quarter-on-quarter stagnation occurs in the second half of the year, annual growth rates would still exceed 6.5%. Thus, we currently expect that growth can even reach 7% this year.

The largely expansionary economic policies of developed countries are encouraging regarding the rest of the year, and there is still hope that the new wave of epidemics will not be as shocking as the previous ones due to the relatively high vaccination coverage. With regard to the latter, however, it is now clear that the recurrent epidemic is having an impact in some regions of the world (even in China), i.e., in the case of supply chains. In the automotive industry, we are witnessing once again downtime due to the still acute chip shortage. The weakening of the automotive industry has so far not reversed the upward trend in industrial output; however, it cannot be ruled out that the August turnaround will signal a lasting change of trend in this area. For the time being, we expect the industry to continue to grow in the second half of the year, albeit at a single-digit (year-on-year) pace.

Figure 5

Consensus forecast for Hungary's GDP growth in 2020-2021 (%)



Source: Eastern Europe Consensus Forecast.

With regard to consumption, cautious optimism is warranted on the basis of continued wage growth and a further improvement in the employment situation, although it is uncertain due to the fourth wave of the epidemic and the possible selective restrictions in the last quarter. Investment growth is also expected to continue at a moderate pace, mainly due to corporate investment.

However, it is also true that the rapid quarterly GDP growth of 2-3% measured so far will not continue, as it was partly linked to the recovery period. In the third quarter, growth may even come to a halt on a quarterly basis. This also affects the annual growth rates, resulting in the already indicated annual growth rate of around 6.5-7%.

We expect a substantially lower growth than this year for 2022, around 5%. The current global inflation trend could be sustained, leading to a significant rise in core inflation after headline inflation figures, forcing anti-growth measures.

We currently see inflation as one of the main threats to balanced growth. Not only domestic demand pressures, rising wages and expansionary and pro-cyclical fiscal policies are fuelling inflationary pressures, but also rising global commodity prices and rapidly rising price indices in partner countries, i.e., imported inflation. The cycle of base-rate hikes initiated by the MNB can only have a slow and limited effect, so even in 2022 we expect a consumer price index above the inflation target band, which could erode the real value of wage increases and trigger a wage-price spiral.

It is also a question of when the previous – already high – levels of corporate and government debt, the multitude of "zombie companies" (not only in Hungary, but on an international scale as well) will backfire, when the wave of bankruptcies will begin in the wake of rising interest rates and the complete lifting of the credit moratorium. In Hungary, the separation of fiscal and monetary policy lines can already be seen, the negative effects of which will perhaps be felt by the end of this year, but certainly next year. The growth-generating effect of public stimulus policies will diminish worldwide next year. The stimulative effect of the government measures announced in Hungary (tax rebates for families with children, tax exemptions for people under 25) will to some extent offset the dampening effect of an overall less friendly international environment, but these measures will punch a significant budget gap.

The demand-boosting effect of the rapid increase in budget expenditures will certainly overheat the economy, further reinforcing inflationary trends. In addition, the financing of soaring public debt could place an increasing financing burden on the budget due to rising interest rates and yield expectations worldwide. The government debt ratio is likely to decline in 2021, with GDP growth at current prices well above 10%, with real GDP growth of around 7% and an expected GDP deflator of 5-6%. Nevertheless, the highly pro-cyclical fiscal policy definitely needs reconsideration.

Balázs Csomós – Gergely Kicsák[1]

2021 BUDGET PROCESSES

For the year 2021, the Budget Act plans a deficit of 7.5 percent as a percentage of the GDP. In 2021 the deficit may decline compared to the 8 percent deficit registered in 2020, which is primarily attributable to the higher revenues resulting from the acceleration of economic growth, while the expenditures linked to the prevention of the pandemic and the measures taken to restart the economy remain significant. According to our forecast, domestic economic performance will be substantially more favourable than the assumption used for the budget and thus, tax revenues may exceed the appropriations, which are also supported by the data from the first three quarters. On the other hand, based on additional expenditure plans, the fiscal room for manoeuvre has been fully used and thus, in our projection, we still anticipate a deficit path that is in line with the Government's deficit target. Owing to the dynamic economic growth, following its temporary rise in 2020, the government debt-to-GDP ratio once again sets on a declining path in 2021.

Developments in macroeconomic trends

Following the coronavirus pandemic, both the macroeconomic projection underlying the 2021 Budget Act and MNB's expectations project dynamic economic growth after the temporary decline in 2020; however, the MNB's projection anticipates faster economic growth. The macroeconomic forecast in the April 2021 amendment of the budget projected a slightly less favourable macroeconomic path than the projection assumed when the 2021 Act was planned. MNB's September 2021 forecast anticipates major, i.e., 6.5-7.0 percent GDP growth this year, while the budget calculates with a more moderate, 4.3 percent growth. In the second quarter, the 17.9 percent year-on-year growth of the Hungarian economy exceeded the expectations and GDP reached its pre-crisis level in the second quarter.

Growth in household consumption is expected to continue in a favourable labour market environment. According to the central bank's forecast, household consumption expenditure will grow by 4.6–5.2 percent this year. In line with expected gross wage bill developments, the budget calculated with a lower growth. According to the MNB's forecast, performance of Hungarian exports may show double-digit growth this year and, as a result of the dynamic growth in domestic demand items and exports, imports may also rise significantly.

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[1] The Magyar Nemzeti Bank regularly supports the work of the Fiscal Council with the publication entitled Public Finance Report — Semi-annual analysis of public finance developments. This paper has been prepared on the basis of this publication and the September Inflation Report, containing an excerpt of those.

Table 1
Comparison of the macroeconomic paths included in the 2021 Budget Act and in MNB's September 2021 Inflation Report*

GDP	Budget Act	Expected based on the amendment of the budget	MNB
Consumption expenditure of households	4.8	4.3	6.5-7.0
Government final consumption expenditure	3.8	3.4	4.6-5.2
Gross fixed capital formation	1.0	0.8	3.5-4.1
Exports	5.5	4.2	4.3-5.3
Imports	10.5	6.4	11.0-12.0
Inflation	8.9	5.2	8.4-9.5
Gross wage bill	*3.0*	*3.6*	*4.6-4.7*
Gross average earnings	8.5	8.0	8.3-9.2
of which: private sector	6.9	7.0	7.7-8.4
Number of employees	7.0	6.9	7.2-8.0
of which: private sector	1.6	0.0	0.6-0.7
GDP	2.0	0.1	0.6-0.7

Source: Annexes to the 2021 Budget Act and 2022 Budget Act, MNB's September 2021 Inflation Report.
* percentage change compared to 2020 data

Domestic budget balance

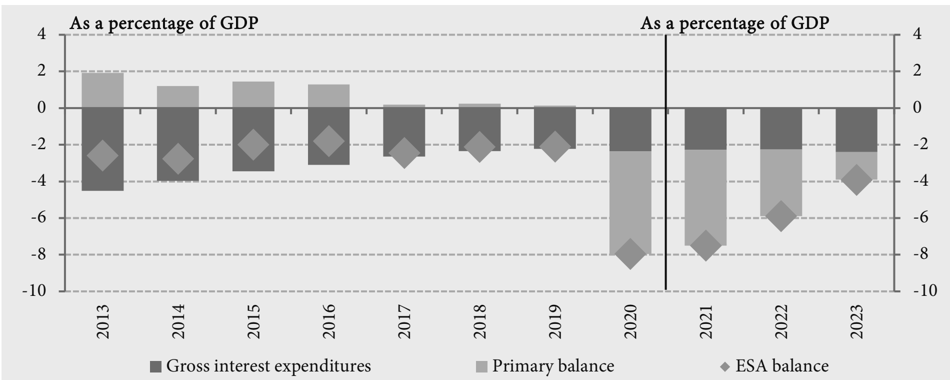
Expected budget balance developments

According to our forecast, the accrual-based deficit-to-GDP ratio of the government sector, in line with the deficit target, may reach 7.5 percent in 2021 (Chart 1). Compared to the 8 percent deficit in 2020, it declines in 2021, which is primarily attributable to the higher revenues resulting from the acceleration of economic growth, while the expenditures linked to pandemic protections and the measures taken to restart the economy remain significant. The more favourable prospects improve the budget balance and reduce the debt ratio through the growth in tax bases and the denominator effect resulting from the higher expected output. However, in parallel with the surplus revenues resulting from the growth beyond expectations, expenditures also increase (in 2021 primarily at the Central Reserves for

Pandemic Control and the appropriation for the Economy Restart Programmes) and thus, overall, we project a deficit path consistent with the deficit target.

The amendment of the 2021 Budget Act defined the cash-based deficit of the general government's central sub-sector in the amount of HUF 2,288 billion, which may be substantially exceeded by the expected cash-based deficit stated in the Act, amounting to HUF 3,990 billion, consistent with the 7.5 percent deficit target under the ESA methodology. The difference between the two is caused by the fact that the revision affected only the appropriations meant to be amended by the Parliament while the appropriations implemented within the competence of the Government and those deviating without separate amendment due to changes in demographic and other trends were not amended.

Figure 1
Changes in the fiscal balance and interest expenditures

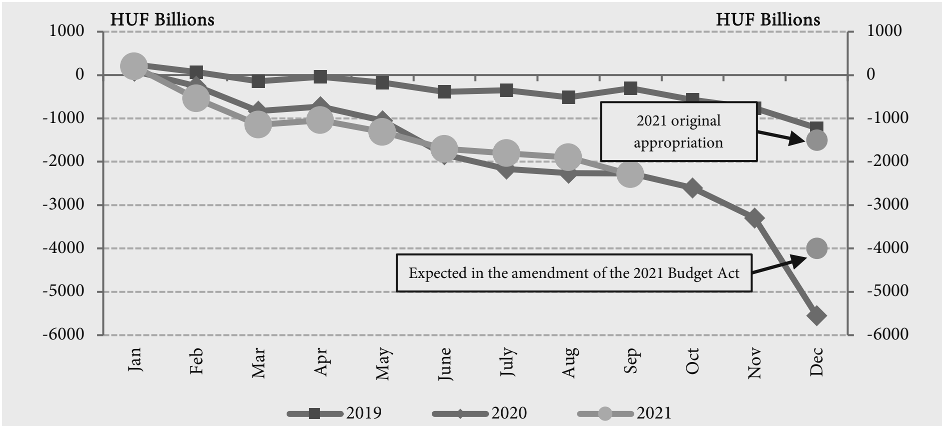


Source: HCSO, MNB.

Presentation of actual data related to the budget processes in 2021

The cumulative deficit of the central sub-sector was HUF 2,292 billion until the end of September, which is almost identical to the deficit of the first nine months in 2020 (Chart 2). The tax and contribution revenues of the central sub-sector were significantly higher, primarily due to last year's low base and the dynamic restart of the economy: after a growth of almost 12 percent, the budget received tax and contribution revenues in an amount exceeding those received last year until September by roughly HUF 1,370 billion. This was partly offset by the lower revenues related to EU grants. Expenditures of the central sub-sector in the first nine months of this year exceeded the previous year's figure by more than HUF 1,100 billion. The increase in expenditures is linked to the gradual reinstatement of the 13th-month pension, the usual pension increases at the beginning of the year and the supplementary one in June, the growth in the support to local governments and the high expenditures related to state-owned assets.

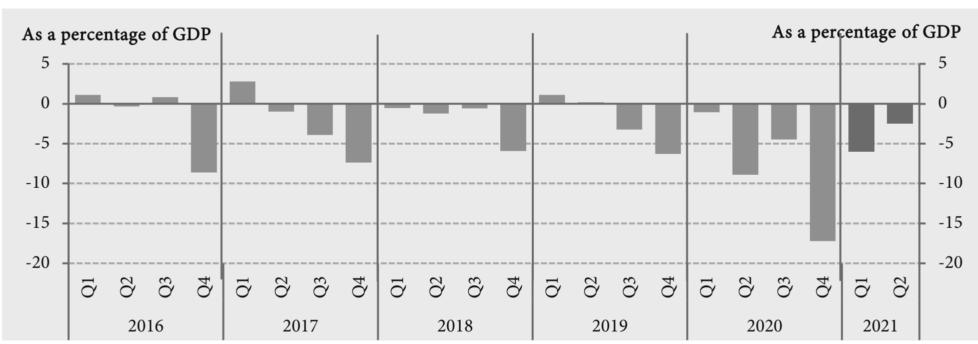
Figure 2
Intra-year cumulative cash-based balance of the central budgetary sub-sector



Source: Hungarian State Treasury, 2021 Budget Act.

Owing to the restart of the economy, the accrual-based budget deficit was low in the first half-year. The Q2 accrual-based deficit was the lowest, i.e., 2.5 percent of the quarterly GDP, since the onset of the crisis caused by the coronavirus pandemic while, together with the 6 percent deficit registered in the first quarter, the accrual-based deficit of the first half-year amounted to 4.2 percent of the semi-annual GDP (Chart 3). Subsequently, as in previous years, the larger part of the budget deficit may develop in the second half of the year.

Figure 3
Accrual balance of the general government sector

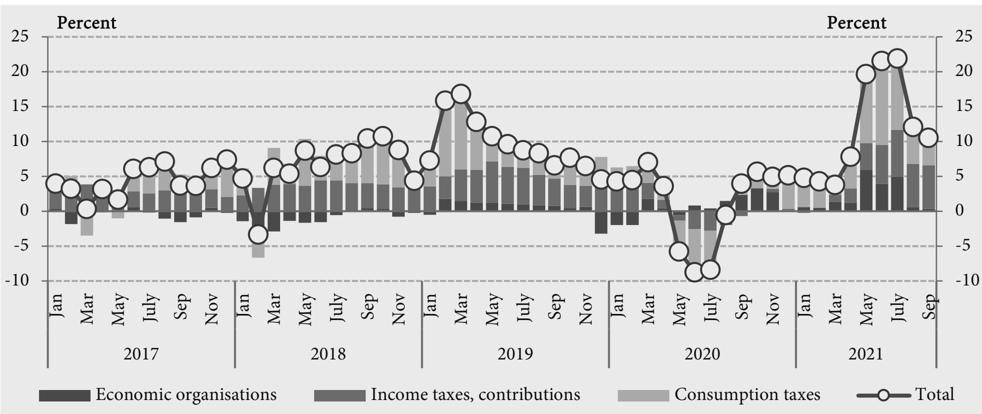


Source: HCSO.

The partly consolidated cash-based revenues of the central sub-sector in the first nine months of this year exceeded the year-on-year figure by more than HUF 1,200 billion. A major part of the growth is attributable to the dynamic rise in tax and contribution revenues, which was partly offset by the shortfall in revenues related to revenues from EU funds. The revenues related to the Recovery and Resilience Facility (RRF), included in the amendment of the 2021 Budget Act, may be received if the Commission and the Council approve Hungary's recovery plan until the end of this year. (For the current status of the RRF in the EU see Box 1.)

Owing to the fast opening and the quick restart of the economy tax revenues showed a double-digit growth starting from the second quarter of 2021 year on year (Chart 4). In the last year, as a result of the restrictions and the temporary targeted economy protection measures, revenues declined significantly. The tax and contribution revenues of the central sub-sector are expected to exceed the revised appropriation by roughly HUF 680 billion (1.3 percent of GDP). A future year-on-year increase in tax revenues is expected because a portion of the tax allowances that were introduced in the period of the state of emergency last year also remained in force in the first half of this year.

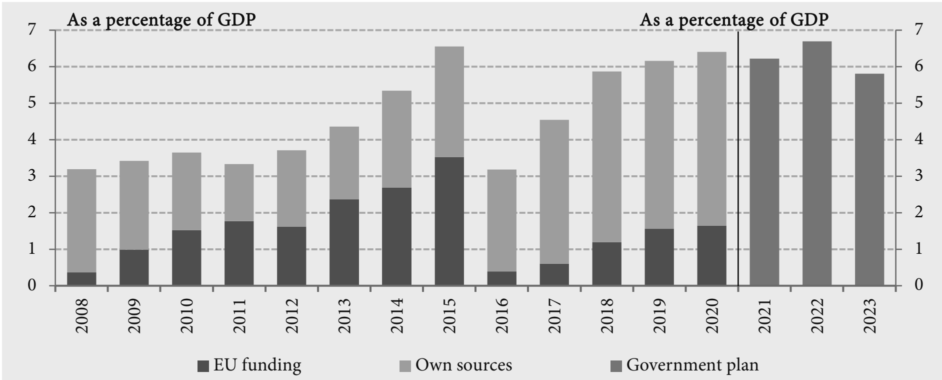
Figure 4
3-month moving average of annual change in central sub-sector's tax and contribution revenues



Source: Hungarian State Treasury.

According to our forecast, the cash-based expenditures of the central sub-sector of the general government may be substantially higher than the amended appropriations in the Budget Act by almost HUF 2,200 billion. The increase in expenditures is primarily caused by the additional costs related to pandemic protections necessary due to the extension of the state of emergency, and new measures were also announced. The measures aim at reopening the economy following the containment and economic protection measures. This year the volume of public investments may be similar to that in 2020 (Chart 5). Due to the dynamic economic growth in 2021, anticipated on the basis of the first half-year's data, a significant pension premium – exceeding 0.4 percent of the GDP – may be paid.

Figure 5
Development of government investment



Source: HCSO, MNB and Convergence Programme.
Note: For the government plan, we showed the expenditure as a percentage of GDP calculated using the MNB's GDP forecast.

A snapshot of the recovery plans in the EU member states

Until 15 October, 26 of the 27 EU member states submitted their recovery plans, 22 of which have already been approved by the European Commission (Chart 6). The majority of the member states have so far only applied for the non-repayable grants, in the total amount of EUR 333 billion. Only seven countries – Cyprus, Greece, Italy, Romania, Poland, Portugal, and Slovenia – have submitted a loan application in the total amount of EUR 166 billion. Member states can apply for funds under RRF until the end of 2023.

To date, The Netherlands has not yet submitted an official recovery plan. The delay in the preparation of the plan may be attributable to the fact that there is a caretaker government in office. The Dutch caretaker prime minister noted that the plan should be submitted by the newly formed government in 2022. The European Council must approve the plans by the end of 2023, at the latest.

Until 13 October, the 13 percent pre-financing was disbursed to 16 member states in the total amount of roughly EUR 51 billion. Pursuant to the prevailing regulation, of the requested support, member states whose plan is approved by the Commission and the Council until the end of 2021 may receive pre-financing from the Commission in the amount of 13 percent.

Figure 6
RRF plans and pre-financing (as of 15 October 2021)

Source: European Commission.

Fiscal impact of certain measures increasing the income of households

In 2021 several measures support the increase in pensioners' income and the growth in the purchasing power of pensions. Early this year pensions were increased by 3 percent, in accordance with the inflation planned in the Budget Act adopted in 2020. However, in 2021 consumer prices are expected to increase faster than that, and thus the government implemented a supplementary increase in June to be followed by another one in November. The gradual re-introduction of the 13th-month pension commenced in February 2021, the first increment of which, i.e., one quarter of the January pension, was received by the beneficiaries in February. In view of the anticipated dynamic growth of the domestic economy in 2021, a pension premium of an unprecedented degree may be paid in November. As a result of the government measures, pension benefits – excluding the replacement effect and the change in the number of beneficiaries – may exceed the 2020 amount by almost HUF 490 billion in total (Table 2).

Table 2
Additional budget expenditures paid to pensioners in 2021

	HUF billion
Pension increase in January	130
First increment of the 13th-month pension benefits	86
Intra-year supplementary increases (January, November)	72
Pension premium	200
Total	**488**

Source: MNB calculations.

The income tax exemption for young people up to the average wage to be introduced next year, will support a rise in households' income. From 2022, the income of employees below the age of 25 will be exempted from personal income tax up to the average wage registered in July of previous year. According to our estimate around 90 percent of the employees below the age of 25 years earn less than the national gross average wage, and thus almost the total wage income of the respective age-group will be tax exempt. The allowance may affect approximately 280,000 people, whose aggregated disposable income could increase by around HUF 130 billion, i.e., 0.2 percent of the GDP. Over the medium term, the tax exemption for young people may increase employment in the age group in question and may contribute to faster economic growth in the upcoming years.

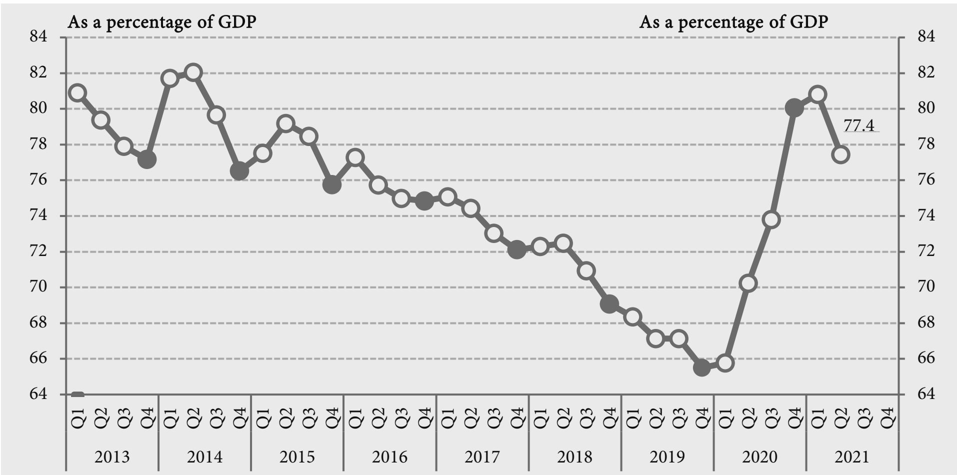
At the beginning of 2022, the Government will increase domestic family benefits through a tax refund, as the budget will reimburse families with children for their personal income tax paid on their 2021 income up to the average wage. According to our estimate, the fiscal impact of the tax refund may be around HUF 600 billion, i.e., 1 percent of the GDP. The refund will generate substantial additional income for those families with children who paid higher personal income tax in 2021. The tax refund is capped at HUF 800,000 per taxpayer.

Similarly to the tax refund, law enforcement and military employees will also receive additional benefits that are subject to an adequate economic growth. Based on an agreement reached at the respective union negotiations, if this year's real economic growth reaches 5.5 percent, law enforcement and military employees are expected to receive a service allowance ("arms benefit") equivalent to six months' wage at the beginning of 2022. The government will implement the payment by bringing forward the payment that is originally due every three years (with the next payment originally due in 2023) to the beginning of 2022. According to our estimation the direct fiscal impact of the measure may amount to HUF 250 billion, i.e., more than 0.4 percent of the GDP, and affect around 75,000 people in total.

Developments of government debt

According to financial accounts data, at the end of Q2 2021, the gross government debt-to-GDP ratio was 77.4 percent. Compared to 80.1 percent at the end of 2020, the debt ratio declined by roughly 2.6 percentage points (Chart 7). The decrease in the ratio is primarily due to the significant rise in GDP.

Figure 7
Quarterly gross government debt-to-GDP ratio

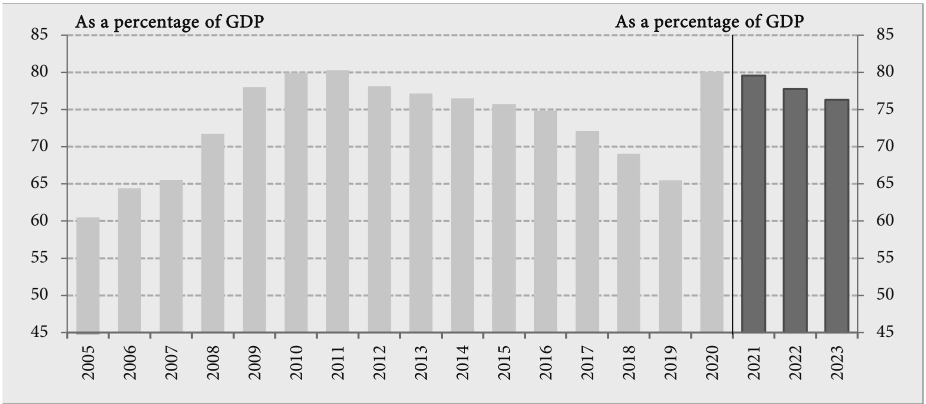


Source: MNB.

According to our forecast, the gross government debt-to-GDP ratio will be 79.6 percent by end-2021 (Chart 8). The ratio is expected to steadily decline over the forecast horizon. According to our projection, following last year's temporary rise, the government debt ratio could decline by an annual 1.4 percentage points on average, and thus by the end of 2023 it may fall to around 76 percent. The delay in the inflow of EU funds may result in a change in the debt ratio's time profile, i.e., this year it causes the debt level to decline slower than expected and then, upon the actual receipt of the funds, it will accelerate the decline of the figure.

The change in the EUR/HUF exchange rate affects the debt ratio through the revaluation of the FX debt, and thus a one-percent change in the EUR/HUF exchange rate modifies the government debt-to-GDP ratio by around 0.2 percentage point. The share of foreign currency within central government debt declined from 19.9 percent at the end of last year to 17.7 percent in 2021 Q2.

Figure 8
Debt-to-GDP ratio



Source: MNB, Government Debt Management Agency.
Note: Looking ahead, calculated at constant exchange rate registered at the end of 2020.

Compliance with the fiscal rules in 2021

There are a total of eight fiscal rules that pertain to the Hungarian general government in 2021: four Hungarian and four European Union requirements. There are two overlaps between the rules: the 3 percent Maastricht deficit criterion and the regulations regarding the medium-term budgetary objective. The other two Hungarian rules include the debt rule in the Fundamental Law and the debt formula specified in the Stability Act. The requirements that only appear in the European Union's legal framework are the expenditure benchmark and the Maastricht debt rule.

Regarding *the debt rule of the Fundamental Law,* Hungary's debt ratio is over 50 percent of GDP; therefore, in accordance with the rule, it must be reduced. Compliance with the debt rule is a condition for the adoption of the budget, which is verified by the Fiscal Council. The 2021 Budget Act was passed in 2020 to include the expected reduction of the government debt ratio, in line with the outlook at the time, thus compliance with the rule was ensured. However, on the basis of the escape clauses, the provisions of the rule may be deviated from in the event of an enduring and significant recession in the national economy or the introduction of a special legal order. The debt ratio is expected to decline this year, and thus the rule is observed.

The other Hungarian fiscal rule applicable to public debt is the *debt formula* of the Stability Act. Based on the amendment to the Stability Act that came into force in 2020, instead of the previous quantified debt reduction formula, the requirement stipulates that, with the simultaneous enforcement of EU regulations, the debt-to-GDP ratio must decrease by at least 0.1 percentage point per year. The decline in the debt ratio this year complies with the provisions of the debt rule in the Stability Act.

The *Maastricht deficit criterion,* included in both the Hungarian and the EU fiscal framework, specifies that the accrual-based deficit of the general government may not exceed 3 percent of GDP. Although the general government deficit-to-GDP ratio of 7.5 percent expected for 2021 exceeds the threshold value, the Maastricht deficit target is subject to an escape clause under both the EU and Hungarian fiscal frameworks. The general escape clause put in place in the EU allows a temporary deviation from the budget balance reference value and from the medium-term budgetary objective and the adjustment path leading to it if this does not endanger fiscal sustainability over the medium-term. Subject to the escape clause, according to the rules in the corrective arm of the Stability and Growth Pact thus, according to the discretionary decision, in the event of a deficit criterion, EU institutions will not initiate an excessive deficit procedure and their activities are limited to formulating revised country-specific economic policy recommendations. In the Hungarian legislative framework, a decline in the real value of gross domestic product would provide exemption from the compliance with the 3 percent deficit rule, which is not relevant this year. However, the relevant paragraph of the Stability Act has been amended and thus the rule applicable to the budget deficit and to the medium-term budgetary objective shall not apply in the period of 2021-2023.

Pursuant to the rules on the *medium-term budgetary objective,* which are also part of the Hungarian and EU legal frameworks, the balance of the general government must be determined so that it is in line with achieving the medium-term budgetary objective. The objective is measured by the structural balance, which refers to the cyclically adjusted balance net of one-off and other temporary items. For Hungary, the medium-term budgetary objective (MTO) is -1 percent of GDP between 2020 and 2022. Following the entry into force of the general escape clause in the European Union, during the period of its effect the Commission will not sanction or examine compliance with the rules of the preventive arm of the Stability and Growth Pact. Thus, Member States will be temporarily exempted from the medium-term budgetary objective or, in the event of non-compliance, from the *expenditure benchmark* designating the adjustment path. According to the notification by the Commission, the specific qualitative target related to the structural adjustment necessary for the correction path leading the medium-term objective may be set in 2022 at the earliest. The rule in the Hungarian legislation applicable to MTO has been modified, and therefore it is not necessary to comply with this requirement between 2021 and 2023.

The *European debt rule* states that the member states' government debt ratio must not exceed 60 percent of GDP or, if it does, the debt ratio must be reduced at a satisfactory pace. The appropriate decrease in the debt is quantified by the one-twentieth rule, according to which the debt ratio should be reduced by one twentieth of the part that exceeds 60 percent on average over three years. Based on its own forecast, the European Commission calculates the extent of the change of the debt ratio using three different methodologies (forward-looking, backward-looking, and cyclically adjusted), and if the one-twentieth drop is satisfied based on any of them, the rule is deemed to have been complied with. Hungary's gross government debt ratio is over 60 percent of GDP in 2021, however, the decline this year is likely to comply with the requirements of the suspended rule. The general escape clause is expected to remain in force until the end of 2022 but, according to the European Commission's latest forecasts, the Hungarian debt-to-GDP ratio would comply with the requirements of the (temporarily) suspended debt rule.

Attila Erdélyi[1]

ANALYSIS OF THE FISCAL PROCESSES BY THE STATE AUDIT OFFICE IN 2020-2021

1. On the focus of the State Audit Office's analyses of the implementation of the budget law

Pursuant to Section 5 (13) of Act LXVI of 2011 on the State Audit Office, the SAO supports the work of the Fiscal Council by preparing analyses and studies. For 2020, the SAO prepared and sent to the FC the analyses related to the evaluation of the budgetary processes of the first and second half of 2020, as well as the analysis of the macroeconomic contexts of the budgetary processes prepared in connection with the 2020 final accounts. Until the preparation of this paper, the SAO performed the evaluation of the budget processes in the first half of 2021.

In addition to supporting the work of the FC, the aim of the SAO's analyses is to assess the impact of the change in the economic environment on the budget as a non-governmental organization on a sound professional basis and to inform the professional public about it.

1.1. Requirements for the implementation of the budget

For the assessment of the implementation of the budget the basic requirements for the SAO are set out in the Basic Law of Hungary (the Basic Law), Act CXCIV of 2011 on the Economic Stability of Hungary (Stability Act) and Act CXCV of 2011 on Public Finances Act (Áht.). One of the basic pillars of the SAO's evaluation aspect is the provision of Article 37 (1) of the Basic Law, according to which "the Government is obliged to implement the central budget legally and expediently, by managing public funds efficiently and ensuring transparency."

Other main aspects of the SAO assessments are the development of the government debt ratio, and the fulfilment of the budget deficit targets. The Basic Law and the Stability Law provide guidelines for these assessments. According to the debt rule set out in the Basic Law (Article 36/5), as long as public debt exceeds half of the gross domestic product, the National Assembly can only adopt a central budget law that includes a reduction in the ratio of public debt to GDP. However, the Basic Law also states (Article 36/6) that the debt rule may be

[1] State Audit Office. Date of submission of the manuscript: 15 October 2021. A shorter version of the paper was presented at the online conference of the Fiscal Council and the Hungarian Economic Association on September 28, 2021.

derogated from during a special legal order to the extent necessary to mitigate the consequences of the circumstances giving rise to it or, to restore the economic balance in the event of a lasting and significant economic downturn. Another domestic fiscal rule for government debt is the provision in Article 4 (2a) of the Stability Act, according to which the government debt ratio must decrease by at least 0.1 percentage points per year in addition to adhering to EU rules. In 2020, Article 7 (2) of the Stability Act exempted the requirement to reduce the government debt ratio due to the decline in the real value of annual GDP.

The Maastricht criterion for the deficit of the general government sector in the domestic budgetary framework is set out in Article 2 (b) Section 3/A of the Stability Act. Pursuant to Article 7 (2), the Stability Act provides for the possibility to deviate from the threshold, subject to a reduction in the real value of GDP.

In 2020, due to the coronavirus epidemic, the rules on public debt and budget deficit were suspended, which led the SAO to change its criteria previously used in its assessments of budget implementation.

1.2. The resilient budget

The SAO changed its analytical perspective by reinterpreting the notion of resilience. The concept of resilience was first used by the SAO in its analysis entitled "Possible tools for more flexible planning and implementation of budget appropriations," published in 2019. According to the analysis, resilience in a general sense means the flexible ability to withstand change, "i.e., the ability of a system to successfully adapt to strong, renewable, or even shock-like external influences" (*State Audit Office* [2019] p. 11). From the budget's point of view, the term means, on the one hand, the expectation of flexibility towards the budget and, on the other hand, the ability to adapt to current changes, both to positive and negative externalities. After all, it is important to see that the budget had to adapt to the favourable economic situation before the coronavirus epidemic as well as to the negative economic and social effects of the epidemic. A resilient budget means that it is resilient to some degree, so budget implementation can meet the deficit targets and the public debt rules required by law, despite the changes.

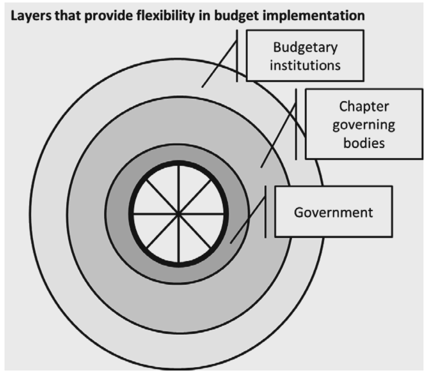
Flexible and responsive budgetary management is justified, on the one hand, by the fact that the implementation of the central budget is affected by several factors and that there may be numerous discrepancies in the implementation of individual appropriations due to unknown or non-quantifiable effects. On the other hand, the implementation of the central budget needs to adapt to changes in economic processes, constantly changing economic growth and the emergence of new expenditures. This flexible budget implementation needs to be operated in full compliance with budgetary rules.

Based on Figure 1, the budget resilience can be compared to a bicycle wheel with a solid structure of rim and spokes, and a properly inflated tire provides flexibility (*State Audit Office* [2019]).

According to the SAO, resilience in the budget is basically ensured by three organizational levels: the activities of the Government, the chapter governing bodies and the budgetary institutions during the implementation of the budget.

Figure 1

Layers of flexible budget management

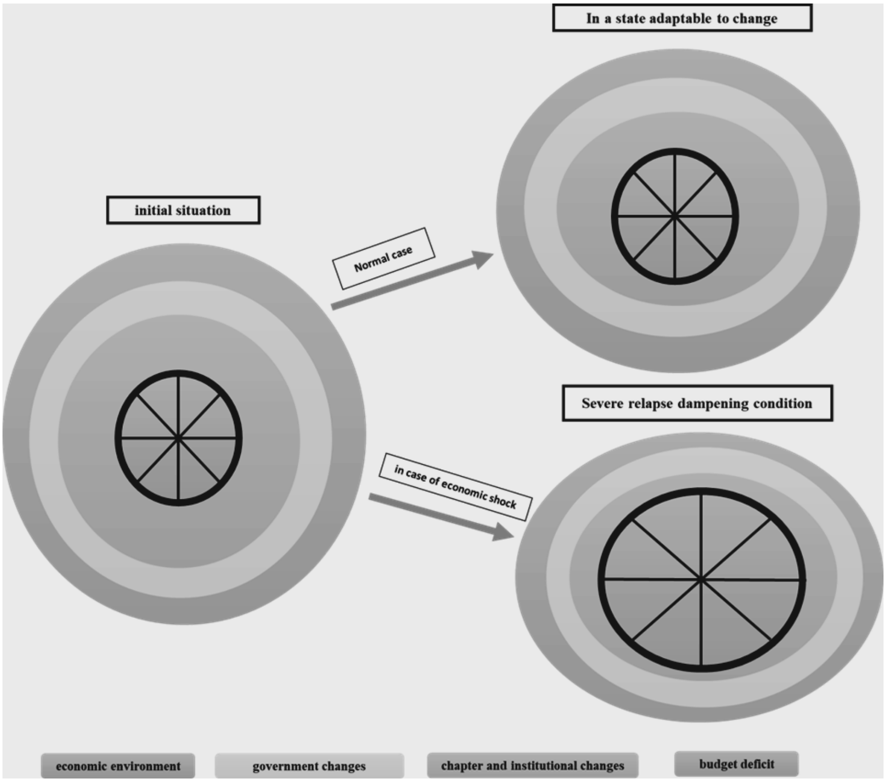


Source: State Audit Office [2019] p. 12.

1.3. The concept of fiscal resilience in normal case and economic shocks

In the normal economic environment, free from external shocks, the SAO interpreted fiscal resilience in its study published in 2019 as responding flexibly to environmental changes following the adoption of the Budget Act, the bodies responsible for budget implementation take measures so the goals set out in laws remain available and budget implementation can meet the deficit and debt targets. In the case of favourable changes, the Government will take advantage of the increased room for manoeuvre, for example by reducing taxes. This condition (the normal case) is shown in Figure 2 by the upper wheel.

Figure 2
Fiscal resilience is normal times and in the event of an economic shock



Source: own compilation based on the State Audit Office [2019] and Pulay–Simon–Kisapáti [2020].

Figure 2 shows how the various conditions (economic environment, government changes, chapter and institutional changes, budget deficit) change in the normal case and in the case of an economic shock after the initial situation. The main difference between the normal case and the economic shock case is the evolution of the budget deficit. Normally, the implementation of the budget is obliged to maintain the budget deficit target in all circumstances.

In contrast, in times of economic shock, the interpretation of resilience changes completely. From then on, the task of the budget is no longer to meet the deficit target as much as possible, but to improve the resilience of the national economy. It seeks to achieve this objective even at the cost of sacrificing fiscal equilibrium and failing to comply with the public debt rule. This condition is shown in the bottom right wheel of Figure 2, which shows that the economy is contracting during an economic shock. This is when the role of the state comes to the fore, i.e., the fact that fiscal policy, even at the cost of increasing the budget deficit, tries to "support" and stabilize the economy against the shock. This type of resilience can be assessed by the extent to which fiscal policy has been able to create resilience in the economy. In this respect, the SAO assessed the budgetary processes in 2020 and the first half of 2021.

Following the end of the negative effects of the coronavirus epidemic, one of the key issues in future economic policy debates is expected to be the pace at which it will be possible to return to fiscal equilibrium. In connection with this, a new interpretation of resilience may emerge, i.e., how well the Government will be able to restore the budget equilibrium and comply with the requirement to reduce public debt once the shock is over. This possibility of interpretation may provide the SAO with another perspective in its analyses of budget implementation.

2. Assessment of budgetary developments in 2020 and the first half of 2021 in terms of resilience

The SAO assessed the budgetary processes in 2020 and the first half of 2021 from the point of view of resilience, as presented above. In order to implement a sound budget, the Government has taken a number of economic policy measures that have had an impact on budget revenues (tax revenues) and expenditures over the period under review. In its analyses, the SAO mostly sought the answer to how fiscal policy strengthened the resilience of the national economy in 2020 and in the first half of 2021, by what budgetary means, as well as the impact of the Government measures taken on the budget and the macroeconomic situation processes.

2.1 Evaluation of tax policy measures

The coronavirus epidemic caused an economic shock to the national economy in the spring of 2020, so the Government supplemented the previously defined tax policy directions with the use of temporary tax instruments necessitated by the management of the epidemic. The basic directions that were also valid during the coronavirus epidemic were the following (*State Audit Office* [2021b]):

- further development of a system that supports families, employment, reduces the burden of living and doing business, stimulates employment, investment and growth, and curbs black economy;
- further improving the simplification and transparency of the tax system;
- further reduction of the administrative burdens in tax proceedings, improvement of tax morale, improvement the relationship between taxpayers and the tax administration, and further encouragement of co-operation and voluntary compliance.

The mentioned directions played a significant role in shaping the budget deficit, public debt, economic growth, employment, and competitiveness in the period before 2020. Among other things, the implementation of these tax policy directions contributed to building up the strong foundations of the Hungarian economy, which could face the shock-like effect of the Covid-19 virus epidemic.

The main tax and contribution policy measures that most shape the revenue side of the central budget are summarized in Figure 3.

Figure 3

The main tax and contribution policy measures for 2019 and 2020

Changes in 2019

- *The **minimum wage** and **guaranteed minimum wage** increased following the previous wage agreement (by 8%), which affected the tax and contribution base.*
- ***The administrative burden on large companies** has been reduced (group taxation in corporate taxation).*
- *In the case of **larger enterprises,** the maximum value of the development reserve increased (to HUF 10 billion), and the **obligation to supplement and replenish tax advances** in December was **abolished.***
- *In the case of the **small business tax (KIVA),** the thresholds for **eligibility and cessation of taxpayers increased** (to HUF 1 billion and HUF 3 billion, respectively).*
- *The scope of the **special tax on financial institutions** has been narrowed, in some cases the upper rate of the tax rate has been reduced (to 0.20%), the accident tax and the insurance tax have been merged.*
- ***Az áfa esetében** az alanyi adómentesség határa emelkedett (12 M Ft-ra)*
- *In the case of VAT, the limit of personal tax exemption has increased (to HUF 12 million). Other products (UHT, ESL milks) were subject to a **reduced (5%) VAT rate.***
- ***The social contribution tax levied on employers** did not have to be paid to the retired employee in his own right, II. and from the first half of the year the tax rate decreased (by 2 percentage points).*
- *The **public health product tax** has increased and the range of obligatory products has expanded.*

Changes in 2020 and beyond, mainly related to the management of the COVID-19 epidemic

Workplace protection

- **Exemption from public burdens on employers** for companies in the sectors most exposed to the epidemiological emergency.
- **Temporary remission of tax** for certain services subject to the itemized tax (KATA) of small taxable enterprises
- From July 1, **the social contribution tax rate will be further reduced** from 17.5% to 15.5%

Supporting and strengthening priority sectors

- **Targeted reduction of the VAT rate (to 5%);** for accommodation services, for the sale of food and drink from November to the end of the emergency, or for delivery to the home, and for the sale of residential properties of less than 150 m2 in rusted areas from 22 July.
- **Suspension of the tourism development contribution** from 1 March 2020 to 31 December 2021 and **remission of the tourist tax** from 1 April 2020 until the end of the emergency.
- **Discounts of the SZÉP card** (increase of the budget amount and cancellation of the SZOCHO burden from 22 April 2020 to 30 June 2021, interoperability between sub-accounts until the end of 2021).

Corporate tax relief

- In the case of **corporate tax**, the profit-related 50% limit of the **development reserve** was **abolished** in 2020 (upper limit: HUF 10 billion, which was abolished from 2021).
- **KIVA,** from 1 January 2020, the **tax rate decreased** from 13% to 12%. From 2021, a further 1 percentage point reduction, the tax rate will be 11%. The **revenue threshold increased** from HUF 1 billion to HUF 3 billion and the termination threshold from HUF 3 billion to HUF 6 billion.

Employment support

- From 1 July 2020, **work in addition to retirement was exempt from paying contributions and social security contributions.**

Familiy protection

- From 1 January 2020, **women raising at least four children** will be **exempted from paying PIT** during their entire economically active career.
- From 1 July 2020, the **family contribution benefit** can be deducted from the total amount of social security contributions (18.5%) generated from the four types of contributions.
- As of January 1, 2021, **sales tax on newly built properties decreased** from 27% to 5%. Applicable until the end of 2022, in the case of a building permit until the end of 2026.

Helping the liquidity of businesses, reducing administrative burdens

-For the business tax, the tax advance supplement was abolished in 2020, and from 2021 the tax rate was widely reduced from 2% to 1%.
- **The deadline** for declaring and paying several taxes and contributions has been **extended by** four months (until 30 September 2020).
- In 2020, the NAV **reduced** the **deadline for the payment of reclaimed VAT due to SMEs** (also in 2021).
-In the spring of 2020, on one occasion, businesses could apply for a **tax reduction or a 12-month installment payment or a 6-month surcharge-free deferral** for one type of tax.
- **The deadline for submitting and sending** the 2019 report **has been extended** until 30 September 2020.

action specifically related to COVID-19 epidemic

action taken sooner due to COVID-19 epidemic

Source: State Audit Office [2021b] p.15.

Figure 3 shows that tax and contribution policies have focused mainly on protecting jobs, supporting employment, strengthening priority sectors, protecting families, and helping business liquidity. In connection with the latter, the corporate tax relief instrument system should be highlighted, which provided reliefs to companies with regard to corporate tax and KIVA (a favourable form of taxation for small enterprises).

The measures point out that the changes made to tax and contribution rules in the year before the coronavirus outbreak were consistent with the decisions taken during the outbreak. Supporting families, employment, reducing the burden of living and doing business, whitening the economy, simplifying the tax system, improving transparency, and reducing tax administration burdens continued in the aftermath of the outbreak, and additional measures were taken in line with these (*State Audit Office* [2021b]).

With the introduced tax and contribution policy measures, fiscal policy thus strengthened the resilience of the national economy in 2020 and the first half of 2021, respectively.

In addition to the positive effects on the national economy, conscious and targeted tax exemptions and reductions in the tax base due to the economic downturn caused by the epidemic resulted in a deficit of HUF 1,040.0 billion in the budget in 2020. This loss of tax and contribution revenue was somewhat mitigated by the HUF 47.6 billion fulfilment of the special retail tax and the HUF 55.0 billion special epidemiological tax imposed on credit institutions.

The development of the main direct revenue groups of the budget in 2019-2020 is summarized in Table 1.

Table 1
Development of consumption-related taxes and budget payments of enterprises and households in 2019-2020

Name	2019 fact (HUF billion)	Amended appropriation of the 2020 Act (HUF bn)	2020 fact (HUF billion)	Non-implementation of appropriations in 2020 (%)	Performance in 2020 / Performance in 2019 (%)
Contributions of enterprises	1 414,4	1 689,9	1 610,8	4.7	113.9
Taxes related to consumption	6 140,1	6 636,9	6 267,6	5.6	102.1
Budget contributions of the population	2 698,1	2 898,7	2 827,0	2.5	104.8

Source: own compilation based on the State Audit Office [2021c].

In 2020, the budget payments of enterprises were 4.7% lower, the taxes related to consumption were 5.6% and the budget contributions of the population were 2.5% lower than the original 2020 appropriations.

The development of central government tax revenues in the first half of 2021 is shown in Table 2.

Table 2
Development of consumption-related taxes and budget payments by economic **organizations and households in 2020 and the first half of 2021**

Title of appropriation	2020		2021		
	Amended appropriation (HUF billion)	First half-year performance compared to the appropriation (%)	Amended appropriation (HUF billion)	First half-year performance (HUF billion)	First half performance compared to the appropriation (%)
Contributions of enterprises	1,689.9	46.5	1,726.7	948.3	54.9
Taxes related to consumption	6,636.9	44.1	6,689.4	3 256.1	48.7
Budget contributions of the population	2,898.7	48	3,006.8	1 535.9	51.1

Source: State Audit Office [2021d] p. 15.

According to Table 2, in the first half of 2021, payments by economic entities were 4.9 percentage points higher and payments by households 1.1 percentage points higher than the time-proportionate level, while consumption-related taxes were 1.3 percentage points lower.

Thus, we can say that on the one hand, despite the economic shock caused by the coronavirus epidemic, the tax revenues of the central budget did increase compared to 2019. On the other hand, all revenue tax categories were fulfilled at a higher level in the first half of 2021 than in the same period of 2020. The positive processes were supported by measures to curb the black economy, which were maintained during the crisis, as well as by tax policy instruments to improve tax morale and voluntary compliance by taxpayers.

2.2. Additional expenditures on economic protection and health protection

For dealing with the economic shock, and strengthening the resilience of the national economy, not only conscious tax breaks and tax exemptions have become necessary but also – in order to protect citizens and the economy – inevitable additional expenditures. In 2020, the Government, exercising its emergency-powers, reallocated budgetary resources for economic protection and epidemic control in favour of the Economic Protection Fund established for this purpose, as well as the Epidemic Protection Fund.

Additional economic protection expenditures

The Economic Protection Fund (GVA) was used to cover measures to mitigate the economic downturn. The amount of HUF 1,345.7 billion of the fund consisted of the transfer of HUF 922.6 billion of appropriations from the budget chapters and HUF 423.1 billion of the revenue of the National Employment Fund, which was raised by the fulfilment of the payment obligation of the Ministry of Finance by HUF 20.0 billion. The GVA was an open-from-top appropriation, the use of which in 2020 is summarized in Table 3.

Table 3
The main groups of disbursement from the Economic Protection Fund

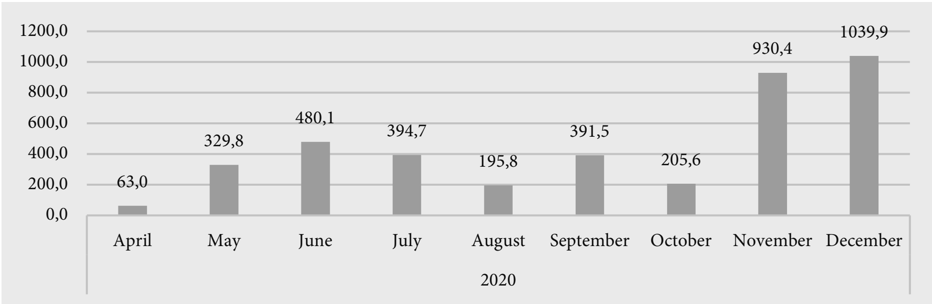
Main groups of disbursement	Fulfilment (HUF bn)	Distribution (%)
Subsidies to increase competitiveness, exports, and economic protection	1,467.40	36.4
Support for tourism developments	346.5	8.6
Support for research and development	136.8	3.4
Support programme to improve security of health care	100	2.5
Transport development, support for priority investments	1,193.00	29.6
Support for other economic protection programmes, employment protection subsidies and other uses	786.9	19.5
Altogether	**4,030.70**	**100**

Source: State Audit Office [2021a] p. 17.

In 2020, HUF 4,030.7 billion was used from the GVA, based on Government decisions, which exceeded the planned amount of HUF 942.6 billion by HUF 3,088.1 billion. Within the framework of the Government's investment-promoting economic policy, 36.4% of the GVA's expenditures were used for competitiveness, export-enhancing and economic protection subsidies. 29.6% of the GVA was used for the development of transport infrastructure, 8.6% for the support of tourism developments, and 19.5% for the financing of other economic protection programmes and job protection subsidies.

Based on the expenditures made from the GVA, it can be concluded that in Hungary, the supply-oriented role of the state has come to the fore in order to restore the economy as soon as possible. Fiscal policy has increased the resilience of the national economy through measures to stimulate economic growth. It is important to emphasize that on 54.0% of the GVA's expenditures in 2020 Government decisions were made in the fourth quarter, thus in the last two months of the year, approx. HUF 2,000 billion worth expenditure was fulfilled. Figure 4 shows the use of GVA in 2020.

Figure 4
Use of the GVA appropriation in 2020



Source: own compilation based on the State Audit Office [2021a].

Figure 4 thus shows that at the end of 2020, a significant surplus of resources flowed into the economy, which could be utilized in the first half of 2021, contributing to the growth, and strengthening the resilience of the economy.

In 2021, the adverse effects of the coronavirus epidemic required the continuation of the government's investment-friendly economic policy launched in 2020, funded by the Economic Restart Fund. With Act XLIV of 2021 amending the Budget Act of 2021, the title of the chapter of the Economic Protection Fund was changed to "Economic Restart Fund" as of 28 May 2021.

In the first half of 2021, HUF 1,546.6 billion of the amended statutory expenditure appropriation of the Economic Restart Fund of 2021 (HUF 2,869.5 billion) was used to strengthen the economy (*State Audit Office* [2021d], *Hungarian State Treasury* [2021]). The use of the fund's appropriations mainly provided financial resources for priority programmes for the protection and relaunching of the economy, for developments, investments, and for measures related to the promotion of employment. In addition, the appropriations of the Economic Restart Fund supported the strengthening of the liquidity of Hungarian enterprises and the protection of families and pensioners (*State Audit Office* [2021d]).

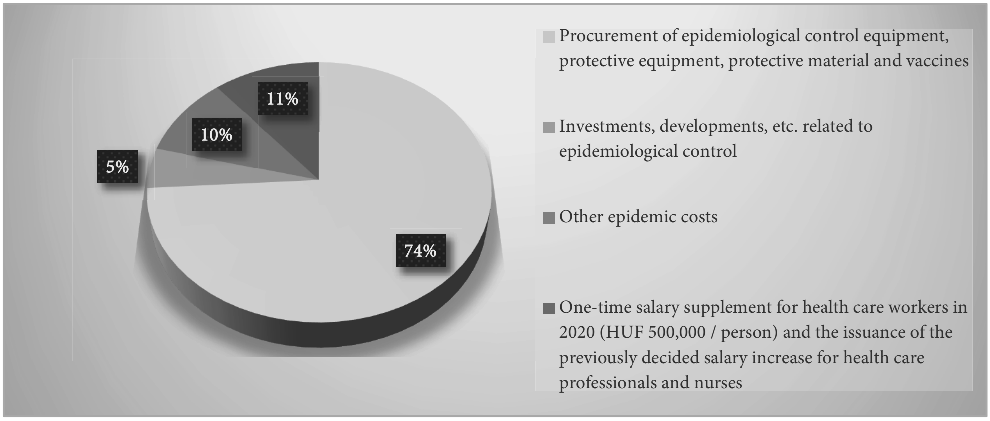
In the last two months of 2020 and in the first half of 2021, i.e., in eight months, fiscal policy supported the national economy with a total of HUF 3,516.9 billion and contributed to the recovery of the economy and the favourable development of labour market processes.

Additional healthcare expenditures

With the outbreak of the coronavirus epidemic, the state has set the protection of human lives as its primary goal. In line with this, in addition to economic protection, the Epidemic Protection Fund (JEVA) was established by Government Decree 92/2020 (IV. 6.) on the different rules of Hungary's central budget for 2020 related to the state of emergency. Of this fund, HUF 1,027.4 billion was used in the distribution shown in Figure 5.

Figure 5

Areas of application of funds from JEVA



Source: State Audit Office [2021c] p. 18.

The main areas of use of JEVA were expenditures on the purchase of equipment for epidemic control, protective equipment, vaccines, related investments, and the one-time salary supplement for healthcare workers in 2020.

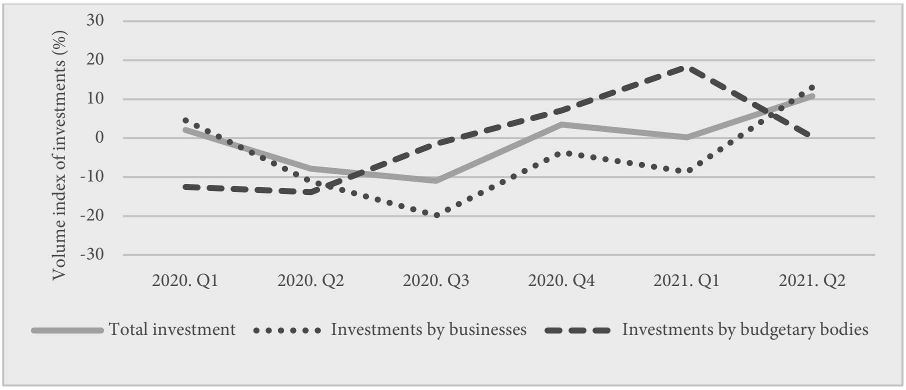
The Budget Act of 2021 contains the resources necessary for the control of the epidemic and the operation of the healthcare system in one fund under the chapter title LXXII Health Insurance and Epidemic Protection Fund (EJEVA). Of EJEVA's original expenditure appropriation for 2021 (HUF 2,944.2 billion), 51.5% of the original appropriation, HUF 1,526.0 billion, was fulfilled in the first half of 2021 (*Hungarian State Treasury* [2021]).

Expenditures spent in JEVA and through EJEVA in the first half of 2021 contributed to creating the conditions for the relaunch of the economy by supporting effective epidemiological control and helping to lift epidemiological restrictions as soon as possible.

2.3. The relationship between investment-friendly economic policy and resilient budget execution

With the HUF 4,030.7 billion investment incentive subsidies received from the GVA in 2020, after the decline in the second quarter of 2020, the investments of budgetary bodies started to increase from the third quarter, and the investments of enterprises started to increase from the fourth quarter. (See Figure 6.)

Figure 6
Development of volume indices of investments in the national economy by sector between Q1 of 2020 and Q2 of 2021 (% change compared to the same period of the previous year)



Source: own compilation, based on by KSH STADAT 3.2.1.5.

In response to the shock caused by the coronavirus epidemic, businesses have sharply reduced their investment activity. This is shown by the data for the second and third quarters of 2020 (the low point was the 19.9% decline in the third quarter of 2020). As a result, the investment rate declined until Q3, but Figure 6 shows that Government investment began to increase as early as Q2. In Q3, they have already grown significantly, with an even larger increase in Q4, which then increased to 18.3% in Q1 2021. The increase in investment in the public sector has been able to offset to some extent the decline in business investment. This shows that in times of crisis, the budget tried to support the economy by targeting and rationally increasing its spending (see the example of the wheel in Figure 2) to protect it from a larger downturn.

It is important to mention that aspects of fiscal balance will already appear in fiscal policy by 2021, but with the expedient and reasonable spending of the public sector, it still intends to ensure the conditions for the relaunch of the economy. However, quarterly data on investment by sector have also fluctuated sharply in previous years.

The Government's investment-promoting economic policy is also well reflected in the data of the 2020 central subsystem. (See Table 4.)

Table 4
Development of expenditures and revenues of the central budget subsystem in 2020

Name	Initial appropriation (HUF billion)			Fulfilment (HUF billion)		
	Expenditures	Revenues	Balance	Expenditures	Revenues	Balance
Domestic operating budget	18,000.1	18,000.1	0,0	21,125.6	20,541.0	-584.6
Domestic accumulation budget	2,110.7	1,929.9	-180.8	5,173.9	692.8	**-4,481.1**
European Union development budget	1,682.2	1,496.0	-186.2	2,032.6	1,787.0	-245.6
Altogether	21,793.0	21,426.0	-367.0	28,332.1	23,020.8	-5,311.3

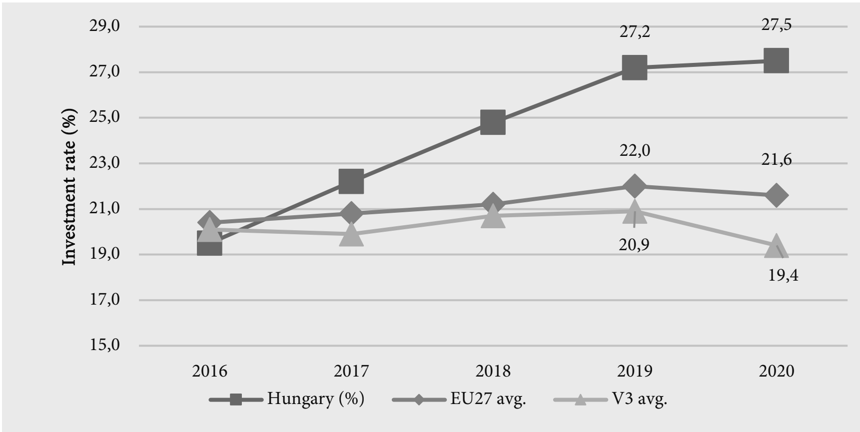
Source: State Audit Office [2021c] p. 19.

Based on the data in Table 4, it can be seen that the year 2020 resulted in a development-centric budget, as the domestic accumulation budget dominated the expenditures of the central subsystem with the expenditure performance of HUF 5,173.9 billion. This is also a good indication that fiscal policy sacrificed the deficit target to strengthen the resilience of the national economy and to protect the health of citizens.

2.4. Macroeconomic effects of the resilient budget in an international context

The results of the domestic fiscal policy in 2020 are also remarkable in an international context, given the favourable development of the investment rate and labour market processes. One of the key instruments of supply-side economic policy in crisis management has been investment stimulus measures.

Figure 7
Development of the investment rate in Hungary and in the average of the EU27 and V3 countries, 2016-2020

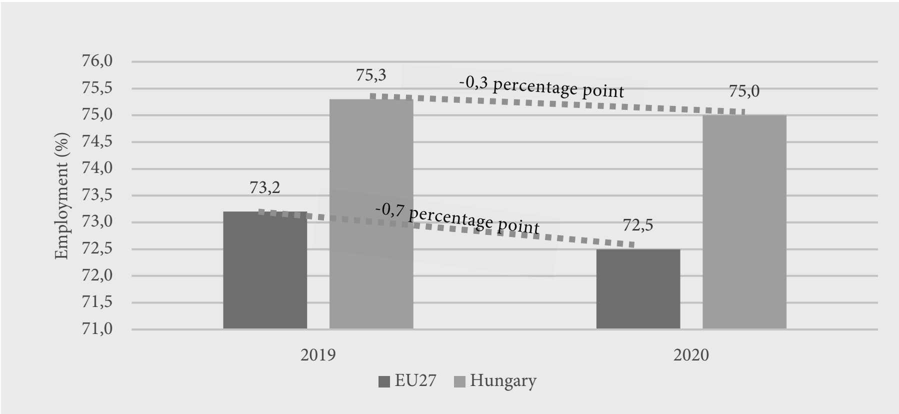


Source: State Audit Office [2021c] p. 10.

The Hungarian investment rate grew very dynamically in the period between 2016 and 2019, almost at the fastest pace in Europe, and unlike most European Union countries, it did not fall even in the year of the crisis. In the difficult economic situation due to the pandemic, the volume of investments in Hungary also declined, but to a lesser extent than the decline in GDP. Thus, in Hungary, the investment rate was able to increase somewhat (from 27.2% to 27.5%) from 2019 to 2020, despite the unfavourable macroeconomic environment.

In an international comparison, the effectiveness of fiscal policy job retention and job creation measures should also be highlighted, including tax breaks and tax exemptions and targeted subsidies for knowledge and technology development. It is noteworthy that the decline in the employment rate of the 15-64 age group in Hungary compared to the 2019 data was more moderate than the EU average. Figure 8 shows that the Hungarian figure decreased by 0.3 percentage points, while the EU average decreased by 0.7 percentage points.

Figure 8
Comparison of domestic employment data for 2019 and 2020 with the EU27 average



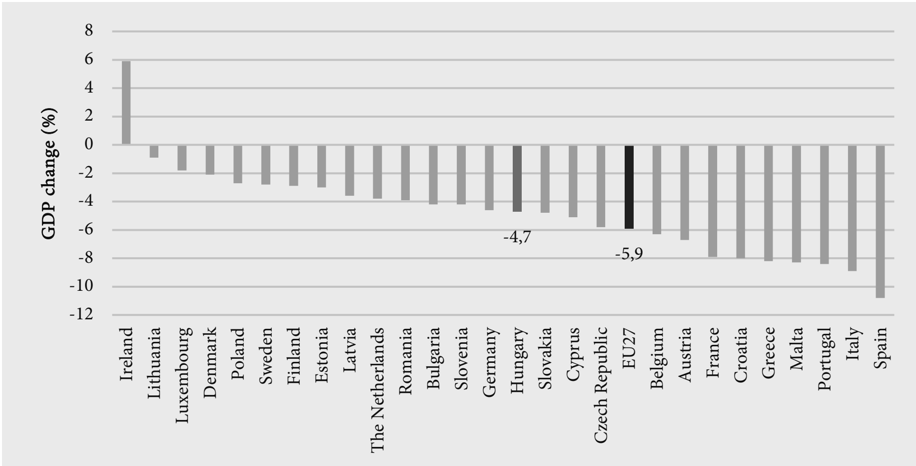
Source: own compilation based on the State Audit Office [2021c].

3. Summary

The outbreak of the coronavirus epidemic in March 2020 had a shock-like negative effect on a Hungarian economy with strong foundations that had been expanding for years. Prior to the outbreak, GDP has risen every year since 2013, the budget deficit as a share of GDP has fallen below the Maastricht 3% deficit target since 2012, while the government debt as a share of GDP has decreased from 80.4% in 2011 to 64.2% in 2019.

The first and second waves of the epidemic caused a strong economic downturn during the year, in consequence of which the GDP of Hungary in 2020 fell by 4.7% in real terms compared to the previous year. This rate is more than 1 percentage point better than the EU average (-5.9%) due to stable fundamentals and government measures taken during the year. (See Figure 9.)

Figure 9
Change in GDP of EU member states in 2020 (previous year = 100.0%)



Source: State Audit Office [2021c] p. 9.

Taking everything in consideration, we can say that during the pandemic, the resilience of budget implementation was reinterpreted. Protecting human lives, curbing the spread of the virus, and strengthening the resilience of the national economy have become the primary objectives of the state, which has required sacrificing fiscal balance goals.

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Dr. Pál Belyó[1]

MACROECONOMIC AND FISCAL SITUATION IN THE FIRST HALF OF 2021

Prolonged recovery, increasing risks

Following a significant downturn last year, the situation in the economy improved in the first half of 2021, and almost all sectors, including the most affected tourism, are experiencing a slow recovery. The industrial performance – vital for our exports – is expanding again. The recovery will require an increasing use of resources, and the improvement of our fiscal processes will be hampered by the need for a restart, while there will be a further expenditure growth because of the parliamentary election due in early 2022. The budget deficit remains high and, following rising inflation, the initial monetary tightening will continue. The restoration of equilibrium this year may be hampered not only by the pace of consumer price inflation but also by the possible further weakening of the forint. The decline in employment after the spring of 2020, the noticeable rise in unemployment and the shrinking income of families can also cause important lifestyle problems.

The epidemic has radically changed previous plans…

In the first quarter of 2021 our gross domestic product increased by 2 percent compared to the previous quarter and decreased by 1.6 percent compared to the first quarter of last year. This year's government plans are changing, and economic policy is being adjusted to the higher forecasts of GDP growth, compared to the 4.3 percent planned earlier for this year. Due to its very low base in 2020, the expansion of gross domestic product can reach a much higher rate – up to 5-7 percent. The optimism of international economic forecasting organizations, who are confident in a faster recovery, is also reflected by the fact that the expected growth of Hungary's gross domestic product in 2021 has been adjusted to close to 5 percent. However, this still lags behind the planned GDP growth underlying several of the Government's measures.

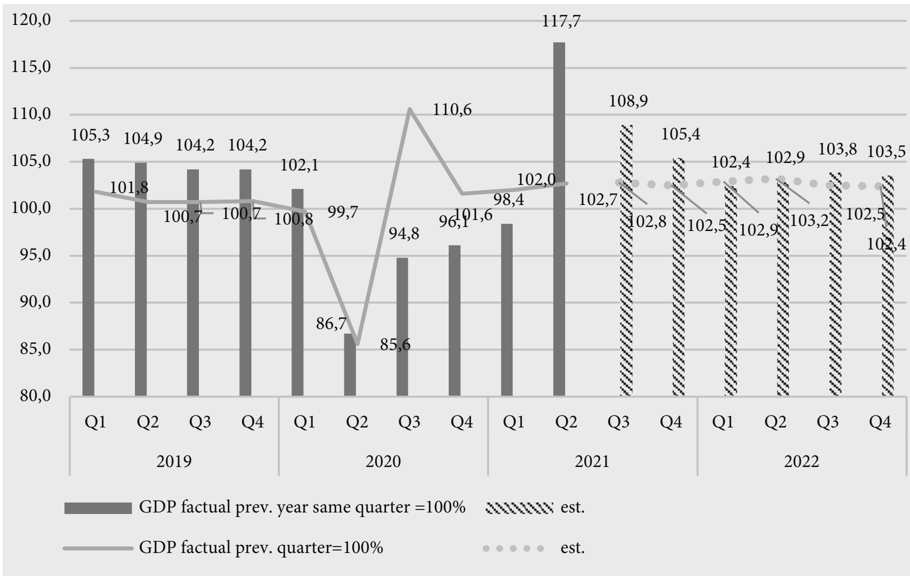
In the second quarter of 2021 the GDP grew by 2.7 percent quarter on quarter. Industry was the main contributor to the growth. According to seasonally and calendar-adjusted and balanced data, the performance of the economy was 17.7 percent higher than in the same quarter of 2020 and 2.2 percent higher than in the second quarter of 2019.

In the first half of 2021 the performance of the economy exceeded the level of the first half of the previous year by 7.2 percent, according to seasonally and calendar-adjusted and

[1] Eco-Vista Economic Services and Consulting Co. Date of submission: 30 August 2021.

balanced data. Growth was significantly supported by the economic protection and recovery measures of the government, which had an overall impact of 8.4 percentage points on economic performance growth in 2021.

Figure 1
Actual and estimated volume changes in GDP, 2019-2022 (compared to the same quarter of the previous year and the previous quarter, %)



Source: Central Statistical Office (CSO), own edition.

In order to fulfil the Government's economic recovery plan and to implement social policy measures supported by the budget, a GDP growth of more than 5.5 percent is required. For the whole year, with the existence and assurance of the current calm processes and the safety of epidemic management, a GDP growth of more than 5.5 percent is a reachable goal that can be easily achieved after last year's economic downturn. However, this could be jeopardized if the fourth (or a further) wave of the epidemic requires the same, or even stricter, or longer, closures and restrictions for the rest of the year. Our economic openness and dependencies on global chains are sensitive to the world economy, for example a shortage of components could stall our automotive production for months.

In the first quarter of 2021 the volume of investments increased by 0.5 percent compared to the previous quarter and by 2.5 percent compared to the same period of the previous year. The volume of construction investments decreased by 0.9 percent quarter on quarter and by 1 percent year on year. Investment in machinery increased by 1.5 percent quarter on quarter and by 7 percent year on year. Developments in manufacturing, which account for a quarter of investment performance, fell by 10.1 percent, with the volume of developments in most sectors declining significantly.

While the general government deficit has risen to 8.1 percent of the GDP in 2020, it is likely to fall to only 7.5 percent this year and even by 2022, the Government plans to run an extremely high deficit of 5.9 percent. The difficulties in the budgetary process are indicated by the fact that the structural deficit of public finances, which includes the impacts of the economic cycle, will increase this year from the 6 percent in 2020 to 6.3 percent, and even a 5.5 percent deficit is expected next year based on the Government's plan. The realized investment rate of 27 percent, the promised tax breaks, pension supplements, and subsidies are likely to lead to higher-than-planned budget deficits.

Helping businesses is essential…

In the first half of 2021, the indicators of corporate management improved significantly compared to the year before. Investments of firms are supported by relatively larger amounts of cheap resources, but the size and structure of future demand are uncertain. Many businesses are not starting their previously planned investment.

In the first half of 2021 industrial production increased by 18.8% compared to the same period of the previous year. The volume of foreign sales, which account for 65% of total sales, increased by 20% and domestic sales by 13.3%. Production increased between 9.5 and 28% in the regions, with the largest increase in Northern Hungary. In June 2021, the volume of industrial production was 22% higher than in June of the previous year. The sub-sectors of the manufacturing industry contributed the most to the expansion. Among them, the production of electrical equipment increased the most, while the production of food, beverages and tobacco products increased the least. Industrial output fell by 0.3% from the previous month. The volume of production exceeded the level of June 2019.

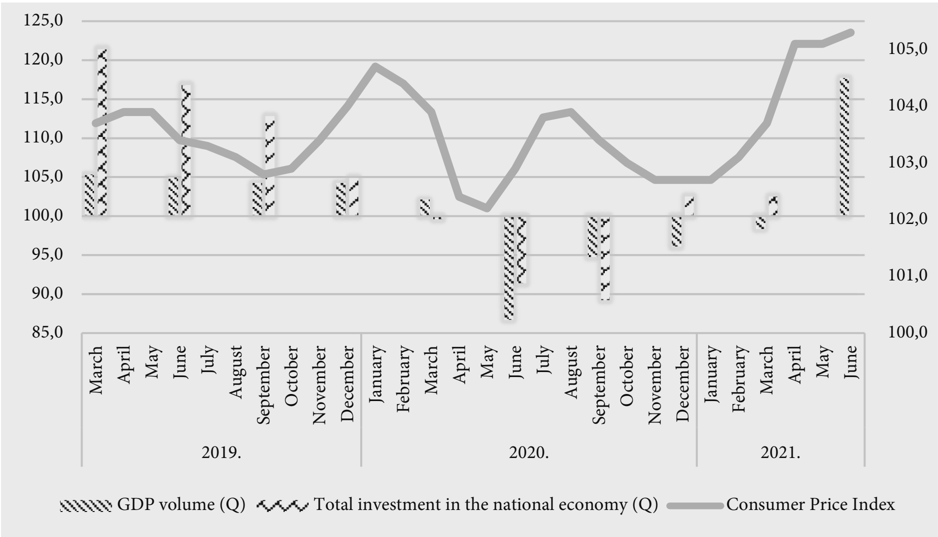
Construction output in the first five months of 2021 increased by 1.3% year on year. In May, production volume was 18.7% higher than the previous year. Construction of buildings was 38.6% higher than the low base in May 2020, while that of other structures was down by 0.8%. Construction output was 2.3% higher than in April.

In the first six months of this year, 48% fewer guest nights were registered in commercial accommodation establishments than in the same period of the previous year. Of the 2.8 million nights, about 2.1 million were spent by domestic guests in commercial accommodations. The total gross sales revenue of accommodation establishments decreased by 48% at current prices and amounted to only HUF 53 billion.

High inflation and significant fiscal expansion…

The measures helping the recovery notwithstanding, macroeconomic financial indicators are not improving, partly due to the problems caused by the economic downturn and indicate a fiscal and monetary situation fraught with uncertainties.

Figure 2
GDP volume, investment and consumer price developments (same period of previous year = 100)



Source: Central Statistical Office of Hungary, own edition.

The current account is expected to slightly deteriorate but Hungary's financing capacity may remain positive due to EU transfers. The significantly increased debt ratio will not deteriorate further; a slow decline is more likely. At the beginning of 2021, the credit rating agencies left the Hungarian rating unchanged. As a result of the tax breaks that help businesses, about HUF 1,600 billion has remained in unpaid instalments for businesses since the spring of 2020. Most of them was used to cover operating costs. Following the expected lifting of the loan repayment moratorium in September, we can expect a deterioration in loan repayment rates, and the quality of the growing loan portfolio will also deteriorate due to the weakening borrowing capacity.

In June, the value of exports reached HUF 3,668 billion (EUR 10,476 million) and that of the imports HUF 3,431 billion (EUR 9,796 million). The value of exports in euros was 2%, and that of imports was 24% higher than in the previous year. The foreign trade balance of products improved by 1.7 million euros. Compared to May, exports increased by 11% and imports by 4.2%. The foreign trade surplus of products was HUF 237 billion (EUR 680 million). 77% of exports and 72% of imports were done with EU27 Member States.

At the end of June, the consolidated general government deficit – cash-flow approach without local governments – was 74.5% of the annual targeted deficit. The deficit of the central budget is HUF 1,705 billion, 70.6% of the annual appropriation.

In the first six months, businesses paid HUF 984 billion in taxes, 26.6% more than in the same period last year. By the end of the sixth month, the population paid HUF 1,536 billion in taxes, 13.1% more than in the same period last year. 13.3% more government revenue was generated from personal income tax, 22% from car tax and 8.5% from other taxes compared to the previous year.

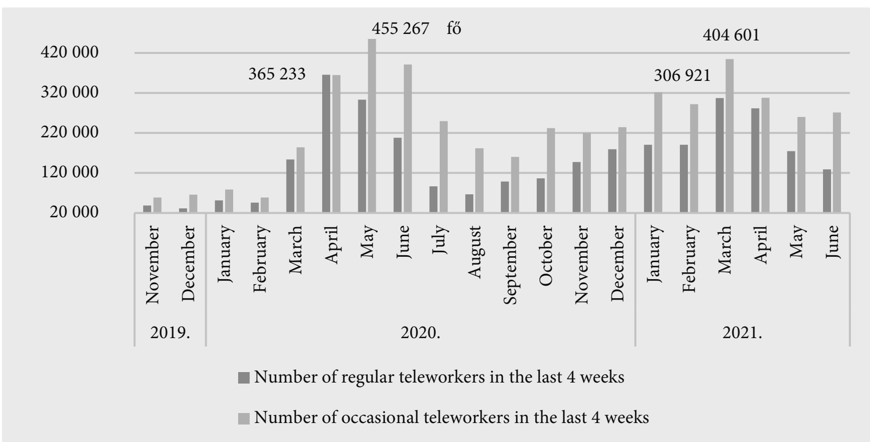
From the beginning of the year, it was clear that the loose monetary policy, with a base rate of 0.6%, would no longer be sustainable in the middle of the year. A possible further weakening of the forint will also cause an increase in interest rates offered during deposit tenders. The Hungarian National Bank (MNB) has also begun the cycle of raising interest rates – with the key interest rate level already reaching 1.5 in mid-August – and will continue to do so until inflation has fallen to around 3%.

In June, the Hungarian inflation rate of 5.3% was the highest among the European Union member states. There has been a significant rise in food prices and consumer goods, as well as consumer prices for services. The price of some basic foods has risen rapidly, and durable consumer goods and cars have become more expensive. An inflation rate above 4% on average and a further weakening of the forint exchange rate are likely in 2021.

Significant differences in the situation of households…

According to a sample population survey conducted by the CSO, the average monthly number of employees aged 15-74 in July 2021 was 4,704,000. In May-July, the number of employees was 4,647,000, which is 62,000 more than in the same period of the previous year. The average number of public employees during the third wave of the pandemic was 87,000, 2.3% more than a year earlier.

Figure 3
Number of teleworkers (persons)

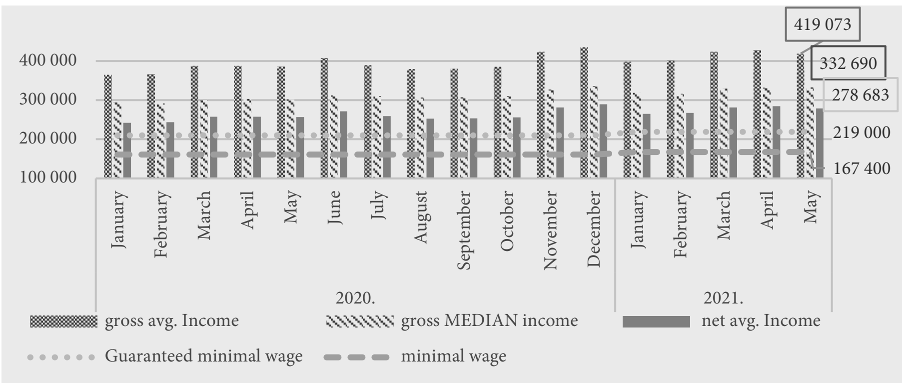


Source: Central Statistical Office of Hungary, own edition.

In May-July 2021, the number of unemployed persons aged 15-74 decreased by 27,000 compared to a year earlier, while the unemployment rate decreased by 0.6 percentage points. Among men, the number of unemployed persons was 103,000, their unemployment rate fell to 4.0%, while the number of unemployed women fell to 94,000 and the unemployment rate to 4.2%. More than one-fifth of all unemployed are young people; their number has fallen to 46,000 and their unemployment rate has fallen to 14.7%. The unemployment rate for the 25-54 age group fell to 3.4% and for the 55-74 age group to 2.9%. The average duration of a job search was 8.7 months, with 33.8% of the unemployed looking for a job for at least a year. However, the number of registered jobseekers decreased to 262 thousand.

The average gross earnings of full-time employees in the national economy averaged HUF 419,073 in May 2021, by 9.4% more than a year earlier. Although the gross median earning of HUF 332,690 is 8.7% higher than a year earlier, it is 21.3% lower than the average earnings.

Figure 4
Earnings of full-time employees (HUF per capita per month)



Source: Central Statistical Office of Hungary, own edition.

Consumption growth will lag behind that of the previous years. The possibility of further dynamic wage increases is questionable. With the end of the epidemic situation, the extra benefits and reliefs given this year are expected to be restored to previous levels. The previously high level of consumer confidence underpinned by the Family Protection Programme will decline due to increasingly tight budgetary resources.

Growth has already been slowed by rising costs in housing construction and maintenance, the high level of housing rents and the fluctuating inflation process. From the spring of 2020, the lending moratorium affected 54% of retail loans and although two-thirds of these were excluded from the rebate from January this year, the final cessation will be a protracted concern for households that remain in the moratorium and the expected increase of the base rate will reduce lending expansion.

At the beginning of 2021, the families marked HUF 470 thousand as the level of their safety reserves. Compared to the data of May 2020, this is by HUF 100,000 more. The largest amount, approx. HUF 500,000 is required by the 40-59 age group, while the lowest is estimated at HUF 277,000 by employees over 60 years of age. In contrast to 48% in May 2020, 44.8% of families now have this amount, and in the capital only 41% of respondents. Uncertainty can also be felt when examining cash flow. Cash holdings are rising sharply. The cash stock is constantly growing, for example to HUF 7,443 billion in May; that is an increase of HUF 51 billion in one month.

A risk-laden, slow, and protracted recovery can be expected…

Our forecast for 2021 and especially for 2022 can be considered pessimistic for all the above reasons. Thus, in addition to the continued epidemic risk, our growth as shown in the figure reflects a much weaker performance than our potential growth would be in the next six quarters, until the end of 2022.

The consequences of the restrictions caused by the coronavirus epidemic are severe according to both businesses and households, and their impact will remain negative even in the long run. Overcoming the economic downturn and resuming general and clear growth is hampered by a number of factors. Processes are unfolding that do not improve the competitiveness. This is indicated by the fact that, according to the corporate sector, the high investment rate stimulated by the budget, the continuation of previously decided investments, or the significant expenditures on the military development programme are not pointing to the right direction. The forced reduction of the extremely high general government deficit and increased public debt is likely to be a major concern in the coming years.

The coordination of fiscal and monetary policies is a sensitive issue. Among the risk factors are the high inflation and high social tensions, e.g., in employment or in the development of incomes.

Table 1
Macroeconomic forecast (Previous year = 100%)

	2019	2020	2021*	2022*
	fact		forecast	
GDP volume	104.9	94.9	105.6	103.5
Agricultural production	100.4	93.3	104.2	104.8
Industrial production	104.1	94.5	108.0	103.8
Construction production	113	90.9	107	111
Retail turnover	110.8	99.8	103.2	104
Tourism	106.5	67.8	101.2	110.5
Information, communication	108.8	106.2	107.2	108.2
Household consumption	104.2	97.4	103.8	104.8
Fixed asset formation	112.2	92.7	106.8	109
Current account and capital account balance (GDP %)	1.4	0.7	-0.2	0.8
Import	107.2	96.1	108.5	106.5
Export	105.8	93.3	109.5	105.5
Gross average income	111	109.7	107.8	108.5
Unemployment	3.3	4.3	4.0	3.8
Consumer price index	103.4	103.3	104.3	103.9
Budget deficit (as % of GDP)	-2.1	-8.1	-7.8	-5.5
Government debt (as % of GDP)	65.5	80.4	80.0	77.1
EUR/HUF exchange rate	325.4	351	355-360	350-355

Source: Central Statistical Office of Hungary.

* Own forecast (August 2021)

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MACROECONOMIC AND PUBLIC FINANCE SITUATION IN THE FIRST HALF OF 2021

The international environment

In the first quarter of 2021, the recession in the European Union was 1.2% due to the economic effects of the coronavirus epidemic; however, in the second quarter the economy expanded by 13.8% year on year. For the first time, a 0.1% recession was registered quarter over quarter, but an increase of 2.1% in the second quarter. The US economy grew by 0.5% in Q1 and by 12.2% in the following quarter, while GDP grew by 6.3% and 6.6% quarter on quarter, respectively. In both economies, household consumption contributed most to the change in GDP.

In the first half of this year, the labour market began to recover in both the US and the European Union. Employment has expanded in both economies but has not reached yet pre-crisis levels. Unemployment also fell in the first half of the year: between December and June, the share of unemployed fell from 6.7 to 5.9% in the US and from 7.4 to 7.1% in the EU.

Neither the Fed nor the ECB changed interest rates during the first half of this year. At the same time, in response to the rapid recovery of the US economy and inflation rising above 5%, the Federal Reserve's forward guidance already referred to interest rate hikes next year, while the ECB projects a persistently loose monetary policy for the time being. Of the regional central banks, only the Czech National Bank responded to rising inflation by raising interest rates.

In the first half of this year, the pound, the Swiss franc, and the yuan appreciated minimally among the world's leading currencies, while the euro and yen weakened slightly against the dollar. Between the beginning and the end of the same period, the world's most important stock markets rose, although accompanied by very strong fluctuations: the DAX rose by 13, the DJI by 14, the FTSE by 7, the Shanghai Composite by 3, the STOXX by 13 and the Nikkei by 6%.

The US inflation rate developed along a rising trajectory in the first half of 2021: the 1.4% price increase in January rose to 5.4% by June; thus, the half-year average inflation was 3.4%. The biggest contributor to the deteriorating June data was the 44.8% increase in energy prices, including fuel.

Inflation in the European Union showed a fundamentally upward trend in the first half of 2021: from 1.2% in January, it reached 2.2% in June; thus, the average for the last half year

[1] Századvég Economic Research Co.t. Date of submission: 30 September 2021.

was 1.8%. The trajectory of inflation varied in the Visegrad countries: it fluctuated in the Czech Republic and Poland, and steadily increased in Slovakia.

According to the European Commission's May forecast, fiscal discipline will not return in the Member States of the European Union. The Commission expects the combined budget deficits of the EU member states to rise by 0.8 percentage points to 8.0% this year, which could fall to 3.8% next year as the epidemic measures expire. As a result, public debt-to-GDP ratio in the European Union could rise by 2.4 percentage points this year to 102.4%, which could fall to just 100.8% next year.

The performance of the Hungarian economy in the first half of 2021

The performance of the Hungarian economy in the first half of 2021 was characterized by a duality. In Q1, the negative cyclical effects of the third wave of the coronavirus epidemic were still being felt and restrictive measures were holding back the economy, but by the second quarter, these effects became only moderate. When the third wave subsided, and restrictions were lifted, the economy restarted in the second quarter. In the first quarter of 2021, the gross domestic product decreased by another 2.1%; however, in the second quarter, it was already 17.9% higher than in the same period of the previous year, according to raw data, while in the first half of the year it was 7.2% higher than a year earlier, according to seasonally and calendar-adjusted data. However, compared to the previous quarter, we saw an increase in both quarters: 2.0% in the first quarter and 2.7% in the second. Household consumption expenditure fell by a further 4.8% in Q1; in the second quarter, however, it had already risen by 10.6% year on year. The volume of investments increased only by 0.2% in the first quarter, but by 10.8% in the second. The investment performance of enterprises decreased by 8.7% in the first quarter of 2021, while in the second quarter of 2021 there was an increase of 10.8%. Concerning the exceptionally good second quarter data, it is important to emphasize the extremely low base of the same period of the previous year, caused by the introduction of severe restrictive measures due to the coronavirus epidemic and the resulting negative cyclical effects.

The volume of exports increased by 3.3% in the first quarter and by 33.0% in the second one, while the volume of imports increased by 1.1% in Q1 and by 23.4% in Q2. The foreign trade balance thus contributed 2.0 percentage points to GDP growth in the first quarter and 6.5 percentage points in the second. On the production side, the added value of services declined further in the first quarter (-3.5%) but increased significantly in the second quarter (12.4%). Thus, in the first quarter, services still moderated GDP growth the most, by 2.1 percentage points, but in the second quarter, the contribution of services to growth was the second largest, at 7.0 percentage points.

Added value in construction fell by a further 2.4% in the first quarter, before rising by 18.4% in the second. The contribution of construction to gross domestic product was still negative in the first quarter (-0.1 percentage points) but was already +0.9 percentage points in the second quarter. Within the construction industry, the production volume of other structures increased by 1.1% and that of buildings by 11.8% in the first half of 2021. The added value of industry grew by 3.4% year on year in the first quarter and by 36.9% year on year in the second quarter, contributing 0.7 and 7.3 percentage points to GDP growth, respectively.

Despite the restrictions in force in the first half of the year, the number of employees increased, by 10 thousand to 4.626 million in the second quarter, and by 61 thousand on an annual basis, but its level is still lower than before the crisis. Activity in the Hungarian economy increased further, so the activity rate (65.5%) was already higher than before the crisis (64.9%). As a result of these two effects, the number of unemployed persons increased minimally, to 198,000 in the first half of the year (by 2,000), while their share stagnated at 4.1%. This represents a decrease of 0.4 percentage points in one year. According to institutional statistics, by the second quarter the number of employees has already reached the level of the fourth quarter of 2019, mainly due to the continuous expansion of the private sector. The number of public employees stagnated below 90,000 in the first half of this year, and there was no need of the increased use of the Start work programmes due to rising employment.

The average gross earnings increased by 8.3% in the first half of the year to HUF 428 thousand. Wage developments in certain areas of the public sector played the main role in this, but a 4% increase in the minimum wage and the guaranteed minimum wage also contributed to this. Net average earnings approached HUF 285 thousand in the first half of the year; including tax benefits, they exceeded HUF 293 thousand. Following the exit of consumer-price inflation from the target band of the central bank, real wages have risen at their slowest pace since the beginning of 2015, by 4.0%.

In the first half of 2021, the average inflation rate was 4.2%, exceeding the 3% medium-term target set by the Central Bank of Hungary and even fell outside the 2-4% target range. For 2020 as a whole, the rate of money deterioration was also 3.3%, which has gradually increased since the beginning of 2021: it was still 2.7% in January but reached 3.1% in February and 3.7% in March. Thereafter, in April and May the inflation rate was 5.1%, falling outside the tolerance band, before rising further to 5.3% in June. The sharp rise in fuel prices also contributed to inflation significantly. This is due to rising oil prices, which have been severely affected by soaring global demand due to the resumption of the economies, as well as OPEC +'s output reduction agreement since April last year. Thus, overall, due to the surge in demand and the slower expansion of supply as well as the base effect, the price of vehicle fuels increased by an average of 19.7% in Hungary in the first half of the year, compared to a year earlier.

The Monetary Council of the Central Bank of Hungary raised its key interest rate by 30 basis points to 0.9% at its June rate-setting meeting. In June, the central bank did not adjust further the lower and upper margins of interbank market forint transactions, but left them unchanged (at -0.05 and 1.85%, respectively). The central bank also raised the interest rate on one-week central bank deposits by 15 basis points to 0.9% in June, which is the same as the base interest rate.

Due to the economic consequences of the coronavirus epidemic (temporarily lower employment and loss of income for companies), in March 2020 the Government decided to suspend the repayment of retail loans until the end of 2020, which increased the liquidity of households and companies by HUF 2,000 billion. This deadline was later extended to 30 September 2021. The Government took the decision to resolve the liquidity shock affecting the population in agreement with the MNB.

In the first half of 2021, first at the pre-announced date, on February 12, S&P and Fitch, and then on March 26, Moody's had the opportunity to change the rating of Hungary's government debt. All three major international credit rating agencies left the rating of Hungarian public debt unchanged. In the first half of 2021, the rating of Hungarian government debt at the end of June is as follows: Moody's has a positive outlook of Baa3; S&P has a stable outlook, while Fitch has a BBB stable outlook. Thus, the risk rating of Hungarian government securities in the former is at the lowest level of the category proposed for investment, while for the latter two major international credit rating agencies it is one category higher.

The foreign exchange ratio of Hungarian government debt decreased from 19.95% at the end of December 2020 to 17.67% by the end of June 2021. This ratio corresponds to the 10-20% band specification set out in the 2021 financing plan. The goal is to keep the foreign exchange ratio in this band (with a lower foreign exchange rate and lower exchange rate risk), which the Government Debt Management Agency has typically achieved by renewing foreign exchange maturities from the forint market.

The exchange rate of the forint strengthened by 3.4% against the euro in the last six months, which can be explained mainly by the easing of the third phase of the epidemic and the lifting of restrictions and closures but the fact that the Hungarian economy was the first among the restarting economies undoubtedly played a significant role as well. In addition, the central bank tightened its monetary conditions, raised interest rates, and forecasted a cycle of interest rate hikes, i.e., further tightening, in order to bring inflation back into the tolerance band in the first half of 2022. Regional exchange rates also strengthened, but to a lesser extent: the Czech koruna strengthened by 0.4% and the Polish zloty by 1.8% against the euro.

After the downturn in 2020 caused by the coronavirus epidemic, the economy is expected to expand substantially in 2021. Overall, GDP reached pre-crisis levels in the second quarter of 2021 (although this is of course not true for all sectors). The economy has more or less learned how to adapt to the epidemic and constraints in recent times; this is shown by the fact that the economic performance of the second quarter of this year, despite the third wave, was significantly higher than a year earlier. At the same time, possible further waves of epidemics could once again put sectors already in difficulty in a more difficult position, and some businesses would no longer survive. However, in our estimation, we did not anticipate severe restrictions similar to the previous ones, given the vaccination coverage of a significant portion of the population.

What can we expect in 2021-22?

Based on the restart of the economy and data from the first two quarters, economic growth could reach 7.8% this year and 5.5% next year. Of course, there are still several risks associated with this prediction: new waves or new mutations of the coronavirus and possible restrictions associated with them; chip and raw material shortages affecting industry; and transportation difficulties.

After declining 2.5% last year, household consumption expenditure could expand by 5.2% this year and 5.3% next year. In addition to the low base period value, the expansion of consumption is helped by the easing of epidemiological restrictions and the improving labour market situation, however, it is curbed by the caution of households.

In 2020 the volume of investment also declined in the wake of the epidemic: many businesses postponed their developments due to the precarious situation. But state and local government investment has also declined. The rate of decline in 2020 was 7.3%. This could be followed by an increase of 9.9% in 2021 and 5.4% in 2022. In elaborating the estimate, we took into account that companies started their previously deferred investments as the virus situation and the restrictions eased. The increase in investment is also helped by cheap financing and joint borrowing by the European Union.

2020 also brought a significant decline in foreign trade – supply chains were disrupted during the first wave and demand also became uncertain, while international tourism suffered a permanent decline. Accordingly, this year's growth will not evenly affect foreign trade in goods and services – the recovery is more typical in the case of goods; the volume of services is still lower than before the pandemic, mainly due to the decline in transport services and tourism. We estimate that the volume growth of exports may be 11.9% this year and 6.6% next year, while the growth of imports may be 9.0% and 4.9%, respectively. This therefore means that net exports can make a positive contribution to economic growth in both years.

According to our forecast, the number of employees may increase by 29,000 this year to 4.632 million but it will still fall short of its 2019 level. The expansion of the labour market may continue next year but, due to the negative demographic processes, the increase in supply and activity will be an increasingly strong constraint. Unemployment may fall as a result; the share of the unemployed persons could be 4.0% this year, which could fall to 3.6% in 2022. The structural shortage in the labour market may intensify again, but the employment opportunities of those disadvantaged in the labour market may improve. We forecast that average gross earnings could grow by 8.4% this year and by 10.6% next year. At the same time, next year's expansion may be significantly affected by the decision to increase the minimum wage, the minimum wage level potentially increasing to HUF 200,000 may also cause wage pressure in the higher wage categories. Due to high inflation, real wages could rise by only 3.4% this year and 6.4% next year.

Consumer price inflation (exceeding 5% in June) was above the central bank target, and even outside the target range in the recent period. On an annual basis, the rate of money deterioration could be 4.7% this year and 3.8% next year. Raising excise duties on tobacco products, rising fuel prices (to which the low base also contributes), rising food prices and price increases in constrained sectors play a significant role in above-the-target inflation, but are also supported by higher than before external inflation. In 2022, inflation will be driven upwards by high domestic demand, while the run-off of some individual items (base effect on fuel and tobacco prices) will curb it, and the tightening of monetary policy may have an impact next year.

In order to achieve the inflation target, monetary policy was tightened in several steps in recent months, and we expect further measures to curb inflation, with the base rate at 2.1% at the end of 2021 and 2.4% at the end of 2022. At the same time, monetary decisions may be influenced significantly by the data received in the meantime and the processes that determine them. The central bank is expected to phase out unconventional measures previously introduced: the Funding for Growth Scheme has already been terminated and the volume of the government securities purchase programme started to be decreased.

Between January and June 2021, the central subsystem of general government accumulated a deficit of HUF 1,704.5 billion. As a result of the rapid restart of the economy and the recovery of employment, the payments of economic units, consumption-related tax revenues and the payments of households may also exceed their implementation in the amended appropriation. On the expenditure side, we forecast lower-than-expected performance for several items, while advances to the programmes included in the EU's RRF Plan, as well as rising pension payments due to accelerating inflation and dynamic economic growth, will increase treasury expenditures. Overall, we expect a deficit of 7.2% of GDP, 0.3 percentage points lower than the 7.5% foreseen in the amended budget for this year. Gross government debt could thus decline from 80.4% of GDP to 77.2%.

According to our forecast, economic growth will continue next year, the rate of which will further exceed the value included in the 2022 bill. Based on the economic policy aimed at "restarting the economy and life", economic policy measures affecting taxes and the trends observed in recent years, we expect a lower-than-expected payments from businesses and households, while higher-than-expected consumption-related taxes. On the expenditure side, the Government created a HUF 233.0 billion reserve to mitigate the negative effects of unexpected economic and social developments. In the case of the reserves built into the budget, including the special reserve and the investment preparation fund, we expect a total saving of HUF 220.4 billion. We expect savings in the case of consumer price subsidies, housing subsidies, redeemed government guarantees and the Start work programme, while the advance payment of the RRF Plan may result in additional expenditure of HUF 344.7 billion for the state treasury. Regarding pension expenditures, we expect an additional expense of HUF 32.3 billion due to the divergence of forecasts, while HUF 35.5 billion is expected for the payment of the pension premium. According to our forecast, based on currently available information, the general government deficit could reach 5.4% of GDP in 2022, which is 0.5 percentage points better than Government expectations. According to our projection, public debt will be 73.6% of GDP next year.

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THE RESUMPTION OF THE HUNGARIAN ECONOMY AFTER A YEAR AND A HALF OF PANDEMIC – WITH NEW RISKS

Our present research is based on our macroeconomic and budgetary analysis prepared in the spring of 2021 (Macroeconomic, public finance situation and outlook for 2021-2023), based on a similar methodology, taking into account the data on the world economy and the Hungarian economy up to autumn 2021, as well as international forecasts. As for the Government's intentions for the period under analysis (2021-2023) and the assumed room for manoeuvre in economic policy, we relied on our own expert estimates; for the calculation of the baseline presented here, we used the Hungarian Convergence Programme published in spring 2021 and the 2022 budget plan adopted during the year as a starting point, knowing of course, that significant fiscal and monetary policy changes took place during the year and that circumstances can change very quickly. The baseline presented here is therefore close to the model calculation based on the assumption of 'no policy change', because it only quantifies the effects of decisions already taken and changes that are likely to occur but does not include the consequences of highly uncertain factors.

The present analysis differs from the macroeconomic trajectory calculated in the spring of 2021 in several respects, as in the meantime very significant changes have started in important fields. These can be divided into three groups of factors. The first is the non-economic framework, including the evolution of the pandemic, vaccination programmes and other epidemiological measures at national and global levels, as well as political, security, trade policy relations. The second group of factors, which depend in many ways on the above, is the development of economic and financial conditions in the world; in particular the intensification of inflationary processes, changes in interest rates and exchange rates, and changes in public and private debt. Both groups of factors, which can be considered external, give rise to risks that are very difficult to calibrate but which, if ignored, would greatly weaken the predictive power of our present model calculation. The third group of factors is related to the domestic political cycle: due to the general election in the second quarter of 2022, the uncertainties surrounding economic policy, especially in terms of the budget and the expectations of economic agents, are greater than usual at the time of closing our work.

Of course, the mentioned uncertainties existed in the previous stage of our analytical work in 2021, i.e., in the spring of the year, yet we did not make forecasts in several versions, rather, we tried to take into account the predictable consequences of the development of the main groups of factors, to correct the development trajectory calculated on the basis of previous

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trends and previous factual data. By the autumn of 2021, the uncertainties in the external environment and in Hungarian domestic political conditions had increased, and new factors had also appeared; the present baseline was prepared by estimating these effects. Calibrating the effects of a wide variety of new factors is an extremely difficult task, so we did not attempt to calculate consistent model variations when reviewing the spring model results. Instead of elaborating on these, below we indicate the estimated impact and approximate extent of the risks and changes in direction perceived at the time of closing the work.

Thus, the basic version here is not the most probable trajectory for Hungary, but the macroeconomic picture to which we consider the official intentions of the Government as a starting point, and to which recent changes resulting from new external and internal circumstances and the behaviour of major "stakeholders" influencing economic policy can be measured.

During 2020 we have seen an unprecedented decline in GDP in the European Union. As a result of the first wave of the pandemic, the EU's economic performance decreased by 13.8% in the second quarter; while in southern Europe, the decline was typically even greater. The annual performance already shows the reorganization process, which was also supported by the different responses to the second wave. An important circumstance in the interpretation of the Hungarian data is that the epidemic reached Hungary with a few weeks' delay compared to the case of Southern Europe, Belgium and the United Kingdom and – as it turned out – with a lower intensity than at the beginning. In Hungary, the 2% increase in Q1 was followed by a historic decrease of 13.4%, which was followed by a decline of 4.8% and 4.1%, respectively, compared to the same period of the previous year. The crisis has affected individual sectors and economic actors asymmetrically. The large decline in services, especially tourism, was compensated by the fact that in industry, including manufacturing, recovery processes started relatively quickly in the third quarter. Overall, domestic economic performance declined by 5% in 2020.

The downturn in the domestic economy remained more modest than previously estimated throughout the year, and the Government increased or centralized a number of tax items, resulting in relatively favourable budget revenues. The record deficit of more than 8% of GDP can be explained mainly by the jump in spending, thanks to the legal possibility that, under the circumstances, the EU has suspended its rules on member states' budget deficits.

The cluster analysis showed that the extent of domestic macroeconomic measures in 2020 differed from those of the countries that choose or are forced to pursue a strong crisis management path, rather follow a similar pattern of other countries in the region. An analysis of expenditure, which is greatly hampered by unclear documentation of the reasons, recipients, and composition of public measures, shows that the increase served only a small part in the fight against the epidemic and differed significantly in structure from the fiscal stimulus in EU member states. Relatively less went to direct support due to loss of income, but significant sums went to large public projects not directly related to crisis management and to support investment by large companies.

To forecast the economic trajectory after 2020, it would be important to know the short- and medium-term impact of this large-scale public spending on the supply side. However, in the absence of detailed data, we cannot provide a meaningful estimate of how the massive capital transfer at the end of 2020 will affect the supply-side and subsequent growth capacity, and whether beneficiaries will be able to use the grants effectively. At the same time, one-off measures are favourable in terms of the chances of fiscal adjustment, leaving significant room for government manoeuvre to restore fiscal balance at a later stage.

The character of year 2021 has become radically different: the Hungarian economy has also entered a growth phase but, at the same time, the increase in price pressures and the increase in social demands for budgetary resources have been noticeable since the beginning of the year. Sensing the threat of inflation and debt growth, we concluded in the summary of our spring 2021 analysis that further growth in the debt stock should be avoided, which jumped in 2020 and swelled further in the first half of 2021, and a reduction would be needed as early as 2021, but in 2022 the latest. Over time, MNB also issued such a recommendation, citing similar arguments and then using its own toolbox with several smaller interest rate increases.

It should be noted, however, that MNB continued its corporate bond programme, weakening both the macro-demand effects of its interest rate policy measures and the credibility of its determination to change its monetary policy stance. Such reasons also contributed to the persistent and significant devaluation of the Hungarian currency, in addition to external monetary changes: from the pre-epidemic value of EUR/HUF 330 to 355-360 in the second half of 2021, with further inflationary effects.

At the same time, MNB's turnaround in interest rate policy will have an impact on economic conditions and the budget, even if it came too late in the light of the inflation trend that has been developing since 2016. For 2021, the impact on purchased consumption is moderate and negative in terms of the level of household indebtedness and the ratio of fixed-rate loans. The change in the direction of monetary policy also raises government interest expenditure somewhat but is pushed up even more by the increase in government debt and the rise in international and domestic interest rates (yields) in the period under review.

The character of year 2021 was significantly altered by the change in the epidemic situation. For the processes of 2021-2023, the development of the epidemic is still a significant economic risk, but we do not expect a nationwide shut down or the expensive 'panic procurement' of public assets seen in 2020. Unfortunately, with a medium vaccination rate at European level, further social and economic damage cannot be ruled out; however, in our analysis we do not present alternative epidemic trajectories or the macroeconomic trajectory variants based on them. Our present analysis is based on epidemiological processes observed at the time of the preparation of this paper.

The spring 2021 review was complemented mainly by an analysis of economic and political risks. GDP volume will reach pre-crisis levels in 2021, and analysts are likely to see a 7 percent growth rate during the year (6.5 percent growth in our calculations). The recovery momentum following the deepened base cannot be projected in the following years, but the forecasts are very scattered, as both the factors strengthening and weakening the economic growth of Hungary in the forecast period are affected. In the short run (2021-2022), economic growth will be stimulated by a general government deficit well above the previously projected level, which could lead to significant nominal GDP growth in addition to the previously indicated inflation, with overall positive budgetary consequences. Among the drivers of volume growth, all forecast options take into account EU funds, both financial instruments for economic recovery (grants and favourable loans) and transfers from the common budget. However, in terms of rates, timing and related economic policy conditions, there are greater risks now than at the time of our spring 2021 calculations.

Thanks to the intensive crisis management of the economies that account for the majority of our exports, the growth rate of our exports of products and services may also exceed the dynamics of the GDP: we can expect a slight improvement in the current account. In the first half of 2021, foreign trade turnover reached a significant surplus (3.7 billion euros) despite a noticeable deterioration in the terms of trade but, from the middle of the year, that surplus turned into a deficit, mainly due to weaker industrial performance, including the automotive industry. At the same time, there has been a continuous improvement in the foreign trade of services: in the second quarter, the CSO measured an 18% increase on the export side, with a slight decline in imports. In the medium term, we expect that the crisis management of our main foreign trade partners will be successful, the pandemic is expected to subside by early 2022 and the semiconductor deficit in the automotive industry, which has a significant weight in our exports, will be significantly alleviated thus the current account surplus should be able to grow steadily, albeit to a small extent. At the same time, it can be expected that the significant outflow of income and the import demand for investments related to the recovery of the economy may significantly worsen the balance.

Economic and budgetary developments are significantly affected by labour market developments; various structural changes have been initiated in this respect. In March 2020, the introduction of immediate restrictions threatened with a loss of a lot of workplaces. Significant measures have been taken in European countries to protect jobs, similar to those introduced domestically. In 2021, as a result of vaccination, the epidemic eased in the summer of the year and the recovery also began in the sectors hardest hit by the crisis, which also improved temporarily – although less than previously expected – the deteriorating labour market indicators. The unemployment rate is around 4% in 2021 and is expected to remain good for the next two years. At the same time, economic development is hampered by a shortage of skilled labour in a number of key sectors: growth-ready companies were forced to raise wages in the recovery phase, triggering (not unrelated to the upcoming elections) a very significant increase in the minimum wage at the end of 2021. It is doubtful how less productive and/or more vulnerable businesses will be able to meet wage increase requirements, and societal pressures are a risk factor for 2022 that is difficult to assess.

However, from a budgetary point of, the fact that earnings have proven to be particularly crisis-proof is a positive factor, and in 2020 the average increase of around 10% per annum was maintained. The increase in total wages was more modest, given the decline in the number of employees. Budget revenues from payroll taxes were further eroded by the Government's tax and contribution cuts in response to the crisis. Despite all this, there has been a slight increase in household payments, and we expect this moderate expansion to persist throughout the outlook. In the case of corporate tax, a significant decline could be expected by 2020, but instead there was a significant increase. In addition, the reintroduced special taxes further increased the total payments by economic entities, which increased by 14% last year. A similar trend is not expected between 2021 and 2023, and even a nominal decrease may occur with the abolition of special taxes this year, and we expect moderate growth from 2022 onwards.

As part of an expansionary pre-election income policy, the minimum wage will increase by 20% in early 2022. This may be justified by the relative lag of the minimum wage from the average and median wages: according to OECD data, only Latvia has a similar lag among the European Union member states. At the same time, the productivity growth rate has been much lower than wage dynamics in recent years, which also means that a drastic increase in the minimum wage could increase inflationary risks through corporate costs.

A significant increase in the minimum wage could have a distinctly beneficial effect on the revenue side of the budget. On the one hand, the idea that a higher minimum wage will have a whitening effect on the labour market, and taxes and contributions paid after a higher amount may increase revenues. On the other hand, a possible rise in inflation will normally lead to higher nominal GDP, which will also lead to rising general government revenues. Expenditure on the minimum wage may also increase budget expenditures, mainly through rising public sector wages and higher public procurement prices, but this is expected to lag behind the revenue side effects so that in the end the measure could improve the general government balance.

The transparency of the budget was greatly impaired by the fact that the bulk of the expenditure surplus appeared in the line "Budgetary bodies and chapter managed appropriations". Last year, this item approached 60% of the total expenditure of the central budget, which makes it very difficult to draw economic conclusions, as we know little about the distribution of this generous amount of HUF 12,000 billion. We expect the rate of this appropriation to decrease from 2021 onwards as one-off items run out but in general, we expect the extremely loose fiscal policy to be maintained this year. We see no sign that there is a real government intention to change this, and the EU regulatory framework will allow for extreme fiscal expansion surely this year, but for next year as well. The cash-flow deficit may be about HUF 400 billion higher than the planned HUF 3,300 billion, and we are also more pessimistic than the Government forecast in the case of the ESA bridge. In all, this year's ESA deficit could exceed HUF 3,900 billion, which corresponds to 7.4% of expected GDP. Only modest financial austerity is expected to return to the EU next year, to which Hungary will also have to adapt. Thus, the deficit ratio accounted for in the EU may decrease to 5.9 percent by 2022, and then – due to the increasing pressure from the EU – decrease further in 2023, to around the 3% Maastricht criteria.

The multi-annual declining trend in the government debt ratio was broken in 2020, and the GDP ratio has even risen by almost 14 percentage points. According to our calculations, only minimal correction may occur in 2021, with the structural deficit lingering below 2020 levels. We draw attention to the fact that the budgetary path planned for 2021 will result in a structural deficit significantly higher than in the 2020 crisis year. Given the policy cycle, we expect a substantial improvement in the indicator only from 2023, assuming a lower-than-expected budget deficit coupled with substantial economic growth. Ultimately, therefore, we expect the recession caused by the epidemic to be followed by gradual consolidation, but the general government deficit will go down only slowly. During the calculation of government debt, we did not take into account such "creative" means of improving the debt ratio (timed repurchases of government securities, targeted strengthening of the forint exchange rate) that do not violate the Stability Act, but at the same time improve the year-end ratio.

For this trajectory (which, we cannot stress enough, is the "base-line scenario") the following main risk factor analysis was performed during the forecast period (excluding serious international conflicts or possible breaks in the world trade system and other unpredictable political, non-economic risk factors):

- developments in international financial relations, interest-rate and exchange-rate movements,
- changes in international production and trade processes, global production chains in particular,
- the process of accessing European Union funds, the evolution of rescue measures at EU level, and
- the development of demand and supply conditions and the behaviour and expectations of economic actors.

In the present paper we assumed that, from the second half of 2021 until the end of the period under review, economic migration processes will return to pre-Covid levels; this applies both to Hungarian employees working abroad and to non-residents employed in the Hungarian economy. At the same time, it should also be mentioned that the international migration movements that have been declining during the pandemic, including those fleeing the risk areas, will certainly intensify again, along with various political tensions.

We expect a significant improvement in the coronavirus situation and, as a consequence, the international economic environment is beginning to return to normal despite a wide range of political and social risk factors in the developed world. Here, however, we need to be aware that the many consequences of normalization include rising international interest rates and rising inflation rates: in the case of inflationary processes, the period of crisis left behind is exceptional. As the extraordinary times during the pandemic pass, we must also be prepared for the level of accumulated public and private debt to be increasingly criticized by money markets. Consequently, the assessment of budgetary positions from an economic policy perspective should lead to a tighter global outlook for measures in the post-crisis period. Hungarian economic policy cannot abstract from this either, regardless of when and according to what internal rules the European Council restores the scope of the Stability and Growth Pact and other rule-setting agreements.

So far, interest rates have not started to rise sharply in Europe, and the modest increase in spring 2021 can be considered a legitimate correction. At the same time, it does not follow from the interest rates of the United States, the euro area, Japan, and other high-risk international players that the Hungarian debt service will not become appreciably more expensive during the continuous revaluation of government securities. In the present analysis we assume the current international credit rating of the Hungarian state (BBB); however, the risks will not point downwards only if the funds from the EU crisis management packages start to flow to Hungary in the expected time and in the originally planned order of magnitude.

The change in the geographical location of global value chains in principle opens up new opportunities for the Central and Eastern European region. Among the new sites, the chances are often located on the eastern edge of the EU, so the chances of the Hungarian economy may also improve. But at the time of accelerating changes in production organization and process optimization, the already established supplier positions may also weaken. The settlement of high-value, critical production in Hungary from the Western European region – with or without Hungarian budget support – is expected if the skilled workforce is available and the general economic and social climate is considered appropriate by the partners.

The EUR 7.2 billion envelope of the Recovery and Resilience Facility (RRF) is very important for the development trajectory of the Hungarian economy, as is the roughly EUR 8 billion that can still be used from the 2014–2020 framework of cohesion policy programmes as well as the EUR 9.6 billion credit line of the RRF. Together, this is a sum that – if used or used even efficiently – would allow the Hungarian economy to return to the growth trend that was interrupted at the end of 2019. In our baseline scenario, our calculation of potential growth implicitly includes a steady inflow of the above EU funds.

Obviously, a high-risk factor in this regard is the pace of use (through its effect of increasing aggregate demand and stabilizing and strengthening macroeconomic conditions) and the efficiency of use. For the time being, the question is whether the Hungarian government intends to use the entire available resource at all, i.e., whether it accepts the conditions of use, which relate partly to the purposes and partly to the transparency of use. If external funds are successfully drawn and properly absorbed, the Hungarian economy is likely to expand beyond the long-term trend in 2022 and 2023, with a positive output gap (and thus persistently high inflation), as part of an extended recovery cycle.

At the same time, this trajectory presupposes a favourable coexistence of external financial, political, and commercial risk factors. The spectacular escalation of political conflicts with the EU institutions and the governments of its key member states is a risk that cannot be quantified but can very quickly lead to funding problems. This risk element, as well as the impact of fractures in international relations, possible climatic extremes, major shutdowns affecting global ICT systems and other extreme changes, are not discussed in this analysis, and are not attempted to be calibrated.

Table 1.
Calculated baseline ('no policy change') with upward/downward risks

	2021	2022	2023
GDP (volume, %)	6.5% +	5.5% +	3.9% -
Change in actual household consumption (volume, %)	3.9% +	4.2% +	3.3% -
Change in Community consumption (volume, %)	3.5%	1.0%	3.2%
Change in gross fixed capital formation (volume, %)	7.1% +	6.2% +	5.2% -
Change in exports (volume, %)	11.2%	6.5%	4.8%
Change in imports (volume, %)	9.0%	5.5%	4.2%
Unemployment rate (%)	4.0%	3.8%	3.8%
CPI (%)	4.6% ++	4.2% +	3.5% +
Current account balance (EUR M)	104.9 -	768.2 -	1064.8 -
General government ESA balance (% of GDP)	-7.4% ++	-5.9% ++	-3.2% +
Gross government debt (% of GDP)	79.2% +	78.0% +	75.3% +

Source: own calculation.

Overall, we see a growth rate of over 6.5% in 2021 up to over 7%, which will continue in 2022 due to the favourable global economic environment (e.g., 4.6% growth of the German economy) and supported by a significant domestic fiscal stimulus.

Unconventional crisis management (immediate public capital transfers + delayed – mostly one-off – household income expansion) may change the structure of growth. In connection with the election year, the ever-expanding income outflow may be accompanied by higher-than-baseline consumption growth, which may also push the inflation path upwards. Wage pressures are also unusually strong, which, in addition to demand and inflationary effects, can also lead to corporate governance problems.

We also perceive upward risks to the accumulation component of domestic demand: on the one hand, investment dynamics may change depending on the rate of use of EU funds and, on the other hand, the investment rate will increase further if the Hungarian economy can successfully reposition itself in the ongoing process of geographical reorganization of global value chains.

Our foreign trade and current account balance appear to be constantly in surplus, with negative risks related only to the effects of a larger-than-expected outflow of income or a higher investment rate on import demand. However, a more intensive accumulation of capital, if properly absorbed, raises the long-term growth potential of the Hungarian economy, thus not deteriorating the sustainability of growth.

In the case of general government equilibrium positions, the most significant risks can be perceived for 2021 and 2022: extreme fiscal expansion could result in a general government deficit of around 8% by 2021, and the election year is also surrounded by outstanding uncertainty.

The development of indebtedness indicators is significantly influenced by the development of interest rates. The higher-than-expected inflation trajectory, generating a higher interest rate trajectory, carries significant risks not only for fiscal but also for private debt: in the longer term, the solvency of households in housing credit markets may deteriorate, leading to serious social problems. Higher interest rates also worsen the return on investment, which can generate real losses.

Thus, the medium-term growth outlook for the Hungarian economy is very favourable (with upside risks), but for the long-term sustainability of the budget it seems necessary to continuously monitor equilibrium positions and take the necessary fiscal adjustment measures without delay in the event of negative risks.

Judit Antal – Anna Augusztin – Csaba Köber – Katalin Szilágyi[1]

MACROECONOMIC, PUBLIC FINANCE SITUATION AND OUTLOOK, 2021-2023

In our analysis, we take a look at the macroeconomic and budgetary processes of the Hungarian economy for the period of 2021-2023.

As in almost every country in the world, the coronavirus epidemic is the most important determinant of the present and the near future in Hungary. The epidemic, which began in China in 2019, swept across waves around the world and fundamentally shook healthcare systems, our sense of security and the rules of social coexistence. Although there were significant differences in the exposure of each country and in the course of the epidemic over time, policy responses to the epidemic followed the same pattern almost everywhere. Due to global closures, the healthcare emergency has been accompanied by a severe economic downturn: part of the workforce has permanently fallen out from production, global supply chains have been temporarily disrupted, and surviving companies have been forced to make very costly adjustments. Certain sectors (especially tourism and hospitality, which presuppose the free movement of people) have become completely impossible. In addition to declining supply capacities, household incomes have fallen worldwide, uncertainty has increased, caution has increased, and supply problems have been exacerbated by insufficient demand. Governments everywhere have responded by loosening fiscal and monetary policies and trying to cushion the impact of the crisis with an unprecedented level of global stimuli.

The global crisis has fundamentally determined the opportunities of the Hungarian economy. In terms of adapting to the crisis, we have had (and still have) particularly fortunate and less fortunate talents. Fortunate, that the first wave of the epidemic affected us only moderately, and we had more time to prepare and adapt than those countries in the South and West that had already felt the first wave. The industrial structure of the Hungarian economy also proved favourable, with the manufacturing industry (especially the automotive industry) rebounding rapidly after the collapse of global supply chains in the second quarter, so external demand already strongly supported domestic exports in the second half of the year. Unfortunate conditions holding back economic activity include significantly worse health conditions, poorer healthcare provision, and much more subdued government programmes in the EU, at least less immediate support for lost domestic demand and less targeting those sections of the population, who could have stabilized domestic demand with their high consumption rates.

The Hungarian economy, i.e., its performance fell by 5 percent in 2020, as a result of lucky and unlucky factors, which puts us in the middle position among the EU countries. The

[1] OGResearch. Date of submission: 26 April 2021.

epidemic has stalled the massive expansion of investment and consumption in recent years, even as government consumption and public investments have pulled up economic performance. Net exports corrected after falling in the second quarter and already made a positive contribution to GDP in the second half of the year. Labour market developments reflected developments in economic activity: unemployment jumped temporarily, and activity and employment rates declined. Labour market variables also adjusted in line with successive waves of the epidemic: the dramatic deterioration in the second quarter was followed by a slow recovery in the second half of the year.

The budget deficit rose to 8.1 percent of GDP in 2020, deteriorating 6 percentage points from a year earlier. Roughly half of the deterioration of the fiscal balance can be attributed to the cyclical downturn in the economy, i.e., to automatic stabilizers (transfers that automatically increase in the event of a downturn and automatically declining tax revenues). The other half of the deterioration was reflected in a decline in the cyclically adjusted primary balance, i.e., it reflects the autonomous decisions of the Government. Cyclically adjusted balance-deteriorating items include epidemic-related direct expenditure (Epidemic Protection Fund items), all government steps to neutralize the indirect effects of the epidemic, i.e., to mitigate the economic downturn (mainly items included in the Economic Protection Fund), and finally there are also discretionary expenditures that reflected quite different considerations.

As a result of the economic downturn triggered by the epidemic and the surge in the budget deficit, the decline in the debt ratio experienced in recent years has been broken. The debt ratio rose by almost 15 percent of GDP in 2020, to over 80 percent. In addition to cyclical factors and loose fiscal policy, the Government's significant increase of its financing reserves by 4.6 percent of GDP played an important role in the growth of outstanding debt. Increasing liquidity buffers is effective in mitigating the increased funding risks associated with the crisis.

In our forecast, we anticipate that as vaccination progresses, restrictions will be lifted in most countries of the European Union in mid-2021, and life will gradually return to normal. In our view, the recovery will be gradual, as demand may be subdued in the longer term due to declining incomes and rising uncertainty. With persistently depressed external demand, we do not expect significant inflationary pressures in the euro area, so both world market prices and external interest rates will remain low. In addition, the recovery in the euro area may be slowed by structural problems that have been present for years.

Based on the domestic development of vaccination and external demand assumptions, we expect the Hungarian economic performance to gradually recover from the third quarter of this year. GDP growth will be around 3.9 percent this year and will continue to grow in 2022, approaching 5 percent. Thus, output will return to pre-epidemic levels next year. On the average of the forecast horizon (2021-2023), we expect economic growth of around 4 percent, which also means that the Hungarian economy will continue to converge with the euro area with a growth surplus of nearly 1 percentage point. In addition to dynamic expansion, unused capacities are declining and by 2023 the economy will return close to potential output. We are still only moderately optimistic about the long-term growth rate of the economy (beyond the forecast horizon): we put the long-term growth potential of the Hungarian economy at 2.5 percent.

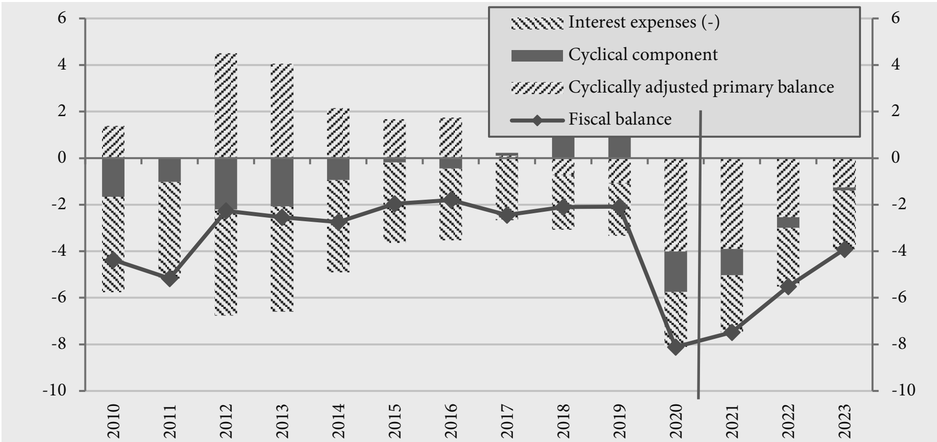
In our forecast, we also assume that fiscal and monetary policy will remain loose in the short term (we expect a correction in the orientation of fiscal policy from 2022) and support recovery from the crisis. We also expect a significant stimulus effect from the funds coming from the European Union. In addition to the cohesion and agricultural policy frameworks, the Recovery and Resilience Facility (RRF), which forms the backbone of the Next Generation EU crisis management programme, will be opened to Hungary on the forecast horizon. However, the rapid cash flow is hampered by the fact that member states have first to submit a plan for the use of resources in line with the Commission's country-specific recommendations, which is first assessed and approved by the Council. In the case of Hungary, this evaluation process may take a long time, so we expect to receive the funds from next year.

This year, one-off shocks (rising global fuel prices and an increase in excise duties on tobacco products) will temporarily raise the consumer price index above the upper limit of the central bank's target band. However, the negative output gap and labour market conditions, which have become loose again in the wake of the crisis, are hampering the pass-through of cost shocks, the so-called secondary effects. According to our forecast, inflation expectations will remain in line with the central bank's target. Thus, with the passing of temporary shocks, inflation may anchor near the 3 percent target from 2022 onwards. This will allow the central bank to maintain persistently loose monetary conditions: in our forecast, we expect a prolonged rise in nominal interest rates.

In its April 2021 bill amending the budget, the Government set the 2021 accrual deficit target at 7.5 percent of GDP. The increase in the deficit target is largely due to a significantly looser-than-planned fiscal policy while, to a lesser extent, it is due to a longer-than-expected epidemic.

In our view, the submitted budget amendment proposal represents a loose fiscal policy in 2021 to the same extent as last year. The cyclically adjusted balance may thus remain broadly unchanged. At the same time, the gradual recovery of the economy will improve the budget balance. The balance of expenditures and revenues related to the cyclical situation of the economy, i.e., the cyclical component of the budget, will improve the budget balance in 2021 by about 0.6 percent of the GDP. The rising yield environment projects a slight increase in interest expenditure as a share of the GDP.

Figure 1.
Budget deficit indicators along the baseline path (as a percentage of GDP)



Source: CSO, OGResearch.

In 2022, the economic recovery may continue. The negative output gap will continue to close, so the change in the cyclical component will reduce the budget deficit by about 0.7 percentage points. In addition, we assume that the Government will start following a stricter budget deficit path in 2022 so that it will not introduce further measures with a substantial deficit effect, while the transitional measures taken in the direct context of the crisis will no longer burden the budget. The cyclically adjusted primary balance is thus expected to decline slightly. However, with the gradual revaluation of debt, the implicit interest cost of government debt will increase further slightly, so that interest expenditure as a share of the GDP may increase mildly. As a result of the above factors, the deficit could be around 5.5 percent of the GDP.

We expect a conservative fiscal policy in 2023, so we assume that in addition to the elimination of deficit-increasing measures introduced in the 2020-2021 period, the government will take further steps to improve the sustainability of fiscal processes and accelerate the reduction of the debt ratio. We expect fiscal measures (or the expiry of previous measures) to reduce the deficit by about 1.3 percentage points. An improvement in the cyclical situation of the economy could improve the budget balance by about 0.3 percentage points, while we estimate that interest expenditure as a share of GDP will not rise further. Thus, the accrual-based deficit in 2023 will be around 3.9 percent of GDP.

Over the forecast horizon, we expect a slow decline in the government debt ratio: the indicator could decline by about 3.5 percentage points by 2023 from 80.4 percent at the end of 2020. The expected decline in the debt ratio is largely due to real economic growth and the expected reduction in general government financial reserves, while the persistently high budget deficit significantly offsets the favourable impact of the former.

By 2023, the debt-to-GDP ratio could fall below 77 percent of GDP. Although the primary balance is gradually improving, it remains negative over the horizon. The cumulative debt-increasing effect of the primary balance for the period 2021-2023 may thus be around 9.5 percent of the GDP. This is offset by the dynamic component leading to a decline in the debt ratio as a result of strong economic growth, the expected slight real appreciation of the Hungarian currency and the low cost of financing government debt.

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MACROECONOMIC ANALYSIS AND FORECAST FOR THE FISCAL COUNCIL, 2021-2023

International environment

Both in the EU as a whole and in the euro area, the rate of economic recession increased further in the last quarter of the previous year compared to the third quarter, with economic performance declining by 4.6 percent year on year in the European Union and 4.9 percent in the euro area. Of the large economies in the EU, only Germany (3.6 percent) had a milder recession than the EU, with France (4.9 percent) and Italy (6.6 percent) experiencing a more severe downturn. Among the Visegrad countries, the recession was milder in Poland (2.7 percent) and Slovakia (2.6 percent) than the EU average, while the rate of decline was 0.2 percentage points more severe in the Czech Republic (4.8 percent). In contrast, according to the European Commission, all EU economies are expected to grow in 2021 and 2022, with strong growth in Central and Eastern Europe as well. In the UK, the rate of economic recession was 7.3 percent. The US economy fell by 2.4 percent year over year, while Japan's fell by 1.4 percent, thus the rate of recession was milder in both countries than in the euro zone or the European Union.

The recovery of the labour market in the US started earlier this year, however, employment is still significantly (by 8.4 million) lower than before the coronavirus epidemic. Although the unemployment rate in the US fell from 14.8 percent in April last year to 6.0 percent in March this year, the decline in activity also contributed to this. The number of employees in the EU fell by 1.6 percent in the fourth quarter. Employment declined mainly in the sectors most affected by epidemiological constraints, while other sectors, such as information and communication, showed a substantial increase. The unemployment rate in the EU was 7.2 percent in the fourth quarter, an increase of 0.7 percentage points in one year.

The ECB and the Fed have not changed their monetary policies in the recent past. However, the situation of the two central banks is different. In the US, rising inflation has raised expectations of interest rate hikes, and thus bond yields, to which, however, the Fed does not want yet to respond in order to support achieving full employment. In contrast, despite the significant monetary easing introduced earlier, the ECB expects inflation to remain well below the 2% central bank target. Central banks in the region also emphasize maintaining loose monetary policy in the context of their forward guidance.

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[1] Századvég Economic Research Co. t.. Date of submission: 26 April 2021.

The world oil price, which fundamentally determines global inflation processes, rose from its opening value of USD 47.62 in January to USD 66.09 in early March, an increase of 38.8 percent.

In the US, annual inflation was 1.4 percent in January, 1.7 percent in February, and 2.6 percent in March. In the case of the EU, inflation of 1.2 percent in January rose by 0.1 percentage point in February and then reached 1.7 percent in March. In the euro area, inflation of 0.9 percent in January persisted for the following month, followed by 1.3 percent in March. In the Visegrad countries, inflation painted a mixed picture in the period under review: in the Czech Republic, the indicator first fell from 2.2 percent in January to 2.1 percent, then rose again to 2.3 percent in March. In Poland, following a stagnation, it began to grow, from 3.6 percent in January and February to 4.4 percent. In Slovakia, it showed an upward trend throughout the period under review, with money depreciation rates of 0.7, 0.9 and 1.5 percent in the first three months of this year, respectively.

In the first quarter of this year, interest rates on 10-year government bonds in all countries discussed rose; by 83 basis points for the United States, by 67 basis points for the United Kingdom, by 31 basis points for France and Germany, and by 7 basis points for Japan. During the first quarter of this year, the exchange rate of the main floating currencies showed a mixed picture against the dollar: the yen (7 percent), the yuan (0.4 percent) and the euro (4 percent) depreciated, while the value of the Swiss franc (7 percent) and the British pound (1 percent) grew. The world's leading stock market indices showed a changing trend over the last quarter as a whole. DAX and Nikkei produced 8 percent, DJI 7 percent and STOXX 6 percent growths. At the same time, Shanghai Composite fell by 3 percent and FTSE 100 fell by 2 percent between the beginning and the end of the first quarter of this year.

According to an IMF report in April, the world's advanced economies underwent an unprecedented level of fiscal easing in 2020 in order to halt the spread of the coronavirus epidemic and reduce its economic impact. The deficit ratio in developed countries is projected to decline only slightly this year and they will be able to return to tighter fiscal discipline only from 2022 onwards. At the same time, the loose fiscal policy of the recent period also means that public debt may remain at a permanently higher level than before the crisis.

The current situation of the Hungarian economy

Due to the de-conjunctural effects of the coronavirus epidemic and the epidemiological restrictive measures, the Hungarian economy contracted by 3.5 percent in the fourth quarter of 2020 compared to a year earlier, according to raw data and by 4.1 percent according to seasonally and calendar adjusted data. On the production side, most sectors contributed to the decline of GDP, most notably services, by 3.1 percentage points. The added value of services decreased by 5.6 percent in one year, within which trade, car repair, accommodation services, catering (7.3 percent), transport, storage (19.5 percent) and real estate transactions (7.8 percent) contributed to the volume reduction of the added value of the sector. The added value of agriculture decreased by 5.6 percent in one year, thus adding 0.2 percentage points to the decline. Growth in industry was 2.2 percent, of which that of manufacturing was 2.3 percent, while added value in construction declined by 3.9 percent year over year during the quarter. Both industry in general and manufacturing in particular contributed 0.4-0.4 percentage points, while construction slowed GDP growth by 0.2 percentage points.

On the consumption side, in the fourth quarter actual household consumption declined by 4.0 percent and consumption expenditure by 3.7 percent, thus decreasing gross domestic product by 2.3 and 1.7 percentage points, respectively. The state of emergency caused by the coronavirus epidemic and the existence of the related curfew played an important role in the decrease in consumption. Gross fixed capital formation was 1.3 percent higher than a year earlier, contributing 0.3 percentage points to GDP growth. In the fourth quarter of 2020, the volume of exports increased by 1.1 percent, while that of imports decreased by 0.4 percent, so the foreign trade balance supported the growth of the economy by 1.2 percentage points overall. The contribution of foreign trade in services to the GDP decline was 2.2 percentage points, while goods contributed 3.4 percentage points to growth during the quarter. In the fourth quarter, the foreign trade balance amounted to HUF 336.7 billion, which is HUF 258.1 billion higher than in the same period of the previous year. The aggregate household confidence index continued to be negative in the fourth quarter according to seasonally adjusted values (-24.4 index points). The indicator deteriorated both compared to the previous quarter and relative to the fourth quarter of 2019.

The labour market recovery came to a halt in the fourth quarter. According to seasonally adjusted data, the number of employed persons was 4,605,000 in the last 3 months of 2020, less by 31,000 than in the same period of the previous year. In 2020, the number of employed persons decreased by 41,000 to 4,603,000. In the fourth quarter of last year, the number of employees was substantially lower (96,000) than at the end of 2019. The reason for the significant decline is the epidemiological restrictions, as a result of which workers in certain sectors (e.g., tourism) are unable to work, so they are excluded from the statistics. In the fourth quarter, the seasonally adjusted number of unemployed was 211 thousand, by 46 thousand more than in the same period of the previous year, so the unemployment rate rose by 1.0 percentage point to 4.4 percent. Since the second quarter of 2020, the number of jobseekers has been gradually declining, but private-sector labour demand has not yet reached pre-crisis levels, so labour market tensions have eased significantly, but structural unemployment still persists in the Hungarian economy. In the fourth quarter, average gross earnings rose by 9.4 percent year over year. Behind this were an increase in the minimum wage and guaranteed minimum wage (8 percent each), wage developments at the beginning of the year, and a composition effect resulting from the dismissal of low-wage earners. Net income amounted to HUF 284.8 thousand in the fourth quarter, which represents an increase of 9.7 percent in nominal terms and 6.4 percent in real terms compared to the same period of the previous year.

In the first quarter of 2021, prices in the Hungarian economy continued to rise: domestic inflation was 2.7 percent in January, 3.1 percent in February and 3.7 percent in March. Years of dynamic wage increases and rising fuel prices through the base effect also contributed to inflation, while the weak international economy due to the coronavirus epidemic moderated price increases in the first quarter.

The increase in prices was driven by a 10.0 percent rise in the prices of alcoholic beverages and tobacco products in the wake of excise-tax increases, within which the price of tobacco products increased by 16.8 percent. In the first quarter of 2021, the average price of food increased by 3.3 percent compared to the same period of the previous year, mainly due to a 15.6 percent increase in the prices of fresh domestic and tropical fruits, 20.9 percent of cooking oil and 5.3 percent of bread. The outstanding price increase of fresh domestic and tropical fruits is due to the poor harvest caused by unfavourable weather conditions. However, the rise in food prices was moderated by a 7.1 percent fall in prices for pork, 16.3 percent for potatoes and 0.4 percent for poultry. The fall in pork prices can be attributed to the Chinese import ban imposed following the African swine fever.

Among the central bank's underlying inflation indicators, the raw, seasonally adjusted core inflation indicator was 4.2 percent in January 2021, 4.1 percent in February and 3.8 percent in March respectively, and the core inflation excluding indirect taxes was 3.5, 3.4 and 3.1 percent respectively, in the first three months of the year.

Due to the economic consequences of the Covid-19 virus epidemic crisis (persistently lower employment and lost revenue for companies), the Government decided on the further suspension of the repayment of retail loans until mid-2021.

In the first quarter of 2021, the Monetary Council of the Hungarian Central Bank did not change its key interest rate or the width of the interest rate corridor at its monthly interest rate decision meetings, so the base rate remains 0.6 percent, overnight deposit interest rate -0.05 percent and loan interest rate 1.85 percent. In addition, the Monetary Council kept the interest rate on its one-week covered loan at 1.85 percent. The interest rate on the one-week deposit facility is currently unchanged at 0.75 percent, 15 basis points higher than the base rate, as it may deviate upwards and downwards.

According to the Monetary Council, the Funding for Growth Scheme Go! programme is of paramount importance in mitigating the adverse economic effects of the coronavirus epidemic. Since its launch in April 2020, there has been significant interest from businesses, as this financing opportunity was used by about 26,000 domestic micro, small and medium-sized enterprises by mid-February 2021, in the amount of nearly HUF 1,700 billion. In addition, large companies raised a total of nearly HUF 900 billion from the start of Bond Funding for Growth Scheme until mid-February. MNB will continue to fully sterilize the excess amount of money issued under the programmes with the help of the preferential deposit facility.

The stock of corporate loans shrank by HUF 66.8 billion (to HUF 9,403.0 billion) by the end of February 2021, while the stock of retail loans increased by HUF 170.5 billion to HUF 8,213.2 billion compared to November 2020. Within retail loans, the stock of consumer loans grew more significantly than that of housing loans. The former increased by HUF 103.6 billion to HUF 3,693.5 billion, while the latter increased by HUF 67.7 billion to HUF 4,034.5 billion.

Investor sentiment in Hungary is mixed. The CDS spread stagnated at 64 basis points in the first quarter of 2021, 10-year government bond yields rose slightly (from 2.15 percent to 2.78 percent), the forint strengthened against the Swiss franc (from HUF 337 to 329) and the euro (from HUF 365 to HUF 364) and weakened against the dollar (from HUF 297 to HUF 310).

General consolidated gross government debt at nominal value was HUF 38,408 billion at the end of the fourth quarter of 2020, which was 80.4 percent of GDP after 65.4 percent a year earlier.

In the recent period, all three major international credit rating agencies have announced a date for changing and confirming the risk rating. None of them changed the risk assessment of Hungarian public debt. Hungary's sovereign debt is currently rated as Baa3 with a positive outlook at Moody's, BBB with a stable outlook at S&P, and BBB with a stable outlook at Fitch. Thus, the risk rating of Hungarian government securities in the former is at the lowest level of the category proposed for investment, while for latter the two major international credit rating agencies it is one category higher.

The foreign exchange ratio of Hungarian government debt has stagnated, as after 19.9 percent at the end of December 2020, it was also 19.9 percent at the end of February 2021. This ratio is still in line with the 10-20% target range set in the 2021 financing plan. The goal is to reduce the share of debt denominated in foreign currencies (this is welcomed by the credit rating agencies, and the exchange rate risk is also more moderate with a lower share of foreign-currency debt).

Hungary continues to comply with the Greenspan-Guidotti rule, as the level of central bank foreign exchange reserves is significantly (1.56 times) higher than the level of short-term foreign currency debt.

The virus situation will determine this year's economic performance

Our forecast is based on data and measures available up to March 18th. As the economic situation in the coming period will continue to be determined by the coronavirus and the restrictive measures introduced, we will examine the effects of them on both alternative pathways. Our baseline scenario assumes that the lifting of restrictions will gradually begin in the first half of the second quarter, while the first alternative trajectory will face protracted restrictions. The second alternative path, on the other hand, assumes a faster restart.

Expectations related to Hungarian economic growth in the last quarter were influenced by two opposite factors. In the fourth quarter, economic performance declined less than expected, with several sectors already reaching or even exceeding their previous output. Meanwhile, the restrictive measures originally imposed for one month in November were extended on several occasions and further measures were introduced in March. This is holding back economic growth.

Taking these factors into account, we expect economic growth to reach 4.0 percent in 2021 due to the low base. Within this, the performance of individual quarters may differ significantly: while the first quarter may be characterized by a decline on an annual basis, the second quarter may experience double-digit expansion due to last year's spring shutdowns. The volume of economic growth in 2022 and 2023 could be 5.1 percent and 4.5 percent, respectively.

In addition to the development of the income situation, the volume of consumption is determined by the restrictions and the precaution of households: how much they fear further restrictions and the possible deterioration of their income situation. However, it is expected that when the restrictions are lifted, some of the savings that have increased in the recent period, will become consumption. In the first part of the period under review, by the end of 2021, therefore, the lifting of restrictions and the low base period data, while in the second part the improvement of the income situation may stimulate consumption. Accordingly, the volume of household consumption expenditure may increase by 3.2 percent in 2021, by 4.7 percent in 2022 and by 4.2 percent in 2023.

Investment has also been held back by the epidemic: businesses and municipalities have postponed or terminated their investments in several cases due to the uncertain economic environment and lack of resources. With the resolution of the virus situation and the expansion of the available resources, we expect an increase here too. This can be facilitated by a low interest rate environment, government support programmes, EU funds and joint EU borrowing. However, in the case of these resources it is important to use the resources efficiently, focusing on the future, and avoid the risk that the abundance of resources can lead to higher prices. Taking these factors into account, the expansion of investments in the three years under review may amount to 7.5, 5.8 and 6.2 percent, respectively.

This year the expected development of foreign trade will also be determined by the improvement of the epidemic and the weak base period data. The key question for the growth of exports is how the demand in our foreign markets develops and how much they will be able to buy the products produced in Hungary, as well as the pace at which international tourism will resume. Growth in imports will be supported by rising exports and domestic demand, while we expect less demand for healthcare equipment. Taking these factors together, the volume of exports may increase by 8.7 percent this year, by 8.1 percent next year and by 6.6 percent in 2023, while the growth of imports may be 7.8, 7.0 and 6.4 percent, respectively.

According to our forecast, the number of employees may decrease in the first half of this year and then start to increase again from the time of lifting of restrictions so, that for the year as a whole it may increase by 11 thousand to over 4.614 million. By contrast, we forecast an increase in employment of 58,000 people by 2022 and almost 29,000 by 2023. Assuming an increase in activity, the unemployment rate may thus stagnate at an annual average of 4.1 percent this year, and then decrease to 3.2 percent over the next two years. As a result, labour shortages may reappear over the forecast horizon, but to varying degrees across sectors which in turn could have a positive impact on wage dynamics. In the case of earnings, we expect a modest expansion of only 4.7 percent this year, due to the lack of funds for companies, the 4% increase in the minimum wage, and the composition effect resulting from the re-employment of low-wage earners. From 2022, however, the pace of wage growth may pick up again, reaching 8.1 percent next year and 9.2 percent in 2023. Behind this, faster economic growth (allowing for a higher increase in the minimum wage) and the emergence of labour shortages could be the main drivers. Thus, real wages could increase by 1.2 percent this year, by 4.7 percent in 2022, and by 5.6 percent in 2023.

Inflation has been above the central bank target in recent years, despite low oil prices and moderate demand, averaging 3.3 percent in 2020. Meanwhile, core inflation was hovering around the top of the central bank's target band. In the next period, inflation will be pushed up by the weak exchange rate of the forint, the base effect due to last year's low oil prices, while it will be curbed by low imported inflation. In terms of inflation, the post-reopening situation poses a risk: low supply (bankrupt companies) and a sudden increase in demand may push prices up, but this may also be helped by the fact that companies forced to close will try to compensate for the loss of revenue by raising prices. Taking these factors into account, inflation may remain within the MNB's target range but above the target over the entire forecast horizon. Inflation in the three years under review could be 3.5, 3.2 and 3.3 percent, respectively, while core inflation describing the underlying processes could be 4.0, 3.7 and 3.7 percent, respectively.

Accordingly, MNB must pay close attention to inflation and exchange rate developments. In addition to more favourable inflationary developments, exchange rate stability could also help SMEs to survive. Accordingly, if inflationary processes require, MNB may tighten slightly. Overall, however, the orientation of monetary policy may remain loose and unconventional instruments may persist as long as the pandemic situation requires. Maintaining a low interest rate environment is greatly aided by the fact that the ECB's monetary policy can remain loose throughout the forecast horizon.

In terms of the budget balance, we expect a deficit of 7.1 percent of GDP by 2021, compared to a deficit of 2.9 percent in the budget law, 6.5 percent in the forecast announced in December 2020 and 7.5 percent in the budget amendment proposal presented in April. The ESA deficit is therefore expected to start declining in the coming years but will not yet reach the 3% Maastricht criterion over the forecast horizon. In terms of gross government debt as a share of GDP, we expect a slight increase this year, up to 80.8 percent. In the event of a discrepancy between the estimated values and the actual outturn, the measures taken to curb the coronavirus epidemic and restart the economy, as well as the pace of the start of the new EU budget cycle, pose a risk.

Based on our projection, the general government ESA balance in 2022 could reach -5.0 percent of the GDP, compared to -4.8 percent in the December forecast by the Ministry of Finance. The level of public debt calculated according to the Maastricht criterion will reach 78.7 percent of the GDP, which means a decrease of 2.1 percentage points compared to the expected 80.8 percent by 2021. We estimate that the deficit as a share of GDP expected by 2023 could be 4.1 percent, while government debt could be 76.3 percent.

Within the current account, the – seasonally adjusted – balance of goods and services increased by EUR 62 million in the fourth quarter of 2020 compared to the previous quarter to EUR 1,235 million. The level of income outflows increased slightly, and the inflow of EU transfers strengthened significantly on a quarterly basis.

Exports shrank last year, given the largely unfavourable external environment due to the negative economic effects of the Covid-19 virus epidemic. This year, export growth could be significant again, at 8.7 percent. Analysing the demand and supply effects on imports, due to the significant increase in consumption, investment and import demand for exports, the growth may be 7.5 percent this year, while next year the growth will be 8.1 percent. As a result, the foreign trade balance will be bigger this year compared to the previous year.

Overall, we forecast a net lending of 2.8 percent of the GDP for 2021, while the indicator could rise to 3.3 percent in 2022. In addition to the rising foreign trade balance, the current account balance may be slightly worse than last year's level this year and then more favourable next year (-0.3 percent and 0.4 percent, respectively).

Risk scenarios

Our two risk scenarios this year focus on the most important risk factor, the coronavirus. In the first alternative trajectory, we assumed that the restrictions could not be lifted at the expected pace or that restrictions would have to be expected again due to an autumn fourth wave. In contrast, the second alternative path assumes faster deregulation and a bouncing economy. Accordingly, along the first alternative trajectory, the permanent economic damage is also higher than estimated in the baseline trajectory. Thus, economic growth may be lower this year at 2.1 percent, followed by a milder – 4.5 percent – expansion next year, due to slower recovery and longer-term effects. Due to the lower base, however, growth in 2023 is estimated to be higher along this trajectory, at 4.8 percent. Along the second alternative trajectory, this year's growth of 5.1 percent is higher than calculated from the baseline trajectory, while in 2022 and 2023 it will be similar, at 5.0 percent and 4.8 percent, respectively. In the case of inflation, we have identified upside risks on both alternative paths – the first due to the cost of defence, and the second due to rising demand. Thus, inflation along the first alternative trajectory in the three years under review could be 3.7, 3.8, and 3.7 percent, respectively, while along the second alternative trajectory, it could be 3.6, 3.5, and 3.6 percent, respectively. This means that inflation may be above the central bank target in all three paths, but within the target band. Developments in the macroeconomic trajectory and expenditure in connection with the coronavirus will, of course, also have an impact on the budget deficit and government debt-to-GDP ratio. The deficit and government debt are correspondingly higher along the first alternative trajectory. The value of the former in the three years examined was 7.6, 5.4 and 4.5 percent of the GDP, respectively, while that of government debt was 82.6, 80.7 and 78.1 percent, respectively. Along the second alternative path, fiscal indicators are also more favourable: the deficit could be 6.8, 4.8 and 3.8 percent of GDP, respectively, while government debt could be 79.7, 77.3 and 74.4 percent, respectively.

Thus, the alternative trajectories do not affect which 'letter' the recovery follows, basically a recovery similar to "W" or "K" is conceivable along each trajectory, however, what is influenced by the alternative trajectories, are the parameters of each letter, the slope of the stems.

Judit Antal – Anna Augusztin – Csaba Köber – Katalin Szilágyi[1]

IMPACTS OF THE WORLD ECONOMY ON THE EU, INCLUDING THE HUNGARIAN ECONOMY AND PUBLIC FINANCES

2021 is marked by an exceptional rebound: as a result of the extraordinary vaccine development efforts and the subsequent extensive vaccination programmes worldwide, life is slowly returning to normal after the Covid-19 shock. This year, the world economy as a whole is expected to grow by around 6 percent, which also means that the world has "outgrown" the virus-induced recession in one year, global GDP is already above the level measured at the beginning of the pandemic.

Hungary's recent performance was also shaped by the global epidemic and the economic policy responses to it. On the positive side, the Hungarian vaccination rate is high in international comparison, and the Hungarian Government gained some precious time in the second quarter of this year by diversifying its vaccine purchases, which allowed the domestic service sector to return to normal sooner than in the peer countries. Thus, in the second quarter of this year, the Hungarian economy expanded at a rate well above the EU average and, according to our forecast, this year's growth will also exceed the performance of the reference countries. On the other hand, any further support to the economy (or an effective economic policy response to a possible future shock) is severely limited by the high level of public debt.

The pandemic and the related lockdown not only caused a recession (and led to higher budget deficit through the automatic stabilizers), but substantially increased the direct (health-related) and indirect (recession-related) expenditures aimed at the mitigation of Covid-19. Thus, by the end of 2020, the government debt ratio grew over 80 percent of GDP, and returned to the level of ten years ago. In addition, support to the economic recovery will keep the budget deficit elevated, so the debt ratio will not decline sharply this year and is projected to exceed the pre-pandemic level even at the end of the decade. This may encourage the Government that prioritizes "economic autonomy", to pursue a more restrictive fiscal policy in the future although, in the absence of concrete measures and tangible commitment, we do not expect a substantial fiscal correction.

In addition to the baseline forecast scenario, we prepared three alternative projections in which we presented forecasts that could significantly affect the outlook and sustainability of the Hungarian economy and public finances. Since almost all of our important assumptions in the baseline forecast are optimistic (we assume no further lockdown, correction in the global commodity prices and persistently low external financing), all the alternatives focus

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[1]OGResearch Budapest. Date of submission: 26 April 2021.

on the potential downside risks. In the first trajectory, we assume that the next, fourth wave of Covid-19 will prove to be more severe than expected, thus despite the decision-makers' anti-lockdown standpoint, there will be further restrictions and temporary closures. In the second scenario, the increasing global commodity prices pose significant inflationary pressures not only temporarily but also over the longer term. The third scenario revolves around the most important financing risk of the Hungarian economy, in the case of which a possible conflict with the EU leads to a drastic increase in our risk perceptions and financing costs.

Each of our presented alternative scenarios emphasizes downside risks: both the real economic outlook and fiscal sustainability indicators are worse than in the baseline scenario. The long-term debt ratio increases the least in the case of renewed (fourth wave) closures as we believe further lockdowns would be strictly temporary, which worsens the primary balance of the budget only in the short run. In the other two scenarios (modifying the nominal side of the economy), short-term real economic costs remain negligible, but the interest expenditures and the debt ratios are both permanently higher due to the persistent weakening of the exchange rate and the rising interest burden on government debt. Overall, an important message is that in terms of debt dynamics, the most significant threat is not the temporary recession, but a financing risk independent of the autonomous behaviour of fiscal policy (the evolution of the primary balance) could pose a more severe downturn. Although this risk is somewhat moderated as the share of foreign debt decreases, the public debt ratio around 80 percent and the increasing financing costs remain a significant threat to the sustainability of the Hungarian public finances.

Katalin Nagy – Rozália Bogó – Miklós Losoncz – Éva Palócz – Péter Vakhal[1]

IMPACTS OF THE WORLD ECONOMY – WITH SPECIAL REGARD TO BREXIT – ON THE EU, INCLUDING HUNGARY'S ECONOMY AND PUBLIC FINANCES

Overriding all previous expectations, the outbreak of the Covid-19 pandemic has fundamentally changed the picture of the world economy since the spring of 2020. Last year global performance fell by 3.5%. The OECD forecasts 5.8% growth for this year (although the first quarter was still generally down) and 4.4% for 2022. The IMF's July forecast is even more optimistic: it envisages 6% growth globally for this year and 4.9% for the next one, emphasizing that the outlook is improving, especially in the developed countries. For the time being, favourable interest rate conditions and household savings accumulated during the crisis are conducive to the expansion of private consumption everywhere. In the field of investments, those that were postponed due to the crisis will be implemented and increased industrial production will encourage further investments. Unless another wave of epidemics hits in the second half of the year, a kind of recovery may also start in the field of tourism and related services. Downside risks to growth include stronger inflation and tightening monetary conditions, as well as a resurgence of the pandemic. Although each factor has a good chance to occur, for the time being, most forecasters expect these risks to remain within manageable limits. Uncertainty is heightened by the emergence of new variants of the coronavirus, which will force further tightening in many countries even now, but certainly later this year, in the autumn. Vaccination campaigns in developing countries continue to be a very big problem, and healthcare providers' preparedness for the epidemic in these countries is very rudimentary. This year's growth still relies heavily on fiscal stimuli, whose phasing out could lead to slower growth in the future.

Economic recovery programmes were launched simultaneously around the world, which significantly boosted world trade and provided a chance for the world to return to a trend that was disrupted in 2019. After declining last year, the volume of trade in goods will expand significantly this year, especially in the catching-up countries, to which we count China as well. Compared to last year, the second quarter has seen an increase in imports of more than 20% so far, in both the developed and catching-up countries, because of the import demand related to investments. World trade in goods increased by 25% in April and May compared

[1] Kopint-Tárki Institute for Economic Research Co. Date of submission: 10 September 2021.

to the same period last year. Exports from developed countries are expanding to a similar extent as those from catching-up countries: in the second quarter, we have already seen a 30% change in volume. However, we need to bear in mind that the low base continues to dominate strongly the year-on-year statistics. Over a 2010 basis, exports from developed countries are still only 125%, broadly in line with 2018 levels (i.e., the slowdown in export activity has already begun before the epidemic). Meanwhile, the catching-up countries, led by China, achieved an increase of roughly 140% compared to 2010. In recent months, however, there has been a slowdown in trade in goods due to bottlenecks in logistics and lack of supply of certain commodities and components. Global port capacities are not enough to meet transport needs, with ships waiting up to 20 days in some ports for (un-)loading. All this is reflected in freight costs, where even two- to threefold price increases are conceivable. The bad news is that the pressure on logistics providers is not easing; on the contrary, it is even increasing, as the restart of economies gets stronger in more and more places. The bottleneck can be felt not only in the field of industrial metals, but also now in the case of 'luxury' foodstuffs (coffee, tea).

The economic recovery is also heating up demand for commodities. The latest IEA report sounds optimistic: global oil demand could rise by as much as 5.3 million barrels a day this year, to an average of 96.2 million barrels a day. A further rise of 3.2 million barrels per day is expected next year. Thus, by the end of 2022, global oil demand could reach pre-pandemic levels. There is some uncertainty whether the upward trend in demand was broken in July, and fears of a further spreading of the pandemic also worsened the outlook for the second half of this year. In May, the price of Brent crude oil was around USD 68 per barrel, which was partly due to a decline in crude oil reserves. By the beginning of June, the price of Brent oil had risen to USD 71 per barrel, reaching USD 75 by mid-June, remaining above USD 70 throughout July, and sometimes even approaching 80, but the upward price pressure had eased somewhat. Thus, by mid-August, the price of Brent had dropped to USD 70 again, and by the end of August, it had slipped below it. In the autumn months, the development of demand is surrounded by considerable uncertainty: in many Asian countries, the spread of the Covid-19 delta variant has led to the introduction of new restrictions, which may reduce mobility and curb the expansion of demand. Due to the expected expansion of crude oil supply and the slowing growth of demand, the rate of price increase in the fourth quarter may slow down and next year prices may calm down again due to the expansion of OPEC production and the increase in US shale oil production. The average price of crude oil may be around USD 66-68 a barrel this year, while next year, if supply expands strongly, temporarily it may even decline slightly. It is estimated that next year's average price could be between USD 65-70. For the time being, experts do not expect oil prices to rise to much higher levels than at present in the forecast period. There is still significant spare capacity in extraction, and no extreme expansion of demand is expected.

Prices for certain products on the world market for non-energy raw materials have risen to unprecedented levels, especially those needed for infrastructure investments such as iron ore and copper. Food prices have also started to rise rapidly, and signs of a super cycle are already showing signs of rising demand for biofuels. However, in June-July, both industrial metals and food prices declined slightly. It is not yet clear how lasting this trend will be. Supply cannot keep pace with demand in almost any segment, mainly due to China, where polluting power plants are being shut down one after the other with the slogan of becoming carbon neutral and lost capacity is being replaced by imports. Speculators have also risen to this wave, so Beijing is trying to cool the market by launching the sale of strategic reserves; however, high prices will almost certainly persist until the end of the year, and in some product categories especially important for Hungary, such as microchip production, it can even last until the end of 2022.

In order to mitigate the adverse cyclical effects of the pandemic, monetary policy remained on an extremely loose course last year. This year is also characterized by the continuation of the previous policy; however, the first indications that change can be expected next year, have already emerged. The Fed has not yet changed its base rate, but has raised its inflation expectations, and while it indicated in its communications that the rise in inflation would be only temporary, there are growing signs that interest rate expectations are pointing upwards. No action has yet been taken on the asset purchase programme, but central bank communication has become much more cautious than before, stressing that they are monitoring incoming data monthly, and deciding on the necessary steps accordingly. The US Federal Reserve makes the possible slowdown in the asset purchase programme primarily dependent on labour market developments but, in its view, US employment affected by the epidemic has not yet reached the point where this would be justified. The communication also shows that it is conceivable that the central bank will consider narrowing the asset purchase programme in the autumn months at the earliest, although there were rather contradictory statements in this regard recently. From all this it can be concluded that even if not this year, but next year, a change of direction in US monetary policy can surely be expected, which will affect other countries as well. Although the Fed is only signalling a temporary rise in inflation, fears are predicting that a possible price-wage spiral will emerge in the US. At its July meeting, the ECB confirmed that it would continue to pursue loose monetary policy and that key interest rates would remain at current low levels, despite the fact that inflation rates had already exceeded 2% in July and that inflation expectations point to rising inflation. Following the so-called strategic review, the Governing Council reiterated its position to maintain a persistently loose monetary policy stance in order to meet the inflation target. According to the ECB's communication, it is not yet time for tightening, nor will it be until inflation reaches 2% on a lasting basis, and trends in inflation do not suggest that inflation will stabilize at 2% over the medium term. At the same time, if inflation becomes persistently higher than the central bank target, the ECB will have no choice but to tighten. According to ECB staff, the first step could be tapering off the crisis asset purchase programme (PEPP), then phasing out of the "traditional" QE programme (APP), followed by an interest rate hike. A latter will increase the cost of financing government debt and raise yield expectations. The Bank of England also keeps its loose monetary policy, despite the fact that inflation rose to 2.5% in June, i.e., above the central bank target. The Bank of Japan continues to pursue a policy of extreme easing. At the same time, economic conditions in other countries are already forcing some monetary tightening. The Russian central bank has raised the key interest rate further since the spring, pushing the key interest rate from 4.50% in the spring to 6.5% in July. The Czech central bank raised the key interest rate by another 25 basis points to 0.75% in August, citing its desire to curb the expected rise in inflation due to the recovery from the coronavirus crisis and indicated that further interest rate hikes could be expected during the year. On 22 June, the MNB raised the key interest rate by 30 basis points to 0.90%, indicating that a cycle of rate hikes had begun, and on 28 July it raised the key rate further to 1.20%, followed by another raise of 0.30% on 24 August. Thus, the Hungarian base rate is now 1.50%. In the case of Mexico, Brazil, Iceland, Argentina, Chile, Ukraine, and South Korea, interest rates were also raised in May-June-July-August. All this indicates that the period of loose monetary policy is coming to an end in many countries, and – albeit slowly – the monetary framework conditions will change, which will make financing public debt more difficult.

The pandemic has also led to significant changes in FDI flows. The value of new FDI was 35% less in 2020 than in the previous year. It occurred for the first time since 2005, that there was so little interest in investing abroad. As a result of the epidemic most of the investments already underway have been rescheduled or stopped and few have dared to embark on new projects. The biggest decline occurred in Europe. In 2020, 80% less working capital flowed in than in 2019. From a Hungarian point of view, it is also noteworthy that Germany, the world's second largest exporter of FDI, reduced its – new – foreign direct investments by 75% in 2020. This was mainly due to the withdrawal of loans within groups of companies, as well as the repatriation of profits generated by subsidiaries and the lack of their re-investment. Asia was the only continent to receive more FDI last year than a year earlier, which also means that more than half of FDI flows went to that continent. In particular, the Asian member states of the Regional Comprehensive Economic Partnership (RCEP) group, such as China, South Korea, Singapore, and the ASEAN countries, have strengthened their ability to attract capital. In the ranking of FDI-importing countries China, which was able to increase the amount of inward FDI in 2020, took the place of the traditional leader, the USA, where FDI inflows fell by 40% last year, mainly due to the lack of re-investment of profits. The third stair on the winners' stand is occupied by India, where the demand for the acquisition of companies and start-ups in the ICT sector is growing. FDI flows reached their lowest point in the third to fourth quarters of 2020, and some rebalancing has begun, which will be reflected in a 10-15 percent increase in 2021.

Inflation is expected to pick up everywhere in 2021, mainly due to rising commodity and energy prices. Industrial producer prices also started to rise, partly due to various bottlenecks, supply disruptions and the upward trend in commodity prices, which significantly raised the prices of some semi-finished products. According to Eurostat, the inflation rate in the euro area in July 2021 reached 2.2%, rising to 3% in August, while it was still below 1% at the beginning of the year and negative in December last year. In the euro area, Estonia and Lithuania had the highest inflation rates above 4% in July, but Germany and Luxembourg also saw prices rise above 3%. Consumer prices are also rising sharply in the US: in June this year, both core inflation and the consumer price index were higher than expected. The month-on-month increase in prices was 0.9%, but compared to the previous year, it was 5.4%, and core inflation also reached 4.5%. The latter has not been so high since 1991, and the increase was mainly due to changes in car prices. For the time being, both the Fed and the ECB consider this phenomenon to be temporary, and they emphasize it because they do not intend to take stronger action for the time being; however, they could easily prove wrong and be forced to act sooner than expected.

Everywhere in the external environment of the European Union, there is an economic recovery. The OECD's Composite Leading Indicator (CLI) index indicates that while in China the indicator fell as early as February last year, it was somewhat delayed for the other regions where it fell only in April, and to varying degrees from region to region. Since last autumn, sentiment has started to improve everywhere, and this upward trend has persisted for the time being, although some countries showed some downward movement in August. The rate of improvement is strongest in China and Brazil, and the weakest in the UK and India.

Although the US economy has recovered from the pandemic relatively quickly, with dynamic growth expected this year, some structural changes (such as the spreading of home office, the use of video conferencing, etc.) have begun within the economy that could reduce past demand for certain services. The US GDP could grow by 6.9% this year, according to the OECD forecast, and at a somewhat slower pace, by 3-4% next year. Both private consumption and investment will expand by around 8%, with exports partly offsetting last year's 12.9% decline with 6.3% expansion this year. Public consumption will expand by 3.4%. State incentives will still play a very important role in this year's dynamic growth. The US fiscal stimulus package is estimated at 8.5% of the GDP, and much of it will be spent in 2021. Many incentives (e.g., increased unemployment benefits) will remain in place until the autumn.

After a 4.7% decline last year, Japan is expected to grow by 2.6% this year, which will slow down somewhat next year. Thus, GDP will not reach pre-pandemic levels before the end of 2022. Growth will be driven mainly by exports, which, the OECD forecasts, could expand by as much as 11.5% this year, broadly offsetting last year's decline. Public consumption spending is also growing dynamically, while private consumption and investment activity remain sluggish. Household savings will remain relatively high both this year and next, also indicating that consumer confidence has not yet returned, and that slow wage growth will not stimulate consumption either.

In addition to the consequences of the Covid-19 epidemic for the Russian economy, low crude oil prices have also had a dampening effect on growth. According to the latest IMF forecast, Russia's GDP could grow by 4.4% this year after falling around 3% last year, and by 3.1% next year. Much depends on how oil prices and global oil demand evolve. The structural problems of the Russian economy remain unchanged, making recovery difficult.

The UK economy was hit by two negative demand and supply shocks in 2020 and 2021: Brexit and the coronavirus epidemic. While Brexit is aggravating the situation primarily in the sectors that produce goods and services for international trade, the pandemic is affecting primarily the domestic market-oriented services. The regional and employment consequences of the two shocks are different. At the macroeconomic level, the effects of Brexit and the pandemic add up. Although the Trade and Co-operation Agreement helped avoiding a no-deal secession from the EU and related disruptions to bilateral trade, Brexit has adversely affected both the UK and the European Union, but due to the asymmetry between the economies of the two entities, the EU was hit to a much lesser extent. Although the agreement mitigated the disadvantages compared to other options, it resulted in a more unfavourable trade policy environment for both parties compared to British EU membership, mainly due to the emergence of various non-tariff barriers. The two separate regulatory areas created by Brexit, the backlog, the ongoing conciliation, and the five-yearly renewal of the Trade and Co-operation Agreement perpetuate uncertainty in bilateral economic relations. Another factor of uncertainty is the amount of the exit-fee to be paid by the United Kingdom to the European Union. For the United Kingdom, the negative effects are most pronounced due to the loss of free movement of persons in the labour market and in financial services, which are not covered by the Trade and Co-operation Agreement. The two effects have reinforced each other, causing labour shortages, and perpetuating them if they persist.

It is becoming increasingly clear that access to the vaccine, the level of vaccination of the population is the most decisive factor of the economic prospects of the developing world. Not even the relatively optimistic forecasts think it likely that by the end of this year at least half of the population in developing countries will receive the vaccine that will provide protection for them. Many of them are facing a "lost decade", meaning that they will need nearly ten years to return to the level they were in before the pandemic broke out. The Covid-19 epidemic has also broken the upward trend in achieving sustainable development goals (SDGs) in the framework of the global development programme announced by the UN in 2015. The downturn caused by the pandemic virtually destroyed the results of the development programme.

China, the only country that was able to grow even during the pandemic, is returning to a dynamic, 8.5% GDP growth trajectory this year. One of the cornerstones of the five-year plan launched this year, called the "dual cycle", is to make domestic consumption the most important driver of economic growth. Consumption already accounts for a remarkably high share of GDP growth, but the drive to meet needs postponed due to lockdowns also plays a strong role. Another major driver of GDP growth is net exports, which mainly reflects China's very rapid response to the demand created by the pandemic. They have managed to bridge much of the problems with global production chains, the trade war, by concentrating on the manufacture and export of epidemic-related medical equipment, devices, and products. All this indicates that China will soon have a stronger influence than before both in terms of FDI exports and financing the budgets of states facing liquidity difficulties.

The European Union's economy shrank by 6% last year in the wake of the pandemic, and the level of its output was 5% lower than in 2019. The first quarter of this year closed with a 1.3% decline compared to the same period last year, but in the second quarter an increase of 13.2% could already be recorded. It is true that the base effect is also significant here, as the decline was the largest in the second quarter of 2020 (-13.6%). Of the European Union member states, Spain, France, and Italy produced the largest increases in the second quarter of 2021, but they were the ones where the decline was particularly sharp last year due to the epidemic, both in the second quarter and for the whole year. On average, we expect GDP growth of 4.9% this year in the EU-27, provided that the expected easing is achieved later in the year, without any more serious consequences, and that new virus variants do not enforce further austerity measures. Inflation has also started to accelerate in the EU-27, especially in some countries; after 0.7% last year, consumer prices are expected to rise by an annual average of 2.2% this year, and we expect a slightly lower inflation of 1.8% next year, but there are upside risks here. The inflation rate in June was 2.2%, and in most countries the price level continues to rise; the July rate has already jumped to 2.5%. Unemployment could rise to around 7.6% this year and fall below 7% next year if the recovery stabilizes. Since the beginning of the year, the unemployment rate has been steadily declining, standing at 7.1% in July. However, in many countries, favourable labour market indicators are maintained by massive state subsidies.

Last year the euro zone's GDP fell by 6.4%. In the last quarter of 2020, it was about 4% lower than in the last quarter of 2019. As a result of another wave of the pandemic, euro area GDP contracted by 1.3% year-on-year in the first quarter of the year and by 0.3% quarter on quarter. From the second quarter onwards, however, we expect dynamic growth since – thanks to mass vaccination – restrictions are eased everywhere and tourism is gradually starting to pick up, as are residential services. In the second quarter of 2021, the GDP grew by 13.6% year on year and by 2% quarter on quarter. The high growth data for the second quarter of this year reflects a significant base effect, with the EU-19 GDP declining by 14.4% in the second quarter of 2020, reaching a negative record. On an annual average, the EU-19 GDP could grow by 5% this year and by 4.6% next year. The level of GDP is expected to reach pre-crisis levels this year. Growth differences between countries remain significant. This year, fiscal measures will continue to play a significant role in growth. The various support measures will be phased out in the second half of the year or next year, depending on economic developments. There is a significant downside risk from the emergence of a new wave of the pandemic, which could lead to further restrictions and possible monetary tightening in the wake of rising inflation.

There is some change in the inflationary environment. Last year, the annual average inflation rate in the euro area reached 0.3%. However, there has been a steady rise since January. In May, the EU-19 inflation rate reached 2%, the central bank's target. It jumped to 2.2% in July and since commodity prices are on an upward trend, the economy is picking up, higher rates can be expected in the remaining months of the year as well. According to our current information, inflation may be above 2% on average this year, which could fall to 1.7% next year, but the risks to inflation are significant.

Fiscal measures taken to counteract the consequences of the coronavirus epidemic have placed a significant strain on euro area public finances. Budget balances are deteriorating significantly everywhere this year, and the European Commission temporarily lifted the requirement to comply with the Maastricht criteria. It is estimated that for all countries, the general government deficit will exceed 3% of the GDP in the period 2020-2021 in all member states, and in 2022 only a few countries (Luxembourg, Ireland, the Netherlands, Cyprus, and Germany) will be able to meet the Maastricht criteria. In the case of Greece, Italy, Portugal, Belgium and France, gross public debt is above 100% of the GDP, so consolidating public finances could be a very serious problem in the future, especially with rising interest rates, especially as most of these countries have serious structural problems. Rising gross public debt in countries with sound economies and sound finances, such as Germany, or in Lithuania, Luxembourg, Latvia, or Estonia, which are otherwise below the debt ceiling, does not pose as much of a problem as in countries such as Greece, where consolidation has just been achieved or Spain, where the efforts to stabilize the budget and manage the debt burden came at a great cost. As fiscal stimulus needs to be maintained this year to stabilize the recovery, public finances will only deteriorate further. The phasing out of fiscal stimulus will only be possible slowly, given that the recovery has just picked up and the risk of a resurgence of the epidemic, the occurrence of another wave in the autumn months, are increasingly likely.

The German economy contracted by 3.1% in the first quarter of the year, compared to the same period last year, largely due to pandemic constraints. The situation changed in the second quarter, with German GDP growing by 9.2%, well below the euro area average of 13.7%. The German data was disappointing – analysts expecting better. Following last year's 4.8% decline in GDP, economists expect 3.6% growth this year, which could strengthen further, above 4% next year. The condition for this is, of course, that the recovery from the pandemic is lasting, that another wave of infection does not require restrictions that would significantly slow down growth in Germany or in its major external partners. Manufacturing companies continue to be sensitive to various supply bottlenecks, with a stronger recovery expected in the second half of the year, although companies are becoming increasingly pessimistic. Private consumption picked up strongly in the summer months, but recent forecasts point to deterioration in consumer sentiment and the willingness to spend is likely to decline in the autumn months. On an annual basis, private consumption may expand by 2-3%. Investment activity is also gaining momentum, with growth of over 3% this year and up to 4.5% next year. As a result of the surge in external demand, exports of goods and services could expand by as much as 11% this year, following a 9.4% decline last year.

France has been hit very hard by the crisis. Last year, GDP shrank by about 8%. Growth is expected to be around 5% this year, which will subside slightly next year. In the first half of the year, economic performance picked up, especially in the second quarter. According to Eurostat, in the first quarter of 2021, French GDP grew by 1.7% year on year, while in the second quarter it grew by 18.7%. (The base effect is significant, as the French GDP contracted by 18.7% in the second quarter of 2020, well below the euro area average.) There is a significant risk of reintroducing earlier restrictions in the second half of the year due to the spread of the delta variant of Covid-19.

Among the euro zone countries, in addition to Spain, Greece and France, Italy has perhaps been hit hardest by the epidemic. Last year, their GDP fell by 8.9% year on year, which is smaller than previously expected, but it will still take years to make up the losses caused by the epidemic. Last year, all components of GDP, except government spending, shrank. In the first quarter of this year, GDP fell by another 0.7% year on year, but in the second quarter it already expanded by 17.3%. It is true that the base effect is also very strong here, with the GDP declining by 18.2% in the second quarter of 2020, one of the worst performances in the euro area alongside Spain. Growth is expected to be around 4.5% this year, with investment and exports expanding in particular.

In the spring of 2020, the pandemic and the ensuing economic crisis hit a slowing Eastern European region, bringing to the surface many problems that have long plagued the region. In the new EU member states, there are a number of problems with competitiveness, regional and social inequalities and aging, as a result of which certain social groups (such as the low-skilled and the elderly) have been severely affected by the crisis. It is not just about health disadvantages, but also about measurable present and past economic losses. Immigration from lagging behind regions has continued in recent years, even with exceptionally high economic growth in the area. The urban-rural polarization in the Eastern European region is extremely strong, with the main migration targets being larger cities and capitals and the Western European EU member states. Due to its global nature, the crisis has not been able to break the convergence processes in the region, as developed countries have also been hit by the recession. In 2020, the region's average PPS-based level of income was 78.8% of the EU-27 average. In the 16 years since joining the EU, a closing-up of 17 percentage points could be reached. The biggest improvements have been achieved by Lithuania and Romania in the last decade and a half, improving their income levels by 37 percentage points. Cyprus, Malta, and Slovenia are the three most developed "new" member states, but even they could still not attain the EU-27 average.

The region's economy is sure to "bounce back" this year and return to a growth trajectory thanks to government stimulus packages. Most member states are not expected to reach the level of 2019 GDP yet, but rather in 2022. This also means that the region will deviate from its pre-2020 growth trajectory for a longer time and will be at least 2-3 percentage points behind even next year. Nonetheless, this year's growth numbers will certainly be impressive, mainly due to the low base. If the stimulus packages persist, growth is likely to continue, but at the cost of increased government debt and budget deficits. This can only be overcome in the medium term and carries additional risks in countries that use their own national currency – especially smaller, more open ones. Due to low interest rates worldwide, this region has traditionally been a frequent target for financial speculation, so there is a chance of increased exchange rate volatility, which could put further inflationary pressures on the economies. Central bank communications promise to curb the increase of price levels, and the necessary monetary tightening could affect growth, especially if measures are accompanied by fiscal austerity. Therefore, the rapid growth expected in 2021 and 2022 is likely to subside, and even less robust economic expansion is expected than in the years before 2020.

As a result of the pandemic-induced crisis, the Hungarian economy shrank by 5% in 2020. The deterioration in the foreign trade balance played a decisive role in the decline, which is clearly due to the deterioration in the balance of foreign trade in services. The international economic conditions created by the pandemic worsened the situation of the Hungarian economy primarily through services, especially tourism. To this extent, this crisis differed significantly from the consequences of the international financial crisis of 2008-2010, when inbound tourism did not decrease but even increased slightly. In 2020, travel restrictions severely affected inbound tourism but affected the willingness of the Hungarian population to travel abroad to a lesser extent.

In 2020, the Hungarian general government accumulated a deficit of 8.1% of the GDP, compared to the originally planned deficit of 0.8%. The huge increase was not due to a shortfall in budget revenues due to the crisis, but to a run-off of expenditures. A – smaller – part of these were justified by the procurement of medical equipment due to the epidemic, but most of them can be traced back to individual investment subsidies granted at the discretion of the government. The amended budget for 2021 contains a deficit target of 7.5%, which is not justified by the expected economic developments, as a GDP growth of over 6% is envisaged.

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COVID-19, SUSTAINABILITY AND SOCIO-ECONOMIC DEVELOPMENT RELATED TO COMPETITIVENESS IN HUNGARY

General overview of the fiscal implications of the pandemic

The Covid-19 epidemic that erupted in early 2020 and the resulting economic crisis have prompted governments across the globe to intervene quickly to support troubled companies through various fiscal instruments and to protect workplaces. As early as the end of March, the EU suspended the general government deficit ceiling clause of the Stability and Growth Pact (SGP).

As a result, general government deficits have grown dramatically, breaking the continued consolidation of fiscal positions in the years following the global financial crisis of 2008-10. The EU-27 general government deficit ratio increased from 0.5% in 2019 to 6.9% in 2020, an increase of 6.4 percentage points. The crisis has mainly affected budgets on the expenditure side, with the level of budget expenditure as a share of GDP in EU countries rising by 5-10-12 percentage points in 2020. Revenues fell only as much as GDP did.

As a result of rising deficits, in 2020 the total government debt-to-GDP ratio of the EU-27 increased from 77.5% by the end of 2019 to 90.7%, i.e., by 13.2 percentage points. The increase in the debt ratio was caused on the one hand by the increase in the nominal level of government debt and, on the other hand, by the decrease in GDP in the denominator of the rate. In our study, we calculated the extent to which these two factors contributed to the increase in the debt ratio in each country. For this, a conventional decomposition method was used. The theoretical consideration behind the application of the method is that the component of the increase in the government debt ratio resulting from the decline in GDP can be eliminated within a few years, so this component jeopardizes fiscal sustainability directly only to a lesser degree.

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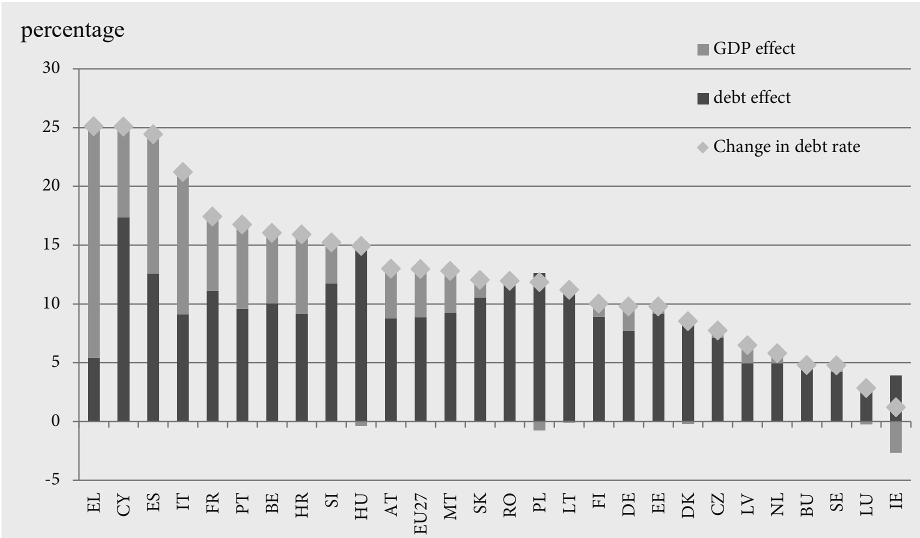
[1] Kopint-Tárki Institute for Economic Research Co. Date of submission: 30 August 2021.

Figure 1

Effect of government debt level changes on the increase of debt ratio (percentage point)



Source: Eurostat, own calculations.

The figure shows that in the countries where the increase in the debt ratio was very significant (Greece, Italy, and Spain), this was mainly due to the decline in GDP. In some countries, however, current-price GDP could even rise, either as a result of economic growth (Ireland) or a GDP deflator that has outpaced GDP volume decline. This has moderated the rise in the government debt ratio. In our study we also separated the volume and price effects of GDP on changes in the debt ratio.

However, higher inflation is a double-edged sword to reduce the debt ratio. Inflationary pressures are already present worldwide (also in Hungary) and are likely to increase further. And rising inflation necessitates monetary measures that raise the cost of financing government debt. Thus, while public expenditure-driven GDP growth (partly due to the rise in the deflator) reduces the debt-to-GDP ratio, higher inflation leads to monetary tightening, which increases the cost of financing government debt. Fiscal and monetary policies need to be balanced on this narrow edge in the near future.

Pandemic-related measures

There was a need for a uniform response in the member states of the European Union to the outbreak of the Covid pandemic in 2020 and the socio-economic consequences of the crisis that followed. By their nature, the responses were mainly aimed at job retention and business support, and member states acted relatively quickly in the early stages of a pandemic. Interventions targeted businesses and employers, as well as workers and self-employed, to varying degrees and order in each country. Most of them used a combination of labour market tools in their defence but retaining and retraining the workforce and preventing sudden unemployment were on the agenda everywhere. Changed working conditions, as well as some form of telework, have necessarily come to the fore due to epidemy-mitigating measures. The uncertainties created by the transitional measures and the lack of lasting and comprehensive legal regulations have led to disputes and labour tensions in several countries.

EU governments have had a dilemma in reconciling the urgency of epidemiological provisions and the need for rapid intervention with the principle of social dialogue and the desirability of consultation with social partners. In countries where the tradition and institutional system of social dialogue has already been established, the dialogue seemed to run more smoothly, even in emergencies. Elsewhere, it was an unexpected situation that required immediate responses and affected a wide range of social groups, which pointed out the institutional shortcomings of social dialogue and the shortcomings of the operation of its channels. Negotiations with the social partners are in their infancy in Hungary as well, and we have seen a weakening of the institutional system in recent years. Under these circumstances, debates on complex and far-reaching issues related to the Covid crisis, such as tackling unemployment or restructuring the labour market, reforming training and support systems, may have become even more difficult. Criticisms from the social partners on some of the planned economic policy and crisis management measures were limited or non-existent, with usually only a mere exchange of information taking place at the consultations. In the field of industrial relations, the Covid epidemic has delayed or weakened collective bargaining and organized action. In the coming period, the strengthening of these institutions would be considered desirable by the social partners for example, in preparation for a possible future crisis.

Macroeconomic competitiveness

At present, there is no professional consensus on when and, most importantly, exactly why Hungary broke away from the forefront of the new EU member states during the convergence process to the EU average. There can be no doubt, that in recent years the Hungarian growth has been rapid and approaching the level of the EU; nevertheless, we can hardly talk about the improvement of competitiveness, and partial development can be observed at most. According to data of the European Commission, calculated on the basis of GDP per capita (in PPS), Hungary is the 21st most developed member state of the 27-member European Union; our real development reached 74% of the EU-27 in 2020.

In our region, in the long run, Hungary, Croatia and Bulgaria broke away from the Baltic states, Slovakia and Poland (the Czech Republic was much more developed than the other Visegrad countries), as the latter group had almost twice the average growth rate with the same base development. If we examine the values only from year 2010, the situation has improved in each country except Croatia, and between 2010 and 2018 we achieved about the same average economic growth in Hungary as other countries in the region due to our real development. However, our lagging behind the Baltic states and Slovakia remains spectacular.

The epidemic has not stalled regional convergence processes, even if there was a severe recession last year, as all EU member states suffered a downturn at the same time. However, the resumption of the economies and the recovery from the recession are no longer "smooth". And much higher inflation than in previous years may slightly undermine catching-up through deteriorating purchasing power parity. Nevertheless, it is unlikely that the Hungarian catching-up will turn into a backlog, but a temporary loss of pace may occur. As macroeconomic equilibrium indicators have deteriorated significantly in the EU due to fiscal packages, the success of catching-up in the medium term depends primarily on the competitiveness of the economic agents.

Macroeconomic competitiveness can be assessed in the classical sense through price and wage-based indicators. The RE(E)R [real- (effective) exchange rate – R(E)ER] shows the external price-based competitiveness of countries vis-à-vis another competitor or group of competitors (effective RER – REER) by taking into account the different price levels. REER is a convenient tool in the hands of economic policy, as it can achieve spectacular results in the short term without improving productivity. However, the exchange rate-based approach is as simple as it is dangerous; it is detrimental to the economy in the long run, putting significant inflationary pressure on it. Compared to the base year of 2004, only the Hungarian real exchange rate appreciated against the regional non-euro competitors (Czechia, Poland, and Romania) during the last narrow decade and a half, and the foreign trade competitiveness of the other countries has deteriorated definitely. In Hungary, this period was characterized by export expansion and a net foreign trade surplus, as well as a surplus in the current account, which was accompanied by a large inflow of foreign direct investment.

Another measure is the unit labour cost (ULC), which can be calculated per employee or per hour worked. Unit labour costs are closely linked to productivity and can therefore be interpreted as compensation for workers for economic growth, and consequently ULC shows the cost side of competitiveness as opposed to the real effective exchange rate, which approaches the problem from the price side. Unlike REER, short-term results cannot be achieved through ULC, as a positive change in the indicator can be achieved from two sides: either the added value produced increases at constant wages (which is the same as the improvement in productivity), or unchanged value is created at lower wages. Compared to the base year of 2004, the Czech Republic and Slovakia have lost the most in their wage competitiveness in the region, but it should not be forgotten that the base effect is strong here and the differences in unit labour costs have now narrowed sharply in the region.

Hungary has certainly had an advantage over the past 16 years, as the weakening exchange rate and curbed inflation together have continuously improved the country's international price competitiveness, which was reflected in the rise in net exports. In addition, cost-based competitiveness has moved in a positive direction, strengthening the country's relative position in the region vis-à-vis Slovakia and the Czech Republic. Although Romanian labour costs have improved a lot in terms of competitiveness, it should not be forgotten that in their case the base was extremely low.

Thus, for Hungary, both macroeconomic competitiveness advantages have been permanent in the last decade, and the fiscal austerity following the global economic crisis has also kept public finances in balance. Despite all this, the country's real development has improved only slightly.

The financial situation of the Hungarian corporate sector and its crisis resilience before the pandemic

At the outset of the epidemic, a number of domestic and international professional organizations drew the attention of governments to the fact that economies were threatened by a wave of bankruptcies in the absence of state subsidies, especially in sectors directly affected by the epidemic (such as tourism). According to data of the Central Statistical Office, about 55,000 companies went into liquidation in 2020 for some reason, but it should not be forgotten that the CSO considers the last full year of the company to be the year of liquidation. That is, companies that closed down in the spring of 2020 filed their last full-year tax return in 2019. This year, about 77,000 companies went out of business, which is about 20,000 companies more than the average of previous years. And the vast majority of these were micro and small businesses, and last year's low termination rate is presumably due to fiscal subsidies and the low interest rate environment.

In Hungary, the consolidated liabilities of non-financial corporations also increased in 2020, in line with the trends of previous years. Although less significant due to its low weight, the extremely rapid growth in the stock of debt securities (such as bonds) is striking, with the stocks in question more than doubling in one year. At present, its value is HUF 1,600 billion, while in before 2020 it amounted to around HUF 450 billion. Loan growth was 12% in one year, broadly in line with previous years. The difference, however, is that companies are clearly starting to shift from short-term loans to long-term ones. All this was most likely helped by the record low global interest rates and the different constructs that made the development of lending rates more or less predictable for companies.

As most of the companies in distress received substantial help, the proportion of companies that went out of business during the crisis was much lower. Due to the favourable interest rate environment, according to MNB data, debt stocks did not increase dramatically in Hungary in 2020; however, the variation per company may undoubtedly be large, therefore it can be rightly assumed that, just as in previous years, approx. 10-15% of the domestic enterprises is on the verge of cessation, but the subsidies keep them alive for now.

The companies in the tourism sector, which was the most affected by the crisis, were in a relatively favourable position at the time when restrictions were introduced. Although the loss of revenue made it logically impossible to finance even the fixed costs, the vast majority of companies had some reserves to finance the fixed costs in the short term. State aid, which provided revenue to companies, and a credit moratorium have certainly significantly reduced the risk of bankruptcy in the sector.

The phasing out of government assistance and the deterioration of the interest rate environment will certainly create a difficult situation, and the currently available data do not allow us to determine the number of companies potentially exposed to the increased risk of bankruptcy in this situation. However, a significant wave of bankruptcies is not likely to threaten as long as general economic conditions are favourable. If fiscal tightening were to take place due to increased public debt, accompanied by a tighter monetary policy, as well as a reduction in government subsidies, there would certainly be a higher number of corporate closures compared to the trend of previous years.

Changes in global value chains

The shutdowns of February 2020 have shed more light than ever before on the extent of interdependencies in the global economy created by global value chains. In this constellation, we examined the global exposures of Hungary with a novel method. A high degree of demand-side exposure to the German economy has already been revealed in a number of previous analyses. The main reason for this is the fact, that Germany is the largest consumer of Hungarian output among our partners, amounting to about 3 percent, which results in a direct elasticity (output exposure) of 0.03. However, the composition of our exports to Germany is dominated by products with a lower added value ratio, thus the dependence of Hungarian GDP on German end-use is slightly lower than its output. In the second place is the USA, while is Austria third; and this order has not changed over the years.

More than half of the impact of the decline in German final demand is felt directly through Hungarian exports, and to a significant extent through the spill-over effects within the Hungarian economy, and (approximately 40 percent) through indirect channels of German domestic consumption to Hungary. In contrast, Hungary's direct relationship with US end-use is weaker. On the other hand, in terms of indirect effects, several countries with which Hungary has direct or indirect significant relations play a larger role. In addition to orders from the United States to Hungary, the indirect effects through Germany and Mexico are also more significant here.

In the sectoral dimension, Hungary is sensitive both directly and indirectly to the final demand for motor vehicles in other countries through the vehicle industry, which sector plays a dominant role in the Hungarian economy. Due to their role as regional logistics and in many cases global business service centres, we are also significantly dependent on the needs for transportation, warehousing and other business services.

Approached from another direction, the Hungarian economy is mostly dependent on the Russian energy sector, although over time this dependence clearly shows a decreasing trend. Hungary's dependence on the Netherlands and Poland (also through the energy sector) is also significant. In terms of direct effects, German machinery and motor vehicle production stand out, due to the fact that our investments rely on them in the largest proportion of all foreign partner country-sectors – and even partner countries (4-4.5 and 2 percent, respectively). In terms of indirect exposure, the Russian, Polish and Dutch mining, energy, and non-energy products play a dominant role.

Our new method takes into account the propagation of value chain disruptions in both directions, as well as the destructive effects on both the demand and supply sides. Both the analysis presented now and the experience of the last year and a half have highlighted that the main risks are supply-side effects, and more attention needs to be paid to the diversification of the supplier side (requiring a different interpretation from the sales structure). This can be an effective means of controlling and reducing our dependence on global value chains, rather than diverting them from international value chains, striving for excessive self-sufficiency and confinement, which are intensifying in several places as a result of the coronavirus crisis.

Digitization and competitiveness

Through the Covid-19 epidemic, apart from all its other consequences, the world has faced a huge test environment for digitization. Professional E-government systems have been tested, from health care to education and law enforcement to the management of records. In all countries, including Hungary, it has become clear what works (even under heavy use), where bottlenecks were, where firefighting interventions can help temporarily and where effective intervention is needed as soon as possible. It is already obvious that once the epidemic has subsided, one should not return to the old, “well-proven” methods.

As the epidemic has forced many jobs and educational institutions into the online space, the state of the communication infrastructure and the reliability of its services have become of paramount importance, as has the ability to access and transmit data.

The epidemic has forced a large number of individuals and companies to “digital transition” who had not previously been at home in this area. To this end, digital security, the protection of personal data and consumer protection must also be strengthened. Recently, taking advantage of the mass emergence of less experienced users, the spread of phishing and Internet scams has become almost an epidemic itself.

In order to forge virtue from need in recovering from the shock caused by the pandemic, it is imperative that we follow the guidelines of the OECD and those of the EU described in our study. The latter’s “Digital Compass by 2030” programme is particularly important, not in the least because a number of EU budgetary instruments will support the investment needed for the digital transition, including cohesion programmes, the Technical Assistance Instrument and the Digital Europe programme. The agreement of the co-legislators that at least 20% of the Recovery and Resilience Facility should support the digital transition will help strengthen this reform agenda and provide a resource to build a solid foundation for Europe’s digital decade[2].

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[2] https://eur-lex.europa.eu/resource.html?uri=cellar:12e835e2-81af-11eb-9ac9-01aa75ed71a1.0012.02/DOC_1&format=PDF

Despite the fact that Hungary has a strategy and programmes for almost all segments of digitization[3], we can only see sporadic progress in their implementation. Among the professional systems that are the custodians of development, education faces the biggest challenge. What we call digital education in Hungary today is only a complementary action to provoke personal contacts. Its tools, content services, the motivation and preparedness of the participants are still very far from the potential of digital education for independent thinking and problem solving.

There is also a need to change the dimension of so-called lifelong learning outside the school system. As a result of the pandemic, it has become clear to many that they do not have a chance to make a living in their original profession – and without gaining new knowledge, it is unlikely even in the future to have one. Digital solutions should play an important role in adult education, further training, retraining of those who lose their jobs in terms of tools and in terms of the knowledge to be targeted. We are in the 24th hour to start implementing the digital education ecosystem for all generations, which the EU is pushing for, including the acquisition and continuous expansion of digital skills.

According to the Digital Economy and Society Development Indicator (DESI), in 2020 Hungary ranked only 21st among the EU member states. On the other hand, it is good that we are in the best position with regard to network infrastructure, as the development of this area requires the most financial expenditure. On the other hand, it is a great waste that we are listed at the very end of the rankings related to the reusability of data collected by public funds, keeping in mind, that it requires a government decision and scarcely any additional funds. It is well known that data is the most important raw material in the world of digitization. In addition, this material does not wear out or gets destroyed during use but can be recycled for a variety of purposes. In this recycling, Hungary has so far proved to be a "poor in raw materials" country as well.

Green economy and competitiveness

In the shadow of the looming climate crisis, it is not surprising that progress towards climate neutrality will be a priority within the Next Generation EU programme package, including the Recovery and Resilience Facility (RRF), which responds to the economic effects of the coronavirus epidemic. The economic dimension of this, above all, is the acceleration of the development of new, environmentally friendly "vanguard" industries.

In July this year, a package of EU proposals to speed up the green transition was launched. The goal is to reduce greenhouse gas emissions by 2030 by 55%. To this end, it would increase the pace of emission reductions in both ETS and non-ETS sectors, set a stricter target for the share of renewables in the energy mix, and set more ambitious targets for improving energy

[3] https://digitalisjoletprogram.hu

efficiency. Measures such as the reform of energy taxes or, from 2026, the introduction of a carbon tariff would also contribute to all this.

If these proposals are adopted, it will be even more urgent to develop “green industries” as soon as possible. At the same time, environmental organizations say that the pace of decarbonization in the EU will not be fast enough even with the adoption of this package of proposals, and that stricter targets will not be sufficiently met.

The main reason for this is that in the eyes of the EU not only the competitive returns offered by new green industries but also the preservation of the competitiveness (profitability) of companies engaged in “old” polluting industrial activities are in focus as well. Therefore, EU climate policy has so far treated the industrial sector with relatively gentle hands, and new proposals in this area promise only a gradual change.

In the light of this, the EU’s approach to the green transition does not deviate drastically and qualitatively, from the attitude of the new Member States in Eastern Europe. At the same time, in case of the latter, perhaps even more striking is the simultaneous effort to reap the potential economic benefits of the EU’s green transition programme and to curb, as far as possible, the decommissioning of polluting activities in order to minimize the associated economic/social costs. Thus, for example, coal-producing countries seek to postpone the date of coal removal, sometimes compensating by increasing the weight of other fossil fuels as a “bridging” energy source. In some countries, the phasing out of state support for fossil fuels is moving into an uncertain future.

The Hungarian approach to the green transition is also marked by the desire to make full use of the economic development aspect of the European Green Deal and by the conservative line: for example, the Hungarian Government supported the position of German automotive companies against rapidly tightening automobile emission standards.

It is not yet clear how all this will change if the EU adopts the more ambitious action plan presented in July this year. In any case, the Hungarian Government criticizes some points in the package, partly in line with industrial interests, although there is no frontal rejection. Behind the relative calm, there seems to be an expectation that, in addition to maintaining a strong reliance on nuclear energy and expanding solar capacity, the new 2030 targets can be met without major shocks. There has been much sharper criticism of the new targets from the Polish Government’s side.

Magdolna Csath[1]

THE EMERGENCE OF THE CORONAVIRUS EPIDEMIC, SUSTAINABILITY AND SOCIO-ECONOMIC DEVELOPMENT IN COMPETITIVENESS IN HUNGARY

The effects of the pandemic have shaken not only economies but also societies. We could also say that they have been shaken up, made aware of their vulnerabilities, the weak points of their resilience to crises. In midst of the epidemic, it has also become apparent that the world economy is undergoing a significant transformation. An accelerating technological and knowledge revolution is taking place, so countries need to simultaneously achieve results in at least three areas. Firstly, they must deal with the effects of the pandemic and try to repair the damage caused to the economy. Equally important, however, is that in the meantime decisions be made that will ensure the country's long-term success in a changing environment the transparency of what is increasingly difficult to maintain. This requires an objective diagnosis, the identification of strengths and weaknesses and a clear vision, as well as determining in what a country wants to compete in the future. When developing a competitive strategy, it is advisable to build on existing strengths so that the resulting opportunities can be exploited in an agile, flexible way.

These decisions must be taken in a context characterized by a high degree of instability, accelerating change, and increasing uncertainty. At the same time, there are problems caused by climate change, changes in the geopolitical situation and international competitive positions, as well as increased levels of deficits and indebtedness of countries. In addition, technological change, and the urgent task of the transition to digital economy have a significant impact on both the economy and society. We are aware that technological development is continuous, and its pace is accelerating. The current one, also known as the Fourth Industrial Revolution, has not just begun, but has accelerated noticeably during the pandemic. Its main features are digitization, robotization, and the multidirectional use of big data. If a country wants to be able to engage in change in these areas, it needs, on the one hand, investments that are likely to pay off only in the longer term. On the other hand, there is a need for corporate and social receptivity that allows its use, an absorption capacity, as well as the knowledge that ensures its development and a change in mentality. The latter, for example, means that inputs and returns must be strictly compared in order to manage all the resources of a country as efficiently as possible. Therefore, emphasizing how much the country spends on various investments is beyond the point, as the real question is, how much

[1] Leadership Ltd. Date of submission: 15 September 2021.

value it creates with the expenditures, what positive effect and change it achieves. According to Eurostat and the Central Statistical Office of Hungary, in 2019 Hungary spent 1.5%[2] of its GDP on research and development, which put the country on the 12th place in the EU ranking, but in terms of results and impacts, it earned only the 22nd place, a much worse position.[3] According to CSO data, only 1.08% of all employees work in research and development, the share of innovative companies is 28.7% (which earns the 25th place in the EU), while the EU average is 50.3%,[4] and the share of R&D investment in total investment in the national economy in 2020 was only 0.82%, while in 2019 it was still 0.93%. A similar contradiction is highlighted by the fact that while Hungary is in a leading position in the creation of digital infrastructure in the EU, for example, we are in the 7th place in terms of broadband internet access and the 3G network is in the 3rd place, the Digital Economy and Society Index (DESI) in terms of value, which also measures the business, social and state prevalence of use, only the 21st place is ours. One of the reasons for this is that only 25% of the Hungarian population has at least basic digital skills. The value is average and regional and age differences are significant. For example, only 8% of the 55-74 age group have a basic digital knowledge, compared to the EU average of 12%. The difference between the village and the city is also significant (38 and 60%, respectively). The EU average is 48-62%, which means that the village-city digital knowledge gap is 22 percentage points (but only 14 percentage points in the EU as a whole).[5]

The above examples reveal that we do not necessarily face problems regarding the size of the expenditures; rather, their efficiency and effectiveness are weak. One of the important sources of future competitiveness will be the efficient use of resources, which must be reflected in the creation of as much new value as possible. Another condition for successful involvement in change is to increase the proportion of sectors that produce as much new value as possible within the economic structure, and the emergence of new sectors and new companies in the economy that enable the use of new opportunities created by the changes. Climate change offers not only problems but also new opportunities. The realization of the circular economy opens innovation opportunities for new companies and new sectors to create significant new values. According to EU analyses, Hungary is lagging behind in this area. We are ranked 25th in terms of the proportion of value added created in the so-called green economy (as a share of the total added value), while Austria, often referred to as a "target country", ranks 3rd. The study analyses in detail how much new added value is created per employee in certain sectors of the Hungarian economy. In the so-called high-tech sectors, such as pharmaceuticals or info-communications, this value is much higher than, for example, the manufacturing average. However, the proportion of these sectors is low within

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[2] The figure for 2020 is already 1.6%.

[3] EU Innovation Scoreboard 2021.

[4] These data are based on surveys for the period 2016-2018.

[5] Eurostat data.

the economy. The new sectors of the future, which are related to healthcare, the military industry, data processing, and services that drive artificial intelligence, are likely to offer significant new value. However, to seize the opportunities, we need to invest effectively not only in technology, but also in the knowledge and skills essential for development and operation.

Hungary is significantly lagging behind, especially in the field of adult education, which would be necessary for retraining and further training. According to 2020 Eurostat data, in the EU only 5.1% of the 25-64 age group participated in any further training in the four weeks preceding the survey.[6] The overall EU average is 9.2%, but the figures for the most competitive countries, such as Sweden, Finland and Denmark, are far better (28.6%, 27.3% and 20.0% respectively).

One of the most important data for the modernization of the economic structure and the successful integration into the economy of the future is the number of graduates in the technical and scientific fields. According to Eurostat data for 2019, the number of people with a tertiary education in the technical and scientific field per thousand people in the 20-29 age group is 12.3 in Hungary. The German figure is 24.4, the Austrian 23.4 and the EU average is 20.8. We may also want to check out the data for the other V4 countries. The Czech value is 16.1, the Polish 20.1, the Slovak 12.9, i.e., Hungary is in the last place among the V4 countries. Within this data, the proportion of those with a doctoral degree is particularly low in Hungary, 0.3. This value is 1.3 in Germany, 0.9 in Austria and 0.8 on the EU average. Within V4, the Czech and Slovak values are better, 1.0 and 0.8, and the Polish is the same as the Hungarian one. These data are warning that there are not enough high-skilled young professionals to run new technologies successfully.

The study analyses the relationship between innovation and competitiveness in detail, pointing out that without improving the conditions for innovation, competitiveness cannot be improved in the long run. Among the innovation results, we need to improve our position on the EU Innovation Scoreboard, which would be helped by an increase in the number of patents filed, an increase in the proportion of innovative companies, the network of innovators, the spread of ecosystems and operational efficiency. At the same time, their combined effect would reduce the aforementioned gap between expenditure and the results they achieve. The most important area of innovation is the use of digital solutions, the possibilities of artificial intelligence, which also contribute to the improvement of productivity. Therefore, our already mentioned data, reflecting the low level of the EU's digital preparedness, are striking. In connection with this, rapid changes and mass further training are needed.

According to Eurostat, we are not doing well in terms of how companies use artificial intelligence (AI) either. Only 3% of those who employ at least ten people, use some form of AI solution. Only 16.5% of large companies use "big data" analysis methods, which are

[6] It should be noted that this data also includes participants in any kind of further training, such as "fire safety training".

important for changing the business model of companies and help organizational and market innovations based on data analysis. For example, the German value is 34, and the Czech value is 24%. This is clearly an obstacle to improving the productivity of firms.

Improving competitiveness in the longer term is unthinkable without taking into account sustainability requirements. Therefore, plans to improve competitiveness must take into account that the constant expansion of the economy is not a sufficient result of competitiveness. Only solutions for economic growth that do not damage other elements of national, natural, human, and social wealth can be accepted. It is therefore advisable to carry out environmental, human, and social impact assessments for all investments aimed at economic growth. Economic growth is good only if it also leads to an increase in total national wealth. In this context, the cited EU study draws particular attention to the importance of improving health, raising education standards, increasing energy and material efficiency, and creating an inclusive and sustainable economy with good jobs. All in all, we must focus on the fact that if we fail to take advantage of the opportunities offered by technological and market changes while combatting our weaknesses in the level of knowledge and innovation, we may be caught by a development and modernization trap. It must be emphasized that we should aim avoiding the middle-income trap and not the middle-revenues trap. In addition to smart economic growth, this also requires an increase in national wealth, social wellbeing and an improvement in the natural environment. To this end, quality solutions for improving competitiveness must be sought: increasing the proportion of "sectors of the future" and value-added production in the economy in general and focusing on creating a crisis-proof economy and society based on knowledge, innovation, and resilience. This requires a long-term analysis of opportunities and threats, an outline of scenarios, possible visions, and an objective analysis of one's own strengths and capabilities. Table 1 summarizes the opportunities and threats, as well as strengths and weaknesses, for improving competitiveness.

Table 1
SWOT analysis

Opportunities	Threats
- joining the digital economy - establishment of new industries - creation of new, innovative companies - exploiting the potential for innovation and business creation inherent in the development of a circular economy - better utilization of domestic knowledge - moving up on value chains - making better use of the potential of the SME sector - creating successful ecosystems by linking companies and universities - efficiency gains and shrinking bureaucracy resulting from the development of civil service - involvement in EU development programmes - regional opportunities, expanding economic cooperation between V4s - seizing the opportunities offered by expanding international markets	- further widening of regional disparities in economic and social development - the widening gap between the performance of the SME sector and large companies - the growing role of large companies and specific sectors, increasing rigidity of the economic structure - increasing crisis exposure due to the dominance of certain sectors - increasing brain drain among the best professionals in the absence of sufficiently creative jobs - low level of investment in human wealth, health, knowledge - lack of a comprehensive vision and development strategy - the chance of being trapped in middle-income trap - future austerity constraints caused by increased deficits and debt
Strengths	**Weaknesses**
- advanced digital infrastructure - stable economic data (growth, investment, employment) - Eastern market expansion - utilization of available EU development funds - benefits of EU membership - the benefits of V4 connections - existing high value-added sectors (pharmaceuticals, info-communications) - entrepreneurial traditions - the benefits of geographical location - cultural endowments in terms of tourism - arable land and agricultural crops can still be considered good - high-tech research programmes - strong research traditions	- low proportion of people with tertiary education - low proportion of participants in adult education - low proportion of graduates in science and technology - the low prevalence of digital and AI solutions in both society and companies - high proportion of assembly activities, low proportion of innovative companies - low proportion of jobs requiring innovation and creativity - low levels of productivity and efficiency - strong organizational hierarchies, avoiding uncertainty - weak social cohesion - poor general health, low life expectancy, shrinking population

Source: own edition.

Three possible scenarios can be outlined for the development strategies that can be chosen on the basis of the SWOT analysis, depending on how well the opportunities are exploited by building on the strong points, reinforcing the weak points and avoiding threats:

1. continuous socio-economic development, accelerating socio-economic catching-up with the developed world, avoiding the development trap;

2. a development path of an adaptive nature, the gap between the socio-economic data of the developed countries and the Hungarian data is not narrowing;

3. weak points are gaining strength, failure to take advantage of strong points, missing opportunities, failure to evade emergencies, falling into the trap of medium development.

Obviously, the first scenario would be the most favourable. But to choose this a conscious and long-term development plan is needed, that enriches not only the national economic wealth, but the whole range of it, a plan which could be achieved most efficiently by involving and winning over society for this cause.

Tamás Bakó – István Kónya[1]

COMPETITIVENESS OF SMALL AND MEDIUM ENTERPRISES IN HUNGARY: THE ROLE OF HUMAN CAPITAL ACCUMULATION

Introduction

In today's knowledge-based economy productivity is a key determinant of competitiveness, both for large companies and small and medium-sized enterprises. According to the research by MNB [2020], the labour productivity of Hungarian SMEs is 46.5 percent compared to the average labour productivity in the EU, and although productivity has increased in all size categories of the SME segment in recent years, it is still only half of that of large companies. Productivity is affected by a number of factors – e.g. economies of scale, level of capital investment, openness of the economy, human skills – the latter of which we will address in this study.

In the first part of the research, we used results of "Report on the Vocational Training Activities of Companies" conducted by the Central Statistical Office of Hungary every five years from 2005, in order to reveal the main characteristics of the training activities of companies. In addition to simple descriptive statistics, we estimated regression models to determine the factors that may affect the willingness of firms to train, both at the extensive and intensive margins. We also looked at what factors influence whether a company receives training support.

In the second part of the research, we built a macro model in which, in addition to corporate heterogeneity, training activity also appears. The model was quantified with the help of Hungarian data, and then simulation exercises were performed with it. Some of them examined the change in productivity and the increase in training efficiency. The main results of the research are briefly described below.

Some descriptive statistics on corporate training

One of the most important indicators of corporate human capital accumulation is the proportion of companies that provide some form of organized professional training – external or internal – to their employees. During the period under review, the share of firms that provided training to their employees decreased by 3 percentage points, although it should be mentioned that in 2010 the share of firms providing training was 6 percentage

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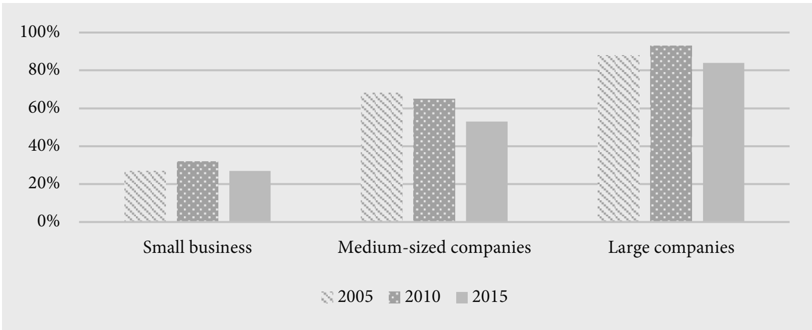
[1] Institute of Economics, Centre for Economic and Regional Studies. Date of submission: 30 September 2021.

points higher than in 2015. Consistent with international research, we found that small and medium-sized firms provide a much lower proportion of training to their employees than large firms. (See Figure 1.)

Figure 1
Proportion of companies providing at least one type of training

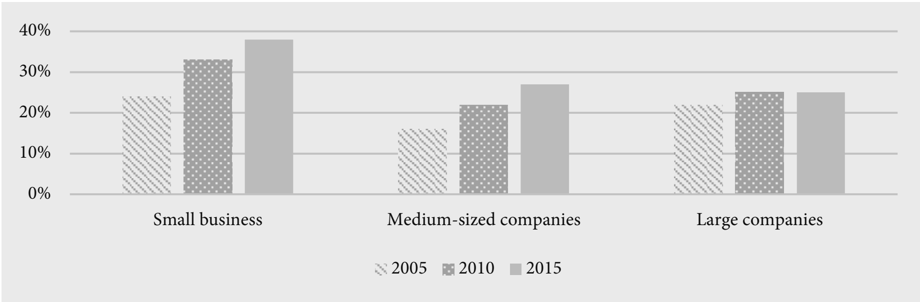


Source: Own calculation based on the CSO's "Report on the Vocational Training Activities of Companies"

Regarding companies with more than 10 employees in 2015, 32% of companies provided external or internal vocational training, which means a decrease of 3 percentage points compared to 2005. During the period under review (2005-2015), the share of small enterprises providing training stagnated at 27%, while the share of medium-sized enterprises providing training decreased by 14.3 percentage points and the share of large enterprises providing training by 3.3 percentage points. In international comparison, the domestic small and medium sized enterprises lags far behind, given that 79% of Austrian small enterprises, 71% of Dutch small enterprises, 59.1% of Slovak small enterprises and 68.6% of Slovenian small enterprises -provide organized vocational training for their employees, while the EU average is 56%. Hungarian medium-sized companies also train a significantly lower proportion of their employees (53%) than their competitors in the region: 92% of Austrian medium-sized companies, 90% of Slovenian medium-sized companies, 78% of Slovak medium-sized companies provide training to their employees, while the EU average is 75.7%.

In addition to the proportion of companies providing training, the intensive margin is also interesting; one of the important measures of which is the proportion of participants in training in relation to the total number of employees. In terms of the entire corporate sector, in 2005 the average number of participants in the training was 22% of the total number of employees, and in 2015 it was already 35%. At the same time, behind the average increase, which can be considered favourable, we can observe relatively significant growth rate differences according to company size categories. (See Figure 2.)

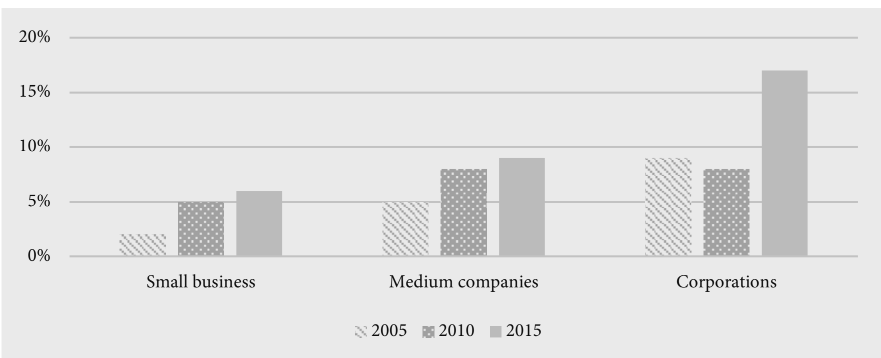
Figure 2
Proportion of participants in training compared to the total number of employees



Source: Own calculation based on the CSO's "Report on the Vocational Training Activities of Companies"

According to our data, the proportion of participants in training compared to the total number of employees is the highest among small companies and increased steadily by a total of 14 percentage points between 2005 and 2015, so that it rose from 24% in 2005 to 38% in 2015. In the case of medium-sized companies, the growth rate is already slightly lower (11 percentage points), while only 3 percentage points more employees of large companies participated in external or internal training. In order to increase the proportion of companies providing training and the number of participants in training, the respective governments launched various programmes supporting corporate training during the period under review. On the positive side, the proportion of firms receiving training support increased in all firm size categories between 2005 and 2015. (See Figure 3.)

Figure 3.
Proportion of companies receiving training support



Source: Own calculation based on the CSO's "Report on the Vocational Training Activities of Companies"

While in the case of small and medium-sized companies the growth was 5 percentage points, in the case of large companies we can observe an increase of 8 percentage points. Although the training expenditure per employee of large companies was only 29 percent higher in 2015 compared to medium-sized companies, the proportion of large companies receiving training support was almost double of that of medium-sized companies receiving such support.

Major regression results

Using the latest data (2015 wave of data collection), we found that firm size has a positive effect on the willingness of firms to train; the larger a firm is, the more likely it is to provide at least one type of training (external or internal) to its employees, and this relationship then is also true if we consider only the internal or only the external trainings – holding all other factors constant. Based on our results, the larger a company is, the more likely it is to receive training support. Unsurprisingly, training support has a significant positive effect at both the extensive and intensive margins. It is also worth mentioning that the size of the company negatively affects the proportion of paid hours worked within all working hours, i.e. the larger a company, the smaller the proportion of employees who spend their working time training.

Sectoral affiliation is not a determining factor in whether a company provides training to its employees or not, or whether it receives training support or not. Labour costs per working hour have a positive effect on the probability of providing training, but affects negatively the existence of training support, and there is no significant effect on the proportion of working hours paid for training. An important result is that lack of knowledge of skills needs significantly reduces the likelihood that a firm will receive training support, which is obviously due to the fact that these firms are unlikely to even apply for training support.

Description of the macro model

The logic of the macroeconomic model follows Kónya's [2020] description, which assumed heterogeneous productivity and endogenous market entry in the SME sector. In this approach, it was possible to examine how SMEs become suppliers of into multinational companies and, through this, the development of average productivity. In the present analysis, we basically use the Kónya [2020] model, partly expanding it to include human capital and on-the-job training, and partly simplifying it with a more limited representation of firm-level heterogeneity. The reason for the latter is that the issues to be examined do not require the endogeneity of productivity, while is is enough to take into account the heterogeneity of the SME sector in simpler terms.

In the model economy, we are presenting three production sectors: large companies, medium and small companies supplying them, and SMEs producing only for the domestic market. Large companies ("multinationals") sell both on the domestic market and on the export market. For simplicity, we assume that the only production input is labour. In the SME sector producing for the domestic market, this can be used directly ("unskilled labour"), while in the large enterprise and supplier sectors there is a need to train workers ("skilled labour"). We also disregard differences in general qualifications (acquired through education): skills development can only take place within companies.

Model simulations

We use the statistics seen in the first part as motivation, according to which companies in Hungary devote relatively few resources to training, and as a result, specific human capital at work is presumably lower than desired. This is especially true for small and medium-sized businesses. Because in our model small firms do not provide on-the-job training, in the analysis we focus primarily on suppliers, medium-sized firms. Among the statistics examined, we present the production of the sectors, the welfare-relevant "real" GDP (which is equal to the real wage), and the level of human capital in the supplier and large enterprise sectors. In each case, the percentage change measured for the base case is plotted, since the units of measure of the base case have no special economic meaning. The results are summarized in Table 1.

Table 1.
Results of model simulations (% change from baseline)

	(a)	(b)	(c)	(d)	(e)	(f)
Real GDP	2.70	8.31	0.95	0.99	7.40	1.96
Large companies' production	5.83	0.00	2.04	10.00	-4.63	1.50
Supplier production	5.83	0.00	2.04	10.00	-4.63	1.50
Small business production	0.00	16.67	0.00	-9.30	5.88	-1.91
Large companies' product consumption	5.68	0.00	1.99	9.71	9.05	6.29
Small business product consumption	0.00	16.67	0.00	-9.30	5.88	-1.91
Large companies' employment	5.83	0.00	2.04	10.00	-4.63	1.50
Supplier employment	-11.81	0.00	-4.13	10.00	-4.63	1.50
Tax revenue	-	-	-	-	-13.99	0.00

(a) Productivity of suppliers reaches the level of multinationals
(b) The productivity of small businesses reaches that of suppliers
(c) The training efficiency of suppliers reaches the level of multinationals
(d) The weight of the supplier sector increases by 10 percentage points
(e) Personal income tax will be reduced from 15% to 10%
(f) Multinationals' support financed by PIT increase

Source: own calculations.

Supplier productivity

The first issue we examine with the help of the model is the productivity of suppliers. As this lags behind large firms by default, we look at the impact on the main macroeconomic variables of supplier productivity reaching that of large companies. The increase in supplier productivity has a positive effect on GDP. We assume that the efficiency of the sector will increase by 20%. As a result, that GDP will increase by almost 8%. More productive suppliers are able to offer their products cheaper to large companies, so production of the latter is also increasing. The change will not affect the domestic SME sector, whose production will not change. Although real income is rising, this is entirely reflected in the consumption of products of multinationals. This is a very significant increase of around 17%, the main reason for which is that the product has become cheaper.

Productivity growth of domestic SMEs

In the second case, we look at how the increase in productivity of SMEs producing for the domestic market affects the macro economy. Here, we assume that the productivity of SMEs producing for the domestic market reaches the productivity level of suppliers. According to the simulation, productivity growth is slightly lower than in the previous scenario (around 17%) and GDP growth is slightly higher. This is because the production (and employment) of SMEs operating in the domestic market is higher than that of suppliers. If a substantial increase in efficiency is achieved in this sector, the performance of the Hungarian economy would improve significantly.

Training efficiency at suppliers

Our third case focuses on how increasing training efficiency in the supplier sector would affect macro variables. Perhaps this issue is most directly related to our main topic, the role of corporate training and human capital in the national economy. In the study we assume that the training efficiency of the supplier sector rises to the level of large companies. According to our results, GDP will increase by almost three percent, which means that the increase in human capital from suppliers will have a significant impact. The production of suppliers and large companies is also rising, the latter because they have cheaper access to domestic intermediates. The increase in consumption again means rising demand for multinationals' products. An obvious way to improve the training efficiency of suppliers is to do it within the large companies associated with them. This option particularly enhances the role of multinational companies in the domestic economy, insofar as these companies also carry out training activities towards their supply chains. Although the power of policy to influence these activities is limites, support for foreign capital investment should also take into account the extent to which the newly attracted multinational will spend to train suppliers' employees.

Budgetary implications

In the following we present two simulations with budgetary implications. First, let us look at how reducing personal income tax (PIT) would affect the way the economy works. In the simulation, we examine what happens when the PIT rate is reduced from 15% to 10%. As a result of the tax cuts, GDP will rise. The increase is due to the expansion of the domestic SME sector, while the performance of the other two sectors is declining. As PIT is a tax on labor, the sector that uses labor more intesively is the main beneficiary of the reduction. As the production of multinationals (and thus indirectly, suppliers) also requires imported intermediates; the cost reduction there is lower.

Although GDP growth is positive, it cannot fully offset the loss of tax revenues, which are declining significantly. So there is no "free lunch": a further reduction in the low tax rate will boost the economy, but at the cost of lost tax revenues. The economy is on the upwardly curving section of the so-called "Laffer curve" (Saez–Slemrod–Giertz [2012]). With a much higher tax rate, a tax cut could be self-financing: if the PIT rate were reduced from 60% to 55%, the budgetary impact would be positive.

In the other budget simulation, we look at how support for the multinational-sector affects the economy and the budget balance. One justification for this is the spread of knowledge and the positive impact on the labour market. These effects appear in our model, so the question can be analysed in detail. Let us assume the multinational sector receives a 10% employment subsidy, i.e. the wage paid by firms (1-s)w, where s is the rate of subsidy. In evaluating the policy, we are asking whether the subsidy given to large companies is "paying off". This can be quantified in several ways; we choose the following method. Assume that the subsidy is implemented in a budget-neutral way, i.e. it is financed by a tax increase in the budget. Our question is what happens to GDP as a result of this combination. We take the 15% PIT rate as a starting point, i.e. we are looking for the (higher) tax rate at which the 10% subsidy is budget neutral. According to our calculations, this higher tax rate is 16.62%, so a relatively small increase of 1.62 percentage points in PIT is needed to compensate for the subsidy. Our main conclusion is that the combination of a budget-neutral wage subsidy and a tax increase will lead to real GDP growth. According to the simulation, the 10% wage subsidy and the related tax increase will increase GDP by 2% overall. This is due to industry restructuring: labour flows from the domestic, lower-productivity and less human-capital intensive SME sector to the large enterprise and supplier sectors. As a result, aggregate productivity and thus GDP will increase. This is, of course, not a general statement, but applies to the given initial tax level and the assumed subsidy rate. In any case, it is an interesting conclusion that the welfare and GDP effects of sectoral wage subsidies financed by moderate tax increases can also be positive.

Summary

One of the key factors in the competitiveness of companies is the level of human capital of employees. If we want to understand why small and medium-sized enterprises in Western

Europe are more productive and competitive, it is essential to explore the factors that influence the extent to which vocational training is provided, what plays a key role in the accumulation of human capital in companies. Based on our regression results, we can say that small and medium-sized firms show less willingness to train their employees compared to large firms. One of the important reasons for this is the application of inadequate human resource management strategies: there is no person or organization responsible for training; they do not know enough about future training needs. Furthermore, we found that the higher the per capita labour cost, the more likely a company is to provide training to its employees – keeping all other factors unchanged. Based on our results, larger companies are more likely to receive training support. Training grants are effective at both the extensive and intensive borders.

In the last chapter of the study, we built a macro model in which, in addition to corporate heterogeneity, training activity also appears. The model was quantified with the help of Hungarian data, and then we performed simulation exercises with it. Some of them examined the change in productivity and the increase in training efficiency. Perhaps the most interesting results were obtained when we examined the reallocation between sectors. One source of GDP growth in the model could be to shift labour from the less efficient domestic SME sector to the supplier sector. The model, although in a reduced form, is able to capture the empirical observation that firms with supplier relationships to multinational corporations are beneficiaries of knowledge dissemination from multinationals.

Extending the model, we also examined some budget implications. We found that, in light of the low income tax rate typical of Hungary, further tax cuts, although boosting GDP, would lead to an overall decline in revenue. At the same time, a targeted wage subsidy, financed by a small tax increase, may be able to increase the overall performance of the economy as it diverts labour towards more efficient sectors.

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Péter Halmai[1]

STRUCTURAL CHARACTERISTICS OF ECONOMIC GROWTH IN THE EUROPEAN UNION. THE EFFECTS OF THE COVID CRISIS

1. The recent financial and economic crisis has had a lasting and severe impact on European growth processes and growth potential. After the double recession, there was a slow and differentiated recovery. Some EU member states are experiencing persistent growth problems. The trend towards a slowdown in potential growth is particularly significant. The recent widespread coronavirus crisis has shed new light as regards the former, in several respects. In fact, both recessions were "big crises", and the Covid-19 crisis initially had a larger setback than the first one.

In view of the above, the main objectives of the research were the following:

- examining the potential growth characteristics of the last decade and a half, using growth accounting methods at the level of the EU, the euro area and individual major groups of countries, as well as key member states;
- identification of the effects of the coronavirus crisis on growth, in particular on growth potential.

The quantitative analysis underlying the study focused on the financial and economic ("big") crisis of 2008-09, the subsequent recovery and the period of the Covid crisis[2]. Some of the growth-enhancing mechanisms of the Covid crisis have been reviewed in detail. Based on all this, the possible effects of the coronavirus crisis on potential growth can also be formulated. However, due to the nature of the topic, the identification of the latter also involves significant uncertainty.

2. Current growth trends reflect business (or other) cycles. But current growth cannot be permanently detached from potential growth. The structurally sustainable performance of the economy, the equilibrium level of output is expressed by the potential output and its sustainable dynamics by the growth potential. Statistics include current growth data. Exploring potential growth data requires complex quantitative analyses.

The application of growth accounting and the production function approach may provide an opportunity to calculate potential growth. It focuses primarily on the supply side of the economy, the quantity and quality of labour, the accumulation of capital and total factor productivity as the main drivers of output. The aim is to identify the effect of these drivers,

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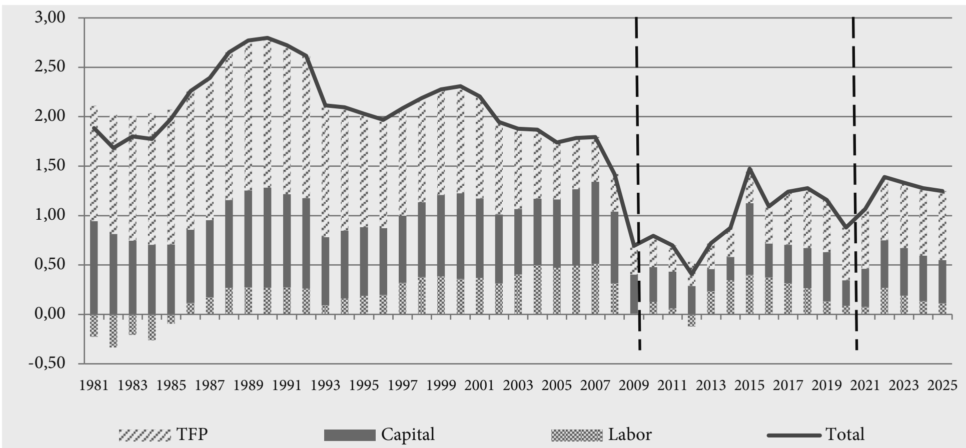
[1] Profconsult Ltd. Date of submission: 30 September 2021.

[2] In the figures with time dimension, a dashed vertical line in the 2008 and 2019 data indicates the threshold, the beginning of the "Big Crises".

and to decompose the GDP growth rate according to the effect of these drivers. In the system of the production function, the potential growth can be calculated on the basis of the development of labour and capital inputs and total factor productivity (TFP).

3. The potential growth rate of the EU15 has been steadily declining since 2000. This decrease can be explained by the development of labour productivity. (The contribution of the labour factor was positive throughout 1985-2008.) The growth rate of labour productivity has been steadily declining since 1993. As the contribution of the capital factor to potential growth did not decrease significantly until 2009 (fluctuating between 0.7 and 0.9% per year throughout), the structural factor in the decline in labour productivity was the unfavourable development of total factor productivity. (Its annual rate has dropped to roughly a third in three decades. The EU15 growth model is summarized in Figure 1.)

Figure 1
The EU15 growth model (potential growth and its main drivers)



Source: own edition.

In the EU15, significant differences can be revealed between the main features of each growth model and between the groups of countries examined as well. The trends indicated above also characterize the growth model of the founding member states, A6. At the same time, the U5[3] group of countries is characterized by high productivity performance. The recovery from the great crisis needs to be highlighted: from 2015, the potential growth rate is 2.3-3% per year. The determining factor in this dynamic is productivity growth. The annual contribution of

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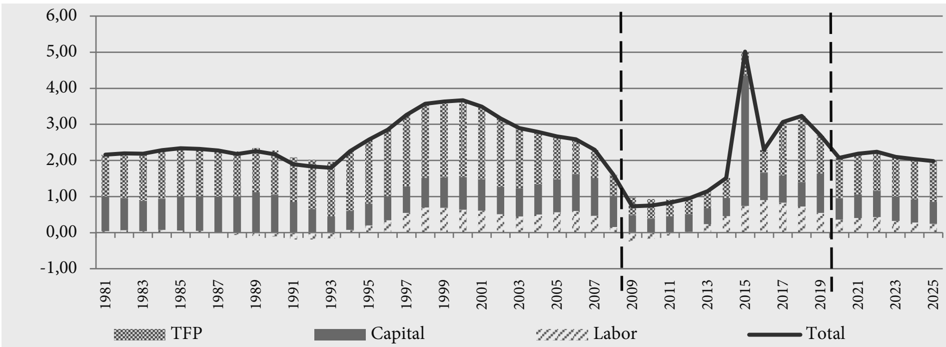
[3] The group of more developed new member states that joined the European Communities in 1973 (DK, IE, UK) or the European Union in 1995 (AT, FI, SE). U5 indicates the U6 group minus the United Kingdom.

the capital factor was 0.6-0.7% and that of TFP 0.6-1.7%. Thus, U5 – essentially the only one from the groups of countries examined – has largely reached its pre-crisis dynamics. (See Figure 2.)

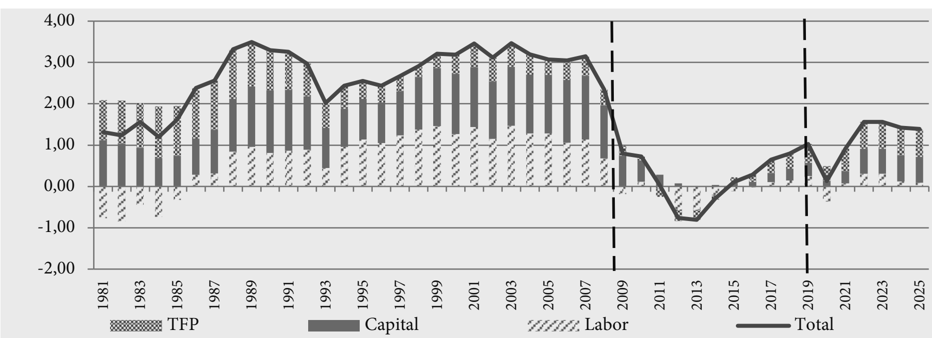
Figure 2
EU U5 growth model (potential growth and its main drivers)



Source: own edition.

In terms of potential growth, the recent financial and economic crisis in the Mediterranean, i.e., the M3 countries that joined in the 1980s, has led to a structural break. After a significant slowdown, the rate of potential growth was negative between 2011 and 2014, exceeding 1% per year only in 2019. The great crisis, including the sovereign debt crisis, which affected this group of countries particularly strongly, resulted in a significant increase in the cost of capital and a narrowing of the opportunities for capital accumulation. Between 2011 and 2014 on average, the M3 TFP did not contribute to potential growth either. (The latter has been only 0.3-0.5% per year since 2016.) Labour productivity was the most unfavourable for all groups of countries in the case of M3. (See Figure 3.)

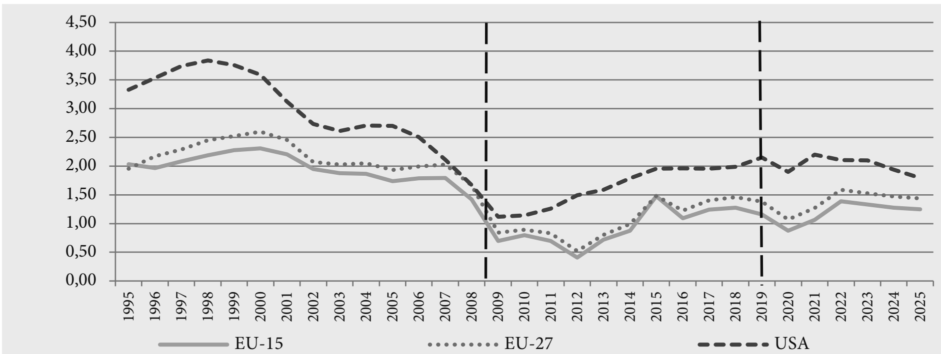
Figure 3.
EU M3 growth model (potential growth and its main drivers)



Source: own edition.

The rate of potential growth in the United States over the four decades under review included higher growth dynamics than the EU15 average. No catching-up potential was detected in the EU15 average during the period under review. (See Figure 4.)

Figure 4.
Development of potential growth in the European Union and the United States



Source: own edition.

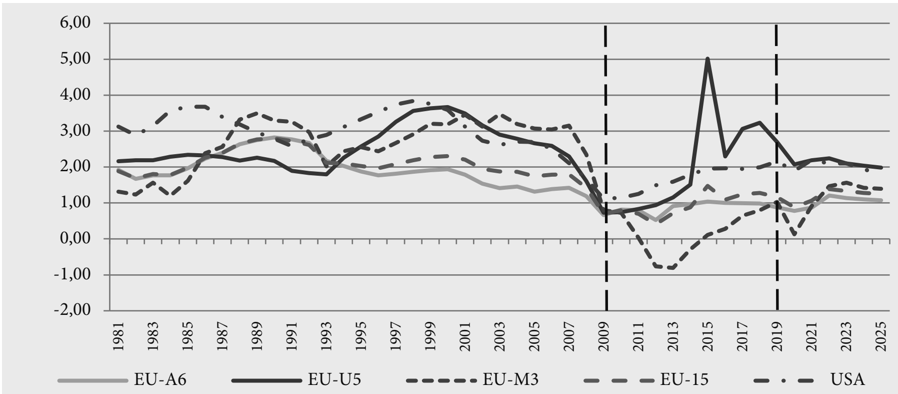
However, there are significant differences between countries. The typical trend in this regard is divergence.

The rate of potential growth in the EU27 has been steadily declining until 2012. In 2015-19, it was between 1.3-1.6%. This dynamic is just over half of that of a decade and a half earlier. The decisive factor is the unfavourable development of productivity. The contribution of capital and total factor productivity did not recover from the depressed 2009-10 levels and remained persistently low. (They account for roughly half of the previous contribution.) Labour market trends are also unfavourable. (Mainly due to a significant slowdown in the growth rate of the working age population.) At the same time, these growth prospects pose new challenges for real convergence.

The cumulative effects of all these factors are also significant. In the case of the EU15, based on the potential growth rate between 2000 and 2007 before the crisis, potential growth in the period 2008-18 reached a significantly lower level. Due to the lower dynamics, the potential output of the EU27 in 2018 was about 17.3% lower compared to the repetition of the previous growth rate. (The same level effect is 16.9% for EU15 and 27.1% for EU12.)

The financial crisis has affected different member states to varying degrees. The symmetric shock had asymmetric consequences. (See Figure 5.) The intensity of the impact of the financial crisis in each EU member state depends on the initial circumstances and the vulnerability associated with them.

Figure 5
Development of potential growth in the average of the examined country groups



Source: own edition.

The Covid crisis, as a brutal external shock, has led to a deep recession in the global and European economy. The pandemic has spill-over economic effects. In addition to advanced economies, the global shock has also had a severe impact on emerging economies.

The Covid-19 shock affected the global economy primarily through the collapse of demand, labour supply and industrial output, supply chains, product prices, international trade, and capital flows.

Economic activity has been affected by various shocks in the EU and the euro area. As a result, private consumption and investment plummeted at the beginning of the crisis. Extreme downward and upward trends also seemed possible.

The duration of the recession depends on the spread of the virus, the effectiveness of the defence and the effectiveness of economic policy responses. A relapse is likely to result in lasting damage that prevents an immediate return to pre-epidemic output levels. Recovery is not likely to be rapid (V-shaped) but rather gradual (U-shaped or less favourable), and uneven across the economies concerned.

The main transmission channels for the coronavirus crisis were the following:

- supply shock: the collapse of supply chains;
- demand shock: rapid shrinking of consumption and investment demand, spill-over effects in the sectors concerned.

These shocks were mixed with a number of supplements:

- liquidity shocks,
- uncertainty shock,
- financial sector shock.

Unlike the financial crisis, the Covid crisis is a shock in the real sector: production and incomes are falling. These shocks are definitively global in scope. Separating the effects of the shocks is a very difficult task in economics. The following categories contain the main effects:

- increased uncertainty,
- decrease in labour supply,
- sectoral collapses, supply shocks,
- wider economic collapses,
- loss of income, forced savings, lack of demand,
- liquidities shocks, money market consequences.

Some of these effects are heterogeneous (country-specific). They often depend on the state of public finances and the ability of the state to bail out otherwise healthy companies that are in a difficult situation due to shocks. The situation of the banking sector and the specific economic structure of each member state (e.g., the size of the tourism sector) add to the risk of structural divergence. All this could weaken and fragment the EU's single market.

A wide range of economic policy measures are used to limit the effects of the epidemic. Their main objectives are:

- direct treatment of health problems,
- mitigation of the economic effects of declining revenues, incomes, and liquidity,
- public support for overcoming the crisis and recovery.

Covid-19 caused a global shock that affects the external environment, parallel with the consequences between different regions. Just like the global financial crisis, this shock is reaching a wide variety of countries and regions. All this has and will have consequences for the severity of the shocks to the EU economy (e.g., through foreign – possibly missing – inputs or lower demand for EU exports). As exposure to the external environment varies from country to country, additional country-specific features may emerge.

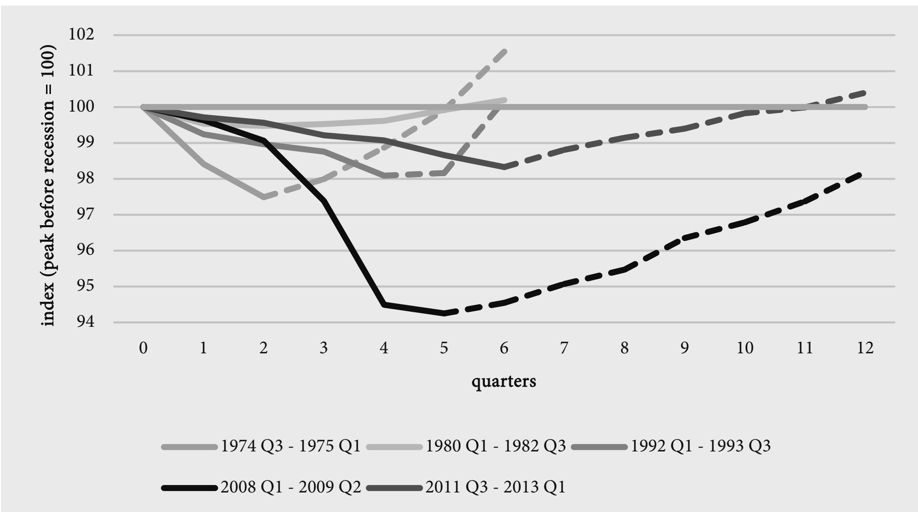
The economic impact of the coronavirus pandemic is extremely complex and varies widely. Economic effects affect supply and demand in different ways in different time dimensions. The duration of the effects depends on the duration of the epidemic and other factors: how trade policies, globalization attitudes, consumer behaviour, working methods and production chains become permanent. Debt accumulated during the recession has a lasting impact on companies, investors' perceptions of risk and the banking sector (the evolution of the ratio of non-performing loans). Pre-existing economic conditions and the impact of the epidemic may prolong some of the effects.

The decline caused by the epidemic was an extremely large and sudden change. It can be called a unique event because the deliberate restriction in economic performance stems from public health concerns and not the accumulation of cyclical surpluses. This situation provides central banks and fiscal authorities opportunities that are not available to them in typical recessions. At the same time, all this poses challenges in choosing the most effective policy instruments: e.g., what measures can be effective in supporting aggregate demand, in the context of supply constraints and social distancing.

Recovery does not depend on an adjustment phase through which the previous cycle or structural surpluses should be corrected first. It was hoped that the recovery could begin sooner than during a normal recession. Recovery depends primarily on the acquisition of control over the epidemic and the length of the containment measures put in place to this end. After the abolition of social distancing rules ('hibernation'), 'warm-up', together with a certain level of 'rebound optimism', seemed less complicated.

A very fast, "V-shaped" recovery seemed a special opportunity in the first place. Even in the case of previous ("normal") recessions, it took some time in the euro area to return to pre-recession GDP levels, especially after the severe financial and economic crisis. (See Figure 6.)

Figure 6.
Recessions and recoveries in the euro area, real GDP (1970 Q4-2019 Q4)



Source: AWM database.
Note: Continuous line from peak to low point (according to CEPR Business Cycle Dates Committee), presentation of recoveries to return to previous peak is a dotted line

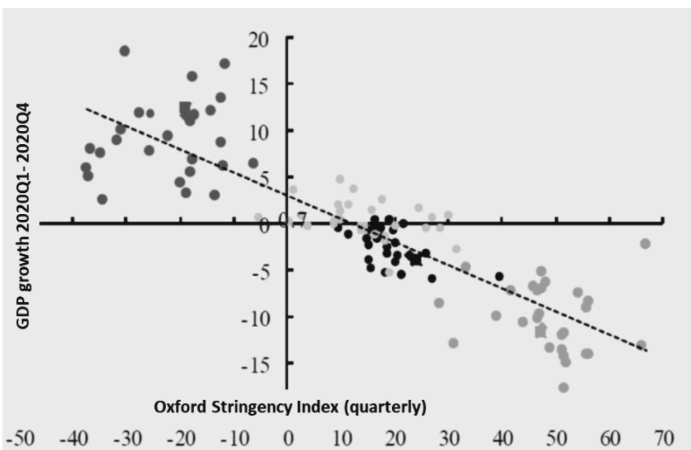
The rate of GDP recovery depends on the duration of social distancing rules and their composition. The results modelling the effects of an epidemic are fundamentally dependent on the assumptions about the epidemic, about its duration and depth. Scenarios can be developed to illustrate how the epidemic could affect the EU economy and recovery from a low point, what happens if the virus is stopped. Different scenarios may include different course variants of the epidemic. The potential effects depend to a large extent on the length of restrictions, social distancing measures, and the effectiveness of policy responses. It is important to take into account the uncertainties surrounding the former.

Covid-19 had extremely severe, unpredictable effects. In the absence of discretionary policy measures, i.e., if only automatic stabilizers played their role, GDP in the EU would have fallen by around 13% in 2020 compared to the pre-epidemic situation, with the possibility of a recovery of around 10% in 2021. About half of this decline is explained by the demand shock, one-fifth by the supply and liquidity shocks, and the rest by the uncertainty shock. However, in the baseline scenario, which also includes the effects of the planned discretionary policy measures, GDP fell by 8% in 2020 as a result of the pandemic, i.e., much more moderately than previously indicated, and the recovery was 6% in 2021. The more favourable outcome in the latter was mainly due to discretionary expenditures and state guarantees for enterprises.

The introduction of measures restricting the movement of persons has caused a wave of supply and demand shocks that have affected the European economy. Between March and May 2020, restrictions on free movement caused a 45% decrease in mobility compared to pre-epidemic levels. Indicators suggest that the euro area economy was operating at its lowest point in the crisis in April 2020, at 25-30% below capacity. Lost emissions are not expected to be replaced in services, especially travel and tourism.

The economic consequences of the coronavirus epidemic and the social distancing measures introduced were unprecedented. (See Figure 7.) The latter led to the almost complete closure of social and economic life at the low point of the epidemic, in addition to travel restrictions.

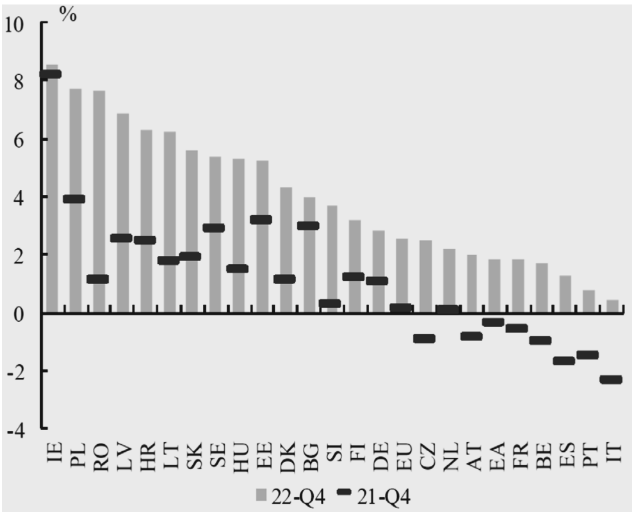
Figure 7.
Oxford Stringency Index and GDP (quarterly development, EU member states, 2020)



Source: Oxford Government Response data, European Commission.
Note: Q1 black dots; Q2 grey dots; Q3 dark grey dots; Q4 light grey dots

While many member states have entered a recession due to a common shock, the impact on the recession is heterogeneous. Individual member states are likely to emerge asymmetrically, with a wide dispersion of the recovery trajectory. (See Figure 8.) The former reflects the different timing of the introduction and abolition of social distancing measures, the structure of the economy, in particular the importance of tourism and leisure activities, and the magnitude and effectiveness of the policy response. Crisis-induced investment restraints also varied significantly between member states. There are and remain significant differences between member states, reflecting pre-existing vulnerabilities.

Figure 8
Comparison of GDP levels with Q4 2019



Source: European Commission DG ECFIN.
Note: No quarterly GDP forecast for CY, EL, MT and LU.

The Covid epidemic will continue to shape the EU economy in the short term. At the same time, the acceleration of the vaccination campaign may provide an opportunity to return to more normal conditions in the next period.

The key questions remain: how long can the vaccines used so far prevent infection, and how can virus variants limit the effectiveness of vaccines. Will it be necessary to vaccinate those who have already been vaccinated or to apply stricter, more permanent restrictions than previously assumed? The epidemic will continue to be a global threat until the vast majority of the population becomes protected from the virus.

Severe restrictions, which have been in place again since the autumn of 2020, have once again led the EU economy into recession. However, the slowdown in economic activity was much more modest than in the first half of 2020. Between the third quarter of 2020 and the first quarter of 2021, EU GDP, cumulatively, declined by 0.9%. However, in the first two quarters of 2020, the same rate was 14.2%. The change in the Oxford Stringency Index and real GDP in the first wave was very strong. (See Figure 7.) These factors had a demonstrably less intense effect during the second and third waves of the epidemic. Households and corporations apparently have adapted much better to the constraints and their consequences (e.g., to social distancing, telework and online activities). Continued strong economic policy support through the recovery of global output and trade has also helped growth since the second half of 2020.

Economic development in the European Union today depends to a large extent on the success of vaccination programmes in alleviating the epidemic. Other factors include the external (world economic) environment, the continuation of appropriate economic policy support, the response of households and businesses, and the extent of long-term damage caused by the crisis.

The development of economic processes is closely intertwined with the development of the characteristics of the epidemic: for example, inflation rates, pressures on the healthcare system, the length and stringency of social distancing measures. There are still significant uncertainties regarding all this.

There may be differences in the approaches of individual member states to lifting restrictions. Some place more emphasis on the overall inflation target than others. The main goal of the governments of the EU member states was to reduce the pressure on the healthcare system at the peak of the epidemic. As a result of the increasing vaccination coverage of the most vulnerable groups, restraining measures can be reduced. A "gradual unfreezing" of the most constrained sectors can be observed. At the same time, the recurrence and rapid spread of virus mutations in Europe is a major public health problem and risk. The need to renew protection is important; on the one hand, because it is limited in time, and on the other hand, because of new virus variants.

The Covid-19 epidemic has triggered a policy response (strong economic policy stimuli) in the EU. This response is unprecedented in both quality and scale. It means a highly accommodative monetary policy, extensive government subsidies in the form of job retention schemes, guarantees, loan repayment moratoriums, tax cuts, subsidies and various forms of transfers; and in the form of legal and regulatory adjustments to protect employees (e.g., ban on dismissal) and to protect businesses (suspension of insolvency procedures). Most of the former are planned to be temporary, a return to normalcy of the economy will require the economy to give up economic policy support before undesirable side effects occur (e.g., market distortions and barriers to the exit of inefficient companies). Support should continue until the recovery is held, avoiding the political "cliff effect".

The political focus has gradually shifted from emergency support to sustaining recovery. The goal is directly to mitigate the social impact of the coronavirus epidemic. In fact, the goal in the medium term is to increase potential growth. It will make European economies and societies more sustainable, more resilient, and better prepared for the opportunities of green and digital transformation.

The external conditions for the growth potential of the EU's open economies may be more favourable than before. Significant revisions have been made to the global growth outlook, particularly in emerging Asia and the United States. An additional fiscal stimulus is applied in the United States.

The longer the epidemic lasts, the more difficult it is to avoid damage that will continue to affect the coming years. It is difficult to predict the full extent of permanent output and labour market losses due to the epidemic crisis. Past epidemics do not provide adequate assistance for analysis. Those were largely localized events. They cannot be compared to this great global epidemic. Furthermore, government support measures have significantly mitigated the negative effects of the epidemic on companies and workers. Traces of the crisis will only become visible if the economy reopens and political support ceases.

The main growth effects of the crisis are:

- it can reduce capital accumulation;
- strong labour market effects in labour-intensive sectors; growing inequality;
- contradictory effects on total factor productivity. The crisis may hold resources in non-productive sectors. Innovation may decline in the context of lower R&D spending. In the private sector, increased uncertainty may hold back innovation. The reshoring of global value chains after a crisis can hamper innovation and the transfer of knowledge between countries. In the longer term, protracted school closures could have a negative impact on future human capital. At the same time, the crisis has accelerated the increased use of digital technologies, which could promote the structural transformation of the economy and make a positive contribution to overall factor productivity growth.

As the recovery progresses, there will be a shift in policy from protecting companies and jobs towards more efficient use of resources. The more successful the reallocation and modernization of the EU economy, the more long-term damage from the epidemic can be overcome in response to the epidemic (e.g., through digitalization and automation).

According to simulations based on the production function approach, the potential growth rate of the EU15 in 2020-21 is barely half that of the United States. The bulk of the discrepancy is explained by the different dynamics of productivity growth. At the same time, the potential growth rate of the EU U5 group of countries has been consistently outpacing the US dynamics since 2014, even during the Covid crisis. The dynamics of productivity is similar to those in the United States. (Within that, the effect of capital accumulation is somewhat higher in the US, while that of total factor productivity is somewhat higher in the case of EU-U5.) According to the simulations, the dynamics of potential growth may again be at the 2015-19 level between 2022-25.

The potential annual growth rate of the "developed" EU member states[4] has been well above that of the Mediterranean (M3) member states since 2009. This divergence has signalled serious disruptions to the functioning of the euro area, a lack of desirable homogeneity. The divergence persists during the Covid crisis. The decisive reason for this is the unfavourable development of productivity. Between 2022 and 2025, M3 will once again reach the average dynamics of potential output of "developed" EU member states. However, no convergence capacity can be identified for the Mediterranean member states in the most recently indicated period. This increase in productivity will not be able to make up for the lost decade. In fact, even the divergence between the Mediterranean member states and the "developed" EU member states cannot decrease during the indicated period.

According to the simulations presented, the dynamics of potential growth will not decrease permanently due to the Covid crisis. From 2022 onwards, the EU and the average of the main groups of countries examined may return to pre-2020 levels. (See Figure 4.) However, the coronavirus crisis may have a lasting level effect. This loss cannot be worked off in the post-crisis years under the basic assumptions of the simulation (including unchanged policies).

An additional danger may be the recurrence of possible variants of the coronavirus, and newer waves of the epidemic. A series of protracted shocks would permanently dampen growth potential. In other words, permanent shocks, together with the already existing weaknesses of Europe's growth potential, would have serious consequences. Avoiding this dangerous trend is the fundamental interest of all EU member states.

The Covid crisis is therefore likely to have a direct impact on the level of potential output. The key question is: will it have a lasting impact on Europe's growth potential? Potential growth may be permanently affected by declining investment and labour market hysteresis. The former would adversely affect productivity. All this can lead to an increase in inequalities and have a negative impact on social cohesion. The future development of divergences between EU member states is very important. Their possible increase could disrupt the functioning of the euro area and the internal market. However, a possible new wave (or waves) of the epidemic would result in another external shock. Avoiding the former can be an important political priority. On the other hand, based on the experience gained so far, in the event of another wave of the epidemic, the possible decline in outputs can be successfully mitigated through adequate policies.

A lasting source of potential growth in EU member states could be increased productivity. Its central structural factor is the dynamics of total factor productivity. The level and dynamics of performance in this area varies greatly from one member state to another. Reducing performance gaps against the cutting edge through in-depth structural reforms can be a key factor in strengthening growth potential.

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[4] EU15 Member States without M3 and IT.

But through their cleansing effects, which force structural transformation and the reallocation of resources, crises can also provide new opportunities, new chances for the growth of total factor productivity. Rapid reallocation of resources can mitigate the loss of growth potential. Rapid structural transformation can be facilitated by integration into global and continental value chains. Disruptions in redeployment can lead to deteriorating resource use and rising unemployment.

Exploring potential growth and growth potential is an essential condition for defining and applying the right policies (policy mix). The projections for potential growth assume unchanged policies. Adverse trends can in principle be offset, or at least mitigated, through substantial changes in macroeconomic policies and the implementation of in-depth structural reforms. Analysis of the determinants of growth potential can help lay the foundations for unavoidable structural reforms and macroeconomic adjustments

Miklós Losoncz[1]

GREEN BUDGET IN THE EUROPEAN UNION

The environmental policy of the European Union and its predecessors dates back to the late 1980s and early 1990s, when the legal bases were established at the level of primary law (Treaties), which a large number of policies and secondary sources (regulations, directives, decisions, etc.) were built later on. The content of the EU environment policy has been constantly expanding and from 2007 onwards, at the level of policy (but not the Treaties!), it has gradually become a climate, energy and environment policy. The dynamics of this have been largely shaped by international (global and multilateral) factors and influences to which the EU institutions have reacted on the one hand and responded proactively, on the other hand. (The international context can also be deduced from the current Article 191 (4) TFEU.)

Relying on its institutions and cooperation mechanisms, the EU has had a greater room for manoeuvring than under international law, to enable, promote and, in some cases, enforce the implementation of global and regional goals. This is particularly noteworthy in the light of the fact that EU member states have also acceded to multilateral conventions on the environment.

The EU has played and continues to play a kind of disciplinary power over the member states, narrowing down (but not eliminating) the possibilities for free-rider behaviour, as without the integration and commonly agreed rules, some member states would probably have made less effort to achieve environmental goals. In this sense, the EU has played and continues to play a mediation and catalyst role in translating and implementing a specific part of global environmental goals. Among other things this may explain the fact that in the last decade and a half, the environmental policies, legislation, and performance indicators of the EU member states have been determined to an outstanding extent by the relevant EU legislation. The environmental policy of the EU and its predecessors has also played a prominent, increasing role over time in shaping member states' economic philosophies and policies.

From the outset, the objectives of EU climate and energy policy have been to reduce greenhouse gas emissions, promote renewable energy sources and increase energy efficiency, which can also be seen as pillars of the policy. Energy security, the internal energy market, as well as research, innovation and competitiveness, climate policy, clean water and air, biodiversity, etc., have become further dimensions of energy policy.

Until the European Green Deal was reached, the EU environmental policy announced policies and programmes defining the objectives to be achieved, accompanied by Community legislation to achieve those objectives. One of the common features of these programmes was

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that these legal sources did not contain effective, legally binding tools to enforce the set objectives, which was partly due to the nature of the open method of coordination. This has somewhat weakened the EU's role as a mediator, catalyst, 'disciplinary authority' and deterrent. Another feature was that funding was relying on the member states and, partly, the private sector, while the role of Community funding was rather insignificant.

A more detailed examination of the immediate background to the European Green Deal is instructive in terms of the dynamics of EU legislation. The objectives are first reflected in the legally not binding political resolutions or conclusions of the European Council of EU heads of governments or states, which are based on the process leading to the Commission documents (guidelines, communications and working papers) and on which the European Parliament also provides its opinion. This is followed by the drawing of the draft legislation itself, the discussion and adoption of the law (by the Council of the European Union and the European Parliament), and later the refinement of the legislation. The new documents are not only built on each other but are organic continuations of previous legislations. All this serves as a guideline for future legislation.

The European Green Deal is a comprehensive and complex collection of documents in the sense that it puts its subject in an international and wider socio-economic context: the strict 2030 targets must be achieved while taking into account sustainability requirements for all policies, which in turn, require a new growth strategy. The objectives and main elements of the European Green Deal are placed in a broader macroeconomic context and brought together in the Sustainable Europe Investment Plan. The Multi-annual Financial Framework (MFF) and the Next Generation EU (NGEU) are key instruments to achieve the objectives of the European Green Deal and, more broadly, the implementation of the Sustainable Europe Investment Plan, which have also been used emphatically to mitigate the effects of the coronavirus epidemic. The Sustainable Europe Investment Plan includes other elements as well. The Green Budget, the Sustainable Europe Investment Plan, the MFF and the NGEU form an integrated system, as the interactions between the components allow for significant synergies and can contribute to the cohesion and sustainability of the EU.

Compared to similar initiatives to date, the significant funding of climate and environmental policy objectives from Community funds (MFF and NGEU) is a breakthrough. 30% of the total expenditure of the two EU budgets is intended to be spent on such objectives with specific targets. The EU institutions are also largely linking the recovery from the effects of the coronavirus epidemic to climate and environmental goals. In contrast to the 20% share of MFF between 2014 and 2020, the planned 30% share of climate and environmental expenditures is a very significant step forward, not only in terms of quantity but also in terms of quality. Unlike before, the current MFF as a whole is permeated by a green environmental approach, an economic philosophy of transition to a green economy. The expenditure target to be achieved is in line with the priorities of the MFF and the NGEU.

The planned expenditure is distributed among the member states on a normative basis, in accordance with principles and rules laid down in advance and approved by the member states. Under such conditions there is little room for subjective factors. In the case of non-reimbursable expenditure, the size of the resources allocated to the member states is given.

The room of manoeuvring for the member states lies at most in the proportion of allocated resources drawn. The allocation and use of credit lines is more flexible, with member states competing for credit resources within certain limits.

The weakness of the European Green Deal, the Sustainable Europe Investment Plan, the MFF and the NGEU is the oversized target system. This is being offset somewhat by a few larger blocks, but the many smaller programmes are fragmenting the concept and implementation.

The MFF for 2021-27 aims to spend EUR 322 billion on climate policy and environmental goals. Linked to this is NGEU's EUR 117 billion grant for the same purpose, for a total of EUR 439 billion. (An in-depth examination of the two budgets resulted in a EUR 24.7 billion lower figure, at EUR 414.6 billion.) This is compounded by an investment of more than EUR 210 billion generated by national co-financing, loans, loan guarantees and other instruments, the European Investment Bank's EUR 180 billion green credit line and the separated EUR 110 billion loan in the NGEU, for a total of EUR 500 billion. Due to their different quality, grants and loan guarantees and limits cannot be combined. The different maturities of the MFF, the NGEU and the Sustainable Europe Investment Plan cannot be ignored either.

Table 1

Planned climate policy and environmental resources in the EU between 2021 and 2027 (EUR billion at 2018 prices)

	Non-refundable support	**Loan, loan guarantees**
MFF	322	-
NGEU	117	110
National co-financing, loan, loan guarantee	-	210
European Investment Bank	-	180
Altogether	**439**	**500**

Source: Own edition based on EU materials.

Co-financing, bank guarantees, loans are an option for economic actors, but they are far from being mandatory. Their use, in addition to specific credit conditions, depends to a large extent on the economic environment and the extent to which it encourages the use of existing frameworks. Leveraging available credit guarantees and credit facilities is one of the key, if not the main, risks of implementing the European Green Deal and the Sustainable Europe Investment Plan.

Compared to the previous one, the current MFF and NGEU are also a step forward in financing expenditures. MFF's revenues included a new own resource based on the non-recycled plastic packaging waste and a legally binding decision on the subsequent introduction of additional green resources (carbon offset mechanism, ETS-based resource). The Commission intends to cover part of the NGEU's expenditure by issuing a common EU green bond.

The MFF, the NGEU and the other instruments of the Sustainable Europe Investment Plan play a catalyzing role in the implementation of the European Green Deal, acting as a multiplier with forward and backward linkages and spill-over effects. This is understandable in view of the fact that the MFF and NGEU, due to their small size and other reasons, do not replace but complement member states' budgetary resources. Therefore, it is not – or only to a certain degree – justified to compare MFF and MFF expenditures and, more broadly, the scale of financial resources they mobilize, as well as their estimated investment needs to achieve climate and environmental goals (the needs of what are difficult to assess properly and are constantly evolving with new technologies and needs).

The objectives and mechanisms of the European Green Deal will be integrated into the budgets of the member states, resulting in environmentally friendly budgetary practices. The European Green Deal, the MFF and the NGEU directly and indirectly affect economic processes. The direct effects are strongest in investments, including public investment, and regulation.

The indirect effect of the European Green Deal can be seen mostly in environmentally friendly budget planning, in the reorientation of the focus of public investment to areas and activities supporting the transition to a green economy, in the regulation of state aid in favour of environmentally friendly activities and in the promotion of environmentally friendly products. The implementation of the de-carbonization goals will take form in reducing fossil fuels, including coal mining and coal-fired power plants, the promotion of renewable energy sources and investments to improve the energy efficiency of buildings.

The green budget indirectly shapes the room of manoeuvring of the private sector. Thus, private companies participate in the implementation of public investments as contractors and suppliers. EU sources and EU regulations to encourage the production of environmentally friendly products provide guidance for corporate investment, business strategies, and business decisions, producing climate-friendly or climate-neutral products. The climate-friendly regulatory environment also determines the use of loans available under the Sustainable Europe Investment Plan. Overall, the European Green Deal is expected to contribute to the integration of climate and environmental objectives into industrial strategies as their horizontal instruments. From a sectoral perspective, the impact of the European Green Deal is expected to be most significant in mining, power generation and construction.

The European Green Deal, the MFF and the NGEU outline a new type of economic development model and growth trajectory at both EU and member state levels, one of the central elements of which (in addition to the digital transformation) is the transition to a green economy, its leading principles being sustainability and flexible resilience.

The implementation of the European Green Deal is subject to a number of negative risks. Delayed disbursements constitute a significant risk for NGEU; the time required to prepare member states' recovery and resilience plans to be revised by the Commission and to be decided on the disbursement may be more than planned, so it is reasonable to expect that disbursement will start in the fourth quarter of 2021, at the earliest. This could reduce the positive economic effects of the NGEU (and MFF). There is a similar risk for MFF. An additional risk is related to compliance with the rule of law mechanism for the protection of the EU budget and the provisions of other EU instruments. The limited capacity of member states to absorb capital and many constraints on EU institutions to enforce member states' targets is an implementation risk.

According to European the Green Deal and the priorities of the MFF, 30% of the EU funds received by Hungary under the MFF must be spent on climate policy and environmental goals, which is a total of EUR 10.2 billion, with an annual average of EUR 1.5 billion. It can be reasonably assumed that Hungary will have access to the loans and loan guarantees provided for in the Sustainable Europe Investment Plan, as well as to the loans of the European Investment Bank, in proportion to its share in the EU budget (5%). Under these conditions, EUR 10.1 billion of the former and EUR 9 billion of the latter could be mobilized to finance projects and programmes to achieve the objectives of the European Green Deal. (This is, of course, a rough estimate and a kind of cap to illustrate the opportunity available.) Disbursement requires the implementation of country-specific recommendations. Failure to do so is one of the risks of acceding to the resources. The other risk is non-compliance with the rule of law criterion that aims to protect the EU budget.

Hungary is eligible for EUR 7.2 billion in grants and EUR 9.7 billion in loans from the NGEU envelope. 70% of the grants can be contracted by the end of 2021, and the remaining 30% by the end of 2022. A loan agreement can be concluded until the end of 2023. An advance of 13% of the expenditure can be claimed, which is likely to be disbursed in mid-2021. The remaining 87% will be disbursed subject to the fulfilment of indicators. Risks of acceding the funds include late disbursements, potential rejection of the national recovery and resilience plan due to its shortcomings, non-compliance with the rule of law criterion aimed at the protection the EU budget and the limited ability of the Hungarian economy to absorb capital.

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THE TRANSITION TO CIRCULAR ECONOMY: THE BUDGETARY IMPLICATIONS OF RESTRUCTURING THE WASTE MANAGEMENT SYSTEM IN HUNGARY

In 2015, the European Commission adopted a comprehensive legislation package on waste management (the Circular Economy Package) to help member states' economies make the transition to a circular economy model. The measures in the legislative package promote global competitiveness, sustainable economic growth and job creation while setting ambitious waste management targets for EU member states.

The new EU Waste Framework Directive (WFD) came into force in 2018 and set the following key waste management targets for member states:

- member states must recycle 65% of municipal waste by 2035,
- member states must recycle 70% of packaging waste by 2030,
- further specific recycling targets for each type of packaging waste and for other product waste, significantly increasing the expected minimum collection and recovery targets,
- landfill waste must be reduced to 10%,
- member states should establish separate collection and recovery of biodegradable waste by 2023.

The current waste management system in Hungary is incapable of such qualitative advancements and a new model is needed that can meet and even exceed the minimum collection target for certain material streams, even if with different solutions for certain material streams.

We have examined the current Hungarian solid waste management system to uncover why it is failing to meet the targets set by the European Union. We have identified *several challenges* which form the basis of our *proposed model.*

The identified systemic problems are the following:

A *lack of a systems approach* that would address the solutions for each waste stream in a holistic way. Individual material streams are treated completely separately, some sub-streams – glass, construction demolition waste, biological waste – and existing systems do not build

[1] IFUA Horváth & Partners. The paper was prepared for the Blue Planet Climate Protection Foundation. Date of submission: 3 September 2021.

on each other. Separate management of material streams is inefficient, and the public is confused by the abrupt and continual changes in systems. To address this problem, we propose to design and implement a system that *manages each specific waste stream independently,* while at the same time *developing complementary solutions* to achieve maximum efficiency. It is also important that the model to be developed should be stable in the medium to long term, without significant changes, to provide a predictable and traceable solution for all parties involved, ensuring proper use of the system.

There is *no real medium- to long-term strategy* to provide a transparent background for the waste subsystems. In the absence of a strategy, without knowing the exact targets and milestones there is no reliable basis for development; the industry has failed to move in the right direction. No development is taking place in an uncertain investment environment; owners of the waste cannot be informed of inexistent expectations and the constantly changing communications which also vary in intensity, causing mistrust and confusion. To address this challenge, it is necessary *to develop a realistic medium- and long-term strategy,* taking into account the above point so that each step of the implementation is carried out by the different actors without changing the strategy, whose roles and responsibilities are clear and who are therefore accountable, in order to achieve a predictable solution for all, but especially for the end-users. The strategy must be well-defined and evidence-based, so that it is genuinely capable of achieving medium- and long-term objectives, avoiding the premature and radical changes that have occurred in recent times as a result of uninformed decisions.

Both the *legislative vision* and the *implementation practice change* annually and *significantly*. The 2011 legislative change has fundamentally reshaped the waste management landscape, but it has not been characterized by a systemic approach, so that every year, again without systemic thinking, expectations of all actors, including funding, change substantially and fundamentally. The dynamic changes in legislative practice and implementation in recent years have made the position and responsibilities of the stakeholders unpredictable. A solution to this challenge would be *the consistent development and implementation* of the strategy outlined in the previous point.

The system is underfunded on multiple levels and funding is not specified for each subsystem. Due to ill-considered changes in the system, the payment of the environmental product tax is fully separated from the outgoing payment, with only a fraction (HUF 9-15 billion) of the amount paid by the companies (appr. HUF 80 billion) that qualify as producers being utilized for a specific purpose in the state budget. The amounts of state subsidies have not been reviewed for years. The system is unable to meet even the minimum targets and has no concept or funding to exceed them. Payments are made through public procurement procedures which are significantly delayed beyond the year, leaving the waste industry vulnerable. Public procurement is not a way to prioritize quality services, nor can it follow the prices of waste with a global market price. The use of the budget is uncertain and could be withdrawn by a government decision – as happened in 2020 in the wake of the pandemic – while producers pay this amount for specific waste management objectives. Partial funding of public service providers – already in financial difficulties – due to the restructuring in 2012 and beyond cannot be solved from the product tax system, as due to the restructuring it would result in double-funding. To address underfunding – and other funding anomalies – *the strategy should include the selection and use of the most effective financial instruments for any given waste stream* in question, to incentivize and oblige each stakeholder, avoiding double-funding and cross-financing while ensuring continuous, predictable, and calculable funding by applying the principles of extended producer responsibility (EPR) and full net cost coverage.

There is *a lack of human resources and expertise in the public administration* to deal with this situation. In the former private system, more than 100 people were involved in waste management, with colleagues working in the field of official control at regional and national level. The Hungarian Waste Management Association (Országos Hulladékgazdálkodási Ügynökség, OHÜ) has carried out its activities with 176 staff; the current system has at most 10% of them. To overcome the skills shortage, it is *necessary to ensure adequate human resources and expertise* for waste management in the administration, in a reliable and predictable way. Public administration is not a competitive career path for waste management experts at the moment and this should be taken into account in the design of the envisaged model.

In the absence of a medium- to long-term strategy and human capacity, *communication and awareness-raising* against the significant financial resources *is not working*. There is no target to communicate, neither specific to the material stream nor specific to the target group. The use of communication resources is not transparent. As the systems changes year by year, the public cannot get reliable information and therefore does not trust and participate in the systems. The challenge of the current communication activity could be addressed by *developing a medium-term communication strategy* which should be *integrally linked to the industry strategy,* its objectives, solutions, and results. Like the industry strategy, the communication strategy must be reliable, predictable, and effective, capable of stimulating and engaging end-users.

In the absence of a medium- to long-term strategy, the use of significant financial resources for *industrial development* is piecemeal. Tenders for industrial development lack prior market assessment, gap identification, targeting (higher collection rate, quality recovery) and transparency. The development of a medium- and long-term strategy can address this issue by *providing a factual assessment of existing capacities and setting targets* that can help in national planning, capacity building and avoiding duplications. A country analysis can identify where and what additional industrial development – linked to existing capacity – is needed to achieve higher utilization rates and quality.

Industrial development tenders do not apply the *cost-benefit principle* in any form and cannot serve the national economic interest in the absence of a strategy. Tender proposals are neither evaluated nor awarded based on an assessment of whether the investment will ensure a shift towards waste recovery targets, while implemented improvements are also not monitored. To address this challenge, *industrial development targets must be linked to the achievement of strategic objectives,* and any development funds should only be allocated if they are cost-effective and deliver real results, including the achievement of self-sustainability of the business. The improvements made must be monitored on an ongoing basis.

The current legal and institutional system is inadequate. When the legislation was changed in 2011, the organization set-up (Hungarian Waste Management Agency, OHÜ) had neither the financial nor the material conditions for executing this legislation. Since then, each year the tasks have been transferred to a different public entity. The roles and responsibilities are not clearly defined. Human resources in the implementation have been reduced to one-tenth, and the mandatory tasks are no longer being carried out despite the reduction of the legal requirements for public institutions, which has a significant impact on the transparency of the system. In order to transform the legislative and institutional system, *the state must provide adequate human, material and financial resources* for the tasks of legislation, strategy formulation and monitoring of the implementation. A clear delineation of public and private responsibilities, a precise definition of public and institutional responsibilities and their separation from the private sector would embody an effective system. It is important that the authority be able to employ appropriate expertise, in sufficient numbers, with adequate resources and authority, but do not overstep its public/institutional remit and do not become confused in its tasks and functions by taking over atypical functions without results which are ought to be carried out by private stakeholders.

The solutions proposed to address the problems identified here should form part of the future model with a view to enabling Hungary to achieve the waste collection and recovery targets set by the European Union, to move towards the development of the waste industry, job creation and technological development, and to create a balanced, reliable, and self-sustaining economic sector in the long term.

The concession system that the Government intends to introduce is not the optimal solution for the existing waste management challenges in its current state, and it is therefore of utmost importance to set out the limitations and risks of the proposed concession system.

A key chapter of the study is the presentation of the budgetary implications of the concession system, which clearly shows that the new system will impose a significant additional burden on the state budget.

The estimated budgetary impacts are discussed in the following four sections:

1. Waste streams handled by public service providers

In the concession model, the concessionaire carries out the public service task of waste management, which it undertakes for 15+15 years. The state guarantees the concessionaire's losses incurred due to the public service nature of the assignment.

Balance of the current system. Covering the losses of the current waste management system represents an annual expenditure of appr. HUF 70 billion for the public budget. The current level of public service covers the provision of basic services, so this amount is only sufficient to cover basic operations. It is an EU requirement to cover the collection of biodegradable waste, but the system currently does not meet this requirement. The budgetary impact of its implementation has not yet been assessed, but given the prohibition of cross-subsidization, it is likely to generate additional losses in the future.

Efficiency improvements. The introduction of the concession system is expected to improve the efficiency of the system's operation by 10%.

Investment. As the concessionaire wants to operate a modern business with a high collection rate, it will have to make investments, which it will expect the state to reimburse.

Upgrading the machinery and equipment in stock (e.g., wastebins). No financial assessment of the assets has been carried out in recent years, so there is no actual data on the extent of the amortization or investment requirements at present, only an estimate of the magnitude (appr. HUF 50 billion). The aim is to significantly reduce the average age of the assets.

Depreciation (5-year useful life estimated): the depreciation of the current assets is not accounted for, and operating costs (maintenance, upkeep) are not covered. It is up to the concessionaire to determine which assets to take over from the public service provider and at what book value, which represents an additional significant exposure for the public budget.

The *profit expected* by the concessionaire for carrying out the public service task is 8%.

Cost of bad debts. The value of bad debts is appr. HUF 25 billion due to the current lack of enforcement and high default rate.

In total, the state will have to cover an additional loss of around HUF 85 billion due to the establishment of a concession system in public waste management.

2. Waste streams subject to an environmental product tax

The environmental product tax, which entered into force in 2012, has been considered as state budget revenue to be spent freely according to the previous practice. Since the recovery of waste in the concession model will be carried out by the concessionaire, the estimated environmental product tax of appr. HUF 86 billion will also be paid to the concessionaire.

With the proposed introduction of the one-way deposit refund scheme (DRS), certain material streams (PET, aluminium cans, glass) will be excluded from the scope of the product tax, thus the state/concession revenue from the product tax will decrease by appr. HUF 6.25 billion.

3. Waste streams covered by the one-way deposit refund scheme

From a budgetary point of view, *the deposit refund scheme is self-sustaining:* producer contributions and the combined amount of the remaining deposit from unreturned packaging cover the operational costs of the system.

A positive balance in the first few years (amount of the deposit from unreturned packaging remaining within the system) *is necessary to financially maintain the system* in the long term, as the balance will turn negative after a few years as the collection rate as well as the total deposit amount returned to the public increases. The remaining deposit fee in the system ensures that the producer's contribution is not paid twice.

Another result of the deposit refund scheme is that the initial cost of the packaging material has to be financed on the producer side which may lead to price increases of the end-product even in the short term due to the increase in producer costs.

If the one-way deposit implemented in the scheme is subject to VAT, there could be a modest positive VAT impact on the state budget. The amount of VAT paid on the deposit fees remaining in the system (depending on the level of the deposit fee) would in the long run, i.e., with an increase in the collection rate above 90%, mean a state budget revenue of only around HUF 2 billion per year. However, collecting this negligible *VAT amount would impose a disproportionate administrative burden* on all actors in the system.

Based on international examples, *the deposit on returned products is not subject to VAT,* so the VAT would be payable only on the deposit of uncollected products.

Under the current system, the shelf price from the trader's perspective is the net invoice price plus the individual margin and VAT. Under the deposit refund scheme, the net invoice price would be reduced by the product tax (as single use beverage packaging would be exempt from the product tax) but increased by the producer fee to finance the DRS system. The resulting small increase in margin and VAT may result in a minimal change in consumer prices for consumers, but it is rather the introduction of the deposit that will be perceived as a price increase by consumers. The amount of the deposit should be determined based on proven international practices while also taking into consideration the purchasing power of Hungarian consumers.

With the introduction of the deposit refund scheme, the registry of a product (e.g., X brand half-litre mineral water) will be divided into two article numbers: the beverage (the price of the mineral water itself) and the returnable packaging (deposit). The balance of the elimination of the product tax and the introduction of the DRS charge will be reflected in the manufacturer's invoice prices (in the 'unit value') which will be carried forward by the retailers in the shelf prices (in the case of psychological price points – e.g., HUF...99 –, this may not always be implemented). For this reason, the consumer will basically *perceive the introduction of the deposit as a price increase* on the product level.

4. Production/industrial waste

Approximately one-third of the 18 million tons of waste generated annually in Hungary is industrial waste. Industrial waste will also be covered by the scope of the concession, but the *budgetary impact* of this *has not yet been estimated.*

The price calculation of the delivery of industrial waste will be a complex subject carried out by the Hungarian Energy and Public Utility Regulatory Authority (Magyar Energetikai és Közmű-szabályozási Hivatal, MEKH) whose tasks will include the classification of the different types of waste and setting out the prices. At present, the pricing of industrial waste is done on the free market, with the waste generator legally obliged to take care of the waste produced during its activity (any price difference, whether positive or negative, is borne by the producer as a risk).

Industrial waste will also be the responsibility of the concessionaire, but the *system's budgetary implications are unpredictable:*

- the value of the industrial waste is currently determined by tendering: the polluter sells it to a subcontractor at a mutually agreed price;
- in the future, determining such selling price will in all cases be the responsibility of MEKH, and the parties will be obliged to enter a contract on the terms (i.a. price) set by MEKH.

The complexity of the production-industrial waste subsystem is outlined in the following points:

- The *material scope* of the waste management legislation covers some 1,000 codes for types of waste, making their classification a complex and time-consuming task.
- The *personal scope* of the waste management legislation covers more than 100,000 legal entities, although the exact scope of those concerned is difficult to define.
- The *value of waste materials is not index-linked to inflation,* but also depends on daily stock market prices, so the future balance of the system cannot be estimated based on the revenues of past years.

According to the legislation, industrial waste can be stored for a maximum of one year, so the *exposure of producers to MEKH is high:* the time frame and the economic environment in which MEKH sets the price of waste is uncertain, but has serious economic consequences for all producers:

- the *state has an obligation to compensate* (under Supreme Court decision, not enforceable) the entities as it is the owner of the waste,
- the costs incurred by the state budget as a result have not yet been established.

Overall, the analysis of waste streams shows that the *direct budgetary impact of the introduction of the concession system is at least HUF 238 billion* for all subsystems, but other indirect effects are also to be expected.

The other indirect budgetary impacts of the introduction of the concession system depend to a large extent on the detailed regulation of the concession; their magnitude is currently unknown. Indirect fiscal effects include the scope of VAT (due to changes in the definition of the product), other taxes affecting producers and traders (local business tax, retailer tax, etc.), labour market effects and social effects.