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Monetary and Fiscal Policy: How Have the Two ‘Climbers’ Helped Each Other in the Past Decade and a Half?



Summary

The independence of the Hungarian National Bank in setting monetary policy is guaranteed by law. However, the ultimate goal of monetary and fiscal policy, the promotion of sustainable growth of the national economy, is common. The creators of the two policies can be compared to climbers who climb to the same summit by different routes, bound together by a long safety rope. Such a rope is that when the central bank's reserves are exhausted, the budget is obliged to reimburse the central bank to cover its balance sheet deficit. This poses a direct budgetary risk. The supportive effect of monetary policy on fiscal policy can be seen, mainly indirectly, in the safer and cheaper financing of public debt. The opposite can be seen as an indirect budgetary risk. The paper reveals that between 2007 and 2012, the budgetary risks of monetary policy were amplified. However, from 2013 onwards, monetary measures have not created a direct budgetary risk, in fact the central bank paid dividends to the government. After 2013, monetary policy measures contributed to a significant reduction in the interest burden on public debt and an increase in the share of domestic sources in the financing of public debt. Monetary policy played an active role in mitigating the negative economic impact of the COVID pandemic. However, restoring fiscal balance, which was disrupted by the huge expenditure required to deal with the pandemic, is a different task for monetary and fiscal policy. It is important to keep monetary and fiscal policy together in this period.

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THE TWO CLIMBERS

Hungary's Fundamental Law¹ states and the Act on the Hungarian National Bank² (hereinafter: MNB Act) confirms³ that Hungarian National Bank (hereinafter: MNB or central bank) is independent of the Parliament and the Government, which are responsible for fiscal policy, in the formulation and implementation of monetary policy. Despite this independence, the two policies share the same ultimate objective: to promote sustainable growth of the national economy and thereby ensure the stable well-being of society. Monetary and fiscal policy could be compared to two climbers trying to reach the same summit, but not climbing up the same route. To continue the analogy, it could be argued that the safest way to keep the two climbers together is to tie them together with a long and strong rope. This allows them to move relatively independently, and a slip by one of them does not cause immediate danger to the other. At the same time, if one of them slips or falls, the other is able to hold it up, provided that they themselves stand firm.

The analogy seems all the more apt since the MNB Act requires the use of two 'safety ropes'. Under the law, the central budget is liable to reimburse the MNB if:

- the MNB makes a loss and its accumulated profit reserve is insufficient to cover the loss⁴;
- the sum of the two equalisation reserves⁵ becomes negative and the accumulated profit reserve and the profit for the year are insufficient to eliminate the negative balance⁶.

The rationale for imposing these obligations is that monetary policy must pursue the objectives laid down in the MNB Law, even at the cost of the MNB operating in the form of a joint stock company making a loss and/or its equalisation reserves being exhausted. Previously, this 'safety rope' was shorter. Until 31 December 2011, the law in force at the time⁷ required the central budget to reimburse the MNB's losses if they were not covered by its profit and loss reserve and to replenish the MNB's ' forint exchange equalisation reserve' and 'foreign exchange securities equalisation reserve' if either of them became negative. The latter two transfers of money were not recorded in current budget expenditure, but were accounted for directly as an increase in public debt. The negative balances of one of the equalisation reserves triggered the budget having to pay reimbursements totalling almost HUF 150 bn on 6 occasions between 2002 and 2010 (SAO, 2013:10).

The extension of the rope was justified because it increased the MNB's room for manoeuvre and, at the same time, its responsibility to take decisions that are appropriate from a monetary point of view but adversely affect the MNB's profitability. Since the introduction of the new rules, the budget has not been under any obligation to reimburse the MNB.

The safety net in the opposite direction does not seem to exist, as the MNB cannot finance the central budget directly. However, it is precisely the 2020 crisis that has shown that central banks - not only the MNB but also several other central banks - have contributed to the safe financing of the soaring public debt through the secondary market for government securities, i.e. indirectly, by making significant purchases of government securities. Moreover, the MNB's outstanding profitability, due to low base rates, falling foreign exchange reserves and a weakening forint, also allowed it to pay dividends of HUF 50 bn and HUF 250 bn to its owner, the state, based on its 2019 and 2020 results, respectively, which directly reduced public debt. In addition, the "MNB supports the economic policy of the Government with the monetary policy instruments at its disposal without endangering its primary objective" (Lentner, 2014:12).

However, the rope connecting the two climbers is a win-win relationship only if the two climbers are heading in the same direction. Otherwise, the rope will sooner or later tighten and climbers will inevitably start pulling each other. In principle, monetary policy is trying to put fiscal policy back on track by making it more expensive to finance public debt. It is a conflictual, win-lose situation, the occurrence of the risk itself. While a low base rate typically improves central bank performance, a high base rate worsens the MNB's position, which may also lead to additional expenditure for the budget. In order to identify this risk, it is appropriate that the State Audit Office (hereinafter: SAO or Audit Office), as the main financial and economic control body of the National Assembly, should regularly assess these effects from the perspective of whether they represent a negative or positive risk to the fulfilment of the public debt rule. The public debt rule laid down in Hungary's Fundamental Law requires that the ratio of public debt to gross domestic product (GDP), i.e. the public debt ratio, should continue to decline year by year until the ratio reaches 50 per cent.

The SAO has no audit powers over the MNB's core tasks (e.g. the use of monetary instruments, foreign exchange reserves). For this reason, the SAO periodically analyses the issue of budgetary risks. The analysis published on the SAO's website in 2013 (SAO, 2013) assessed changes in the risk factors during the period 2007-2011, while the analysis published in 2018 (SAO, 2018) assessed the evolution of risk factors for the period 2012-2016. The analysis published in 2021 (SAO, 2021) took under scrutiny the budgetary risks of monetary policy in 2017-2019 and the first half of 2020. The analyses did not assess the appropriateness or effectiveness of monetary policy, but whether the implementation of monetary policy was associated with an increase or potential occurrence in the risk of the budget's reimbursement obligation to the MNB. This risk, taking into account the MNB's balance sheet total, could be in the magnitude of up to HUF 100 bn.

An analysis assessing the budgetary risks of monetary policy should also address the extent to which the 'two climbers' have moved in harmony, for example whether monetary policy has contributed to lowering the interest cost of public debt by lowering the base rate and keeping it low, or whether, on the contrary, it has placed a heavy burden on the backpack of its 'climbing partner' by keeping interest rates high. There were examples of both in the period 2007-2020 assessed by the SAO, which are discussed in detail in the analyses.

Based on the above, the occurrence of fiscal effects of monetary policy, i.e. negative or positive risks, can be grouped into two categories:

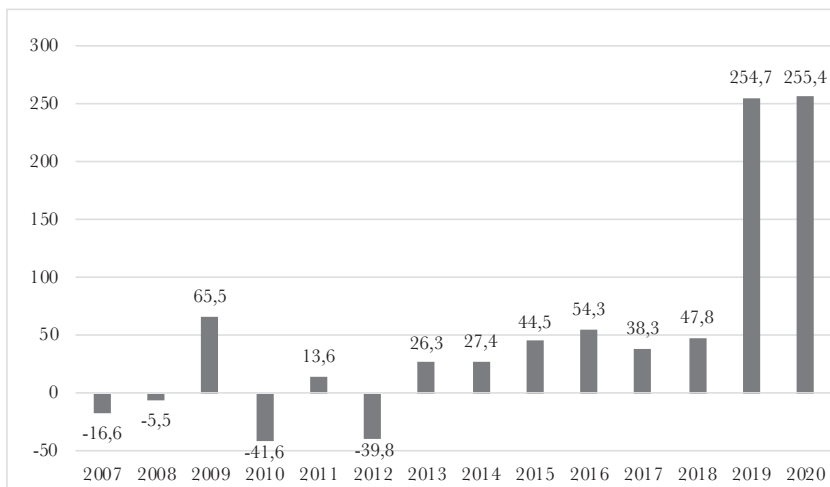
- we consider the obligation of the central budget to reimburse the MNB under the rules described above to be a direct negative budgetary risk. A positive risk is the payment of dividends by the MNB;
- an indirect negative budgetary risk is the increase in public debt as a result of monetary policy. The positive counterpart is monetary action to reduce public debt.

Drawing on the main conclusions of the three analyses mentioned above, the authors use the literature and the evidence to review the impact of monetary policy on fiscal developments between 2007 and 2020 and the factors and monetary policy choices that triggered these effects. A number of excellent papers have been published on the interaction between monetary and fiscal policy (e.g. also Matolcsy, Palotai, 2016 and Lentner, 2016). This paper does not attempt to provide a full account of the linkages, but rather to explore the monetary policy measures that have had considerable impact on the central budget.

CHANGES IN THE DIRECT BUDGETARY RISKS OF MONETARY POLICY AND
THE FACTORS AFFECTING THEM

The occurrence of a direct budgetary risk depends primarily on the profitability of the MNB’s management, i.e. whether the MNB has been profitable in each year and the size of the profit reserves it has been able to accumulate in profitable years. Therefore, we will first present the changes in the MNB’s profitability and assess the factors affecting it, and then turn to the second risk factor, i.e. changes in the equalisation reserves. The changes in the MNB’s profit for the year 2007-2020 are shown in Figure 1.

Figure 1: Changes in the MNB’s profit for the year 2007-2020 (HUF bn)

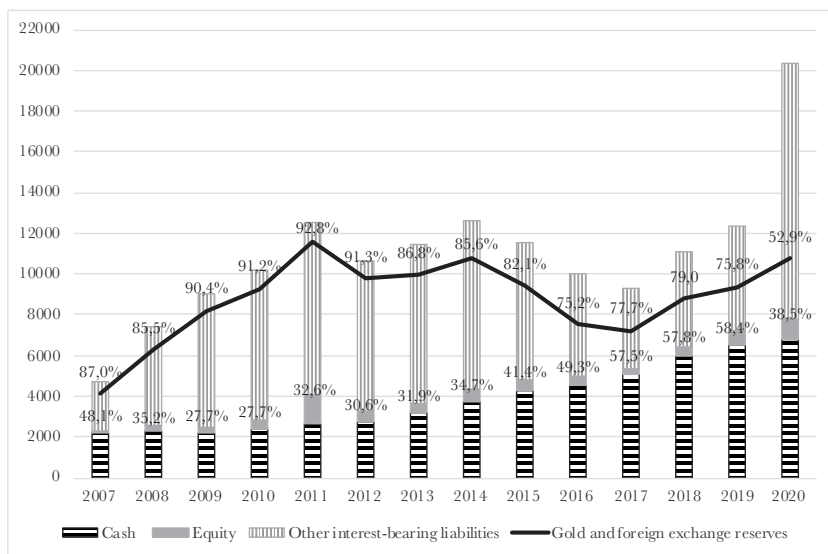


Source: Based on data from the MNB’s annual reports 2007-2020, SAO edited

The figure shows that the MNB’s operating profitability can be broken down into two distinct phases. Between 2007 and 2012, the MNB had an operating loss in all but two years. The central bank has made a profit every year since 2013. The MNB’s profitability cannot be assessed in isolation, as the central bank does not have a profit target, but must subordinate it to the achievement of monetary policy objectives. In the assessment, it is useful to start from the general context that foreign exchange reserves carry the risk of loss-making, as a significant part of the reserves must be held in liquid and/or low-risk assets, which typically yield low returns. The risk of loss-making is mitigated if the central bank can obtain cheap access to the sources financing the reserves. However, the pool of such sources is finite and, all other things being equal, the expansion of foreign exchange reserves increases the risk of loss and the contraction of foreign exchange reserves reduces it. In determining the size of foreign exchange reserves, though, safety takes precedence over profitability considerations. However, excessive reserve accumulation increases the risk of Central Bank losses to an unjustified extent.

The central bank's interest-balance (the difference between interest received and interest paid) is significantly affected by the weight of foreign exchange reserves in the central bank's balance sheet and the proportion of cheap funds in its balance sheet total. Figure 2 shows the changes in these over the period 2007-2020. In the figure, the bottom row shows the ratio of free liabilities to total assets, while the top row shows the ratio of gold and foreign exchange reserves to balance sheet total.

Figure 2: Changes in the MNB's funding structure and gold and foreign exchange reserves between 2007 and 2020 (HUF bn, %)



Source: Based on the data of MNB annual financial statements 2007-2020, SAO edited

Between 2007 and 2011, the amount of gold and foreign exchange reserves increased rapidly year on year. The increase was necessary because foreign exchange reserves were insufficient to cope with a shock during the global financial crisis that erupted in 2008 (Csontos-Szalai, 2015). The accumulated foreign exchange reserves by 2011 were already high by international standards relative to GDP or external indebtedness (Bóta, 2013), but the justification for this in a financially uncertain global environment was not debatable.

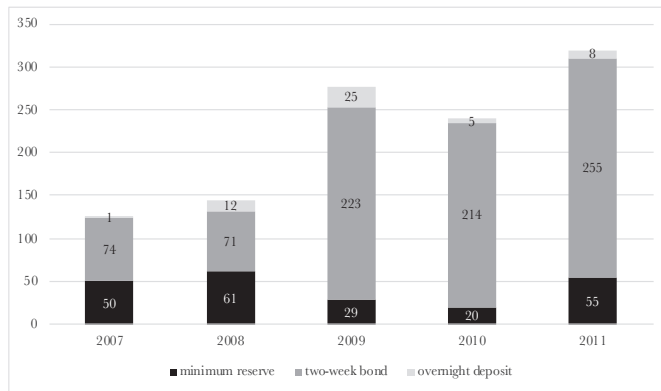
The growth of interest free liabilities did not keep pace with the growth of foreign exchange reserves until 2011, so that their share in liabilities declined from 48.1% in 2007 to 27.7% in 2009 and 2010, and the share of non-interest-bearing liabilities did not reach 40% until 2014. The increase in the MNB's equity, as a result of the rapid growth of the exchange rate equalisation reserve, could only slightly mitigate the need to increase interest-bearing liabilities. The resources needed to finance the foreign exchange reserve, which was almost tripled by 2011 compared to 2007 levels, were primarily provided by the same loan package from the International Monetary Fund, the World Bank and the European Commission, which also increased

the foreign exchange reserve. The source of the further increase in foreign exchange reserves was mainly provided by the MNB through the raising of liquid funds from commercial banks. The study published by the SAO in 2013 pointed out that, to this end, the MNB pursued a rather generous interest rate policy by international standards, in an admittedly generous attempt to improve the profitability of commercial banks, which had been hit by the financial crisis⁸. One such measure was that, unlike other European central banks, the MNB

- did not restrict the acceptance of deposits from commercial banks,
- did not widen the interest rate corridor when raising the base rate,
- paid interest at the same rate as the base rate even when the reserve ratio was higher than the minimum reserve ratio.

As a result, its interest expenditure increased sharply (see Figure 3) and the MNB’s interest-balance became heavily loss-making, increasing the direct budgetary risk.

Figure 3: Interest paid on the mandatory reserve, the two-week bonds and the overnight deposits 2007-2011 (HUF bn)



Source: Based on SAO, 2013, own edited

The SAO’s study also showed that the favourable conditions for commercial banks to deposit liquid bank assets with the MNB have reduced their interest in using their funds to expand lending or to purchase government securities. The MNB ended the year 2010 with a loss of more than HUF 41,557 million. The reason why the budget did not incur any reimbursement liability was that the MNB’s profit and loss reserve exceeded the amount of the loss. For similar reasons, MNB’s operation again showed a loss in 2012.

Several processes have contributed to the central bank’s sustained profitability from 2013 onwards. Among these, as shown in Figure 2, the share of free resources has increased again since 2012. This has created room for the MNB to gradually displace commercial banks’ liquid funds from its resources, substantially reducing the amount of interest paid to commercial banks. The MNB’s profitability benefited from the fact that the share of foreign exchange reserves on the asset side declined year on year from 2012 to 2016. The lower share of foreign exchange reserves meant that the weight of low-yielding assets on the central bank’s balance sheet decreased. At the same time, it was in principle possible to issue or buy higher-yielding assets, thereby increasing asset yields.

The reduction of foreign exchange reserves also served important economic policy and even social policy objectives. The phasing out of foreign currency loans has led to a strengthening of the banking and financial system and has reduced the country's external vulnerability. This reduced Hungary's risk premium and, through this, the cost of financing its public debt.

The most important step in reducing direct budgetary risks was the significant reduction in foreign exchange reserves between 2015 and 2017. The balanced growth of the Hungarian economy and the reduction in external vulnerabilities achieved allowed for a reduction in foreign exchange reserves from 2015 onwards (Hoffman – Kolozsi, 2017), and the MNB therefore reduced them significantly in several steps until 2017. The self-financing scheme and the HUF conversion programmes for foreign currency loans to households played a decisive role in this. With the implementation of the self-financing scheme and the shift of liquid bank assets to the government securities market, the bank deposit/deposit ratio on the MNB's balance sheet decreased significantly in 2015-2017, which improved the MNB's profitability (Matolcsy, 2020). The reduction in foreign exchange reserves was accompanied by a contraction in the balance sheet total and an increase in the share of non-interest-bearing liabilities, which accounted for 57.5% of liabilities in 2017.

From 2018, the MNB's foreign exchange reserves and balance sheet total started to increase again. However, this did not lead to any deterioration in the interest-balance, as cheap funds financed most of the balance sheet expansion. The stock of free (cash, equity) and overnight deposits accounted for 46.6% of the increase in the balance sheet total in 2018 and 94.2% in 2019. The latter had a negative interest during this period, i.e. it generated interest-balance for the MNB instead of interest expense. The balance sheet expansion has therefore not led to any significant cost increases on the resource side (Csortos – Nagy-Kékesi, 2020).

In 2018-2019, the Hungarian central bank's balance sheet total was equivalent to a quarter of Hungarian GDP, which was not high by international standards. This gave the MNB room for manoeuvre to play an active role in protecting the economy by increasing its balance sheet total significantly (to almost 40 per cent of GDP) when the coronavirus crisis broke out. Under the asset purchase programmes launched in May 2020, the MNB bought government securities for HUF 1 074,40 bn, corporate bonds for around HUF 850.0 bn and mortgage bonds at auctions and on the secondary market for HUF 60.5 bn in 2020. By purchasing government securities, the MNB sought to reduce the yields on long-term government securities, thereby helping to finance the increased budget deficit. At the same time, these instruments have provided the MNB with a higher yield, i.e. they were beneficial for the MNB's interest-balance. As the balance sheet total increased, the proportion of cheap liabilities on the MNB's balance sheet decreased, which had a negative impact on interest-balance. Among the liabilities, commercial banks' deposit holdings increased significantly, which represented an interest expense for the MNB during this period, as banks replaced overnight deposits with one-week deposits, which bear interest at the base rate and were activated from April 2020. There was also a significant increase in the stock of central budget deposits, which also bear interest at base rate, as the uncertain financial situation made it advisable to significantly increase the liquid reserves of the central budget. With the base interest rate low and further reduced in 2020, this did not represent a heavy burden for the MNB.

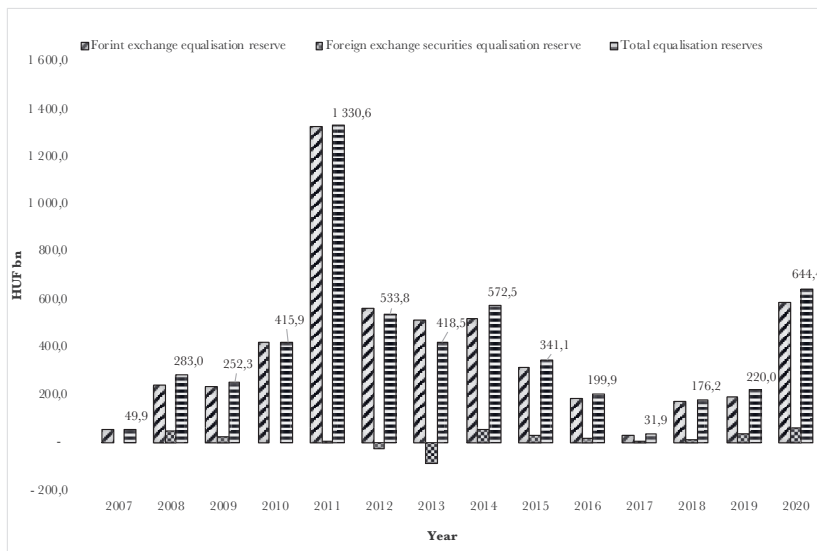
REVALUATION IMPACT AND CHANGES IN RESERVES

Gold and foreign exchange reserves account for the bulk of the MNB's assets, and therefore changes in the forint exchange rate have a significant impact on the value of these assets in forint terms. The revaluation of securities held in foreign currencies also has a significant impact. Revaluation can occur in both positive and negative directions. In order to counteract these fluctuations, the MNB is required to set up a forint exchange equalisation reserve and a foreign exchange securities equalisation reserve. The changes in these reserves over the period 2007-2020 is shown in Figure 4.

Over the period covered by the figure, the total amount of equalisation reserves has been consistently positive. It can be seen that the forint exchange equalisation reserve has fluctuated from one year to the next by up to several hundred bn forints as a result of changes in the forint exchange rate. The forint exchange equalisation reserve represents the unrealised revaluation result, which is determined by the size of the foreign currency holdings to be revalued and the difference between the current official exchange rate and the average exchange rate at the time of the purchase.

The foreign exchange securities equalisation reserve fluctuated to a lesser but not insignificant extent. This reserve, i.e., the market value difference of the securities in the MNB's portfolio, was positive in all years except 2012-2013. At the end of 2012-2013, the market spread of the securities in the MNB's portfolio showed a negative balance due to changes in yields. The central budget did not have a reimbursement commitment towards the MNB because the aggregated balance of the equalisation reserves was positive (SAO, 2018).

Figure 4: Development of the MNB's equalisation reserves 2007-2020 (HUF bn)



Source: Based on the data of MNB annual statements 2007-2020, SAO edited

Changes in the exchange rate of foreign currency holdings have two effects on the MNB's balance sheet. When foreign currency is sold, the MNB realises a profit or loss on the difference between the exchange rate at which the foreign currency is bought and sold. The difference directly affects the MNB's profit or loss. Conversely, the revaluation of foreign currency holdings does not change the MNB's balance sheet result, but is presented in the balance sheet as a change in the equalisation reserve (MNB Annual Reports, 2016-2020). Table 1 shows these two effects of the exchange rate change separately, but only for the last four years, as by 2017 the forint equalisation reserve accumulated in earlier years had been reduced to a minimum level, and consequently the reserves accumulated in earlier years no longer play a role in managing future risks.

Table 1: *Total revaluation impact of exchange rate changes on foreign currency stocks 2017-2020 (HUF bn)*

Description	2017	2018	2019	2020
Exchange rate gains and losses (realised and conversion)	61,4	74,0	229,1	286,1
Change in equalisation reserve in the balance sheet (unrealised revaluation result)	-154,4	141,6	18,2	398,6
Total impact of exchange rate changes	-93,0	215,6	247,3	684,7

Source: *Based on the data of MNB annual statements 2017-2020, own edited*

The overall revaluation impact from exchange rate changes was negative in 2017, reflecting the strengthening of the forint and the narrowing of the gap between the average exchange rate and the official exchange rate. In 2017, the total net revaluation impact was a loss of HUF 93.0 bn. It is noteworthy that the strengthening of the forint exchange rate has an immediate negative impact on the forint exchange equalisation reserve, while the realised result remains positive as long as the average exchange rate of the reserve is higher than the exchange rate at the time of selling, i.e. current rate. In 2018-2020, the overall revaluation impact turned positive as the forint exchange rate weakened and the amount of the foreign exchange reserve increased. The MNB realised exchange rate gains of HUF 61.4 bn in 2017, HUF 74.0 bn in 2018, HUF 229.1 bn in 2019 and HUF 286.1 bn in 2020 on sales and conversions associated with the daily change in the net foreign exchange position (MNB Annual Reports, 2016-2020). In 2019, the realised and conversion gains from exchange rate changes increased sharply, while the unrealised exchange rate effect decreased. This is related to both sales and purchases due to the MNB's new investment strategy and the self-binding of the gold reserve. The revaluation impact of almost HUF 400 bn by the end of 2020 was related to the sharp weakening of the forint in 2020 and a rise in foreign exchange reserves of more than 30.0%, to over HUF 2,900 bn.

The HUF 644.4 bn equalisation reserve at the end of 2020 could turn negative after an exchange rate appreciation of around 13%, assuming unchanged HUF 13,128.3 bn of foreign currency claims and the entry rate.

The equalisation reserves form part of the central bank's equity and thus participate in the financing of its assets. However, these reserves are rapidly changing items on the liabili-

ties side. This does not pose a financing problem though, as the amount of the equalisation reserves increases or decreases in line with the change in the asset side due to the revaluation. A risk arises if the equalisation reserves become negative and the MNB is unable to offset this from its accumulated profit reserve or from its profit of the current year, as the central government then incurs a reimbursement liability. To understand the likelihood of this risk materialising, let us look at how the MNB's reserves have changed over the last four years. The data are summarised in Table 2.

As the table indicates, the MNB's accumulated profit reserve and its equalisation reserves have never been in deficit in any year. There were no reimbursement obligations to the budget, so there was no direct budgetary risk arising from the MNB's monetary activity. On the contrary, the reserves increased by almost 4.4 times by the end of 2020 compared to 2017, thus minimising the risk that the budget will have a reimbursement obligation towards the MNB in a few years. Nevertheless, it is appropriate to take stock of the developments that, if they were to occur, would have a negative impact on the MNB's profitability, i.e. increase the risk that the reserves would eventually be exhausted and the central budget would be liable to reimburse the MNB.

Table 2: Changes in the MNB balance sheet data sensitive to the budgetary reimbursement liability 2017-2020 (HUF bn)

Description	2017	2018	2019	2020
Profit of the current year	38,3	47,8	254,7	255,4
Accumulated profit reserve	162,2	200,4	198,2	202,9
Forint exchange equalisation reserve	28,0	169,6	187,8	586,4
Foreign exchange securities equalisation reserve	3,9	6,6	32,2	58,0
Total equalisation reserves	31,9	176,2	220,0	644,4
Reimbursement liability of the central budget due to negative equalisation reserves	0	0	0	0
Total reserves forming part of equity	194,1	376,6	418,2	847,3
Dividend paid	0,0	0,0	50,0	250,0

Source: Based on the data of MNB annual financial statements 2017-2020, SAO edited

FACTORS AFFECTING THE MNB'S PROFITABILITY AND THE RELATED BUDGETARY RISKS

The MNB's profitability may be affected by its activities and the fulfilment of its statutory tasks, on the one hand, and by external factors, on the other. External impacts include the performance of the Hungarian economy, changes in the international economic environment. It is therefore appropriate to take these risk factors into account.

Risk of deterioration of interest-balance:

- If the central bank's balance sheet total continues to increase (as a result of an extension in foreign exchange reserves and/or an augmentation in the MNB's domestic role), and this is accompanied by a decrease of the ratio of interest-free liabilities, interest-balance will be negatively affected.
- In parallel with the increase in the base rate, the interest cost of deposits held with the MNB also increases. The risk of the interest-balance turning negative is particularly increased would rise more than the yields that could be obtained by holding foreign reserves. If domestic interest rates rise faster than interest rates relevant to investing foreign exchange reserves. These reserves are financed mainly from domestic sources, so the interest payable on them would increase to a greater extent than the yield on the foreign exchange reserve deposit.

The appreciation of the forint against the currencies constituting the foreign reserve assets would reduce the spread between the exchange rate at the time of acquisition and the exchange rate at the time of sale, i.e. the profit realised on the sale of the foreign currency, which would tend to reduce the exchange rate balance. The exchange rate balance would also be negatively affected by a reduction in the volume of foreign exchange sales by the central bank.

It follows from the above that there is a real risk that the MNB's interest-balance would turn negative again and its exchange rate balance would decline, with the result that the MNB's profitability would turn negative. To compensate for this, the available reserves appear to be sufficient for the time being for several years, so there is no significant risk that the budget will have a commitment to pay in a few years' time due to the central bank's loss and/or the negative turn in the equalisation reserves.

INDIRECT BUDGETARY IMPACTS OF THE MONETARY POLICY

Between 2007 and 2012, the MNB sought to counteract the typically overspending fiscal policy by implementing a tight monetary policy focused on the inflation target. It kept the base rate high, attracting liquid funds from commercial banks (see above), which therefore did not create additional demand for government securities. Both factors had an upward effect on the level of government securities yields, i.e. they contributed to the fact that government security in 2010-2011 was on average issued at around 6% interest rate.

The MNB's interest rate policy changed its direction in August 2012. From that date the Monetary Council of the MNB lowered the base rate, which was kept at 6.75%, in several steps to 0.9% by the end of May 2016. The 0.9% rate remained unchanged until June 2020. In addition to monetary policy intentions, the lowering and subsequent maintenance of the base rate was made possible by the improvement in the fiscal balance of Hungary, the reduction in inflation, the emergence of a significant trade surplus and the return to a dynamic growth path of the Hungarian economy from 2013 onwards. Monetary policy, through its conventional and unconventional instruments, has also contributed significantly to the latter.

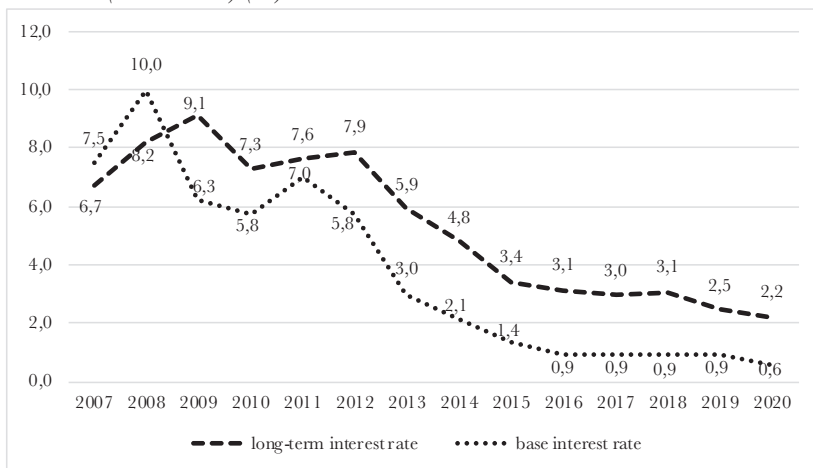
In particular, the continuous, multi-phased and steep reduction of the central bank's base rate has lowered the interest rates on government securities and, through them, the cost of debt financing. Despite the continued nominal increase in public debt, the debt service costs paid in 2016 were HUF 246 bn lower than the amount paid in 2013 (SAO, 2018:15), and in 2017-2019 there were overall additional savings of HUF 241 bn in interest on public debt compared to 2016 (SAO, 2021:19).

In March 2019, the MNB tightened monetary policy somewhat, but at that time it did not raise the base rate, but tightened the so-called interest rate corridor, adjusting the negative interest rate on overnight deposits of commercial banks in the central bank from -0.15% to -0.05%. The tightening implemented in this way did not increase the cost of financing public debt.

To counter the negative economic effects of the pandemic in 2020 and to prevent the emergence of turbulence in the money market, the MNB cut the base rate of the central bank in two steps to 0.75% and then to 0.6%, which served to expand the money supply in the economy and thus cushion the economic downturn. This move also had the effect of reducing the cost of financing public debt.

The reason for the caution in the last sentence is that a large proportion of public debt is financed by instruments, whose yields are not immediately and directly affected by changes in the base rate of the central bank. A decrease or increase of the base rate has a lagged effect on the cost of financing public debt. Therefore, rather than looking at short-term effects, it seemed appropriate to examine the relationship between changes in the base rate and the level of interest rates on government securities with maturities of more than ten years (in the jargon, the long-term interest rate). This relationship is also justified by the fact that the convergence of the long-term interest rate level towards the euro area interest rate level is one of the Maastricht criteria. The relationship examined is illustrated in Figure 5.

Figure 5: Changes in the central bank base rate and the interest rate on government securities with a maturity of 10 years or more (2007-2020) (%)



Source: Based on SAO (2021), SAO edited

The figure shows an almost textbook correlation: the long-term interest rate has followed the base rate with a slight time lag and more protracted changes, but the long-term government securities rate has always been much higher than the current base rate, which is normal for an emerging market. At the same time, the figure clearly shows that the reduction in the base rate of the central bank has made a very significant contribution to lowering the cost of financing public debt.

In 2020, the central bank has contributed to lowering yields on longer-term government securities not only by lowering the base rate but also by buying government securities. The central bank's asset purchases in the secondary market for government securities from May 2020 onwards have tended to purchase longer-dated government securities, with rising demand pushing yields lower. At the end of 2020, the central bank held more than HUF 1,100 bn worth of government securities.

THE IMPACT OF MONETARY POLICY ON THE FINANCING STRUCTURE OF PUBLIC DEBT

Until 2020, the central bank did not participate in the financing of public debt by purchasing government securities, but monetary policy measures had a significant impact on the structure of public debt financing. On the one hand, they have contributed to reducing the share of foreign currency denominated public debt and, on the other hand, they have 'diverted' domestic resources towards the financing of public debt. Let us review the most important measures and then look at their impact.

The MNB introduced a self-financing scheme in April 2014, changing the structure of central bank assets. Until mid-2015, the self-financing scheme consisted of a series of steps in which the central bank, the Government Debt Management Agency and domestic commercial banks cooperated. This included the conversion, in early August 2014, of the two-week central bank bond into a two-week deposit, which was not available for subscription by foreigners and non-bank entities.

The outflow of commercial bank funds from the central bank's benchmark facility, together with reduced liquidity, increased banks' interest rate risk, which was managed through the 3- or 5-year and later 10-year interest rate swap (IRS) facility introduced by the MNB. In the IRS operation, the MNB converted banks' fixed-rate government securities into floating-variable rate bonds. In addition to encouraging banks to buy government securities, the IRS had a particular impact on the decline in long-term government security yields.

As a result of the self-financing scheme, the external vulnerability of the Hungarian economy has been reduced as a result of the shift of public debt financing towards the forint. As demand for bank government securities rose, yields on forint government securities fell. From 2014 onwards, the share of internal funding has steadily increased, making the sustainability of the funding of the general government and the stability of the financial system more secure. Through the Government Debt Management Agency the Hungarian State repaid more than €9 bn of foreign currency debt in HUF by July 2016, reducing the foreign currency ratio of public debt from 40.1% to 25.3% (SAO, 2018). The breakdown of central public

debt by forint and foreign currency debt from 2012 to 2020, excluding other liabilities, is shown in Table 3.

In the crisis-hit year 2020, the forint debt-to-GDP ratio fell back to around the 2018 level, with an increase of 2.6 percentage points in favour of the foreign exchange ratio, at the expense of an increase in external vulnerabilities.

The HUF conversion of foreign currency loans had a positive impact on economic developments, as the additional burden of the weakening exchange rate was no longer borne by the foreign currency indebted households. The financial process also had a significant social impact. The predictability of repayment obligations has stabilised the situation of the Hungarian families concerned. By summer 2014, the amount of central bank foreign exchange reserves separated for foreign currency conversion covered the commercial banks' foreign exchange demand for the HUF conversion of around EUR 8 bn (SAO, 2018).

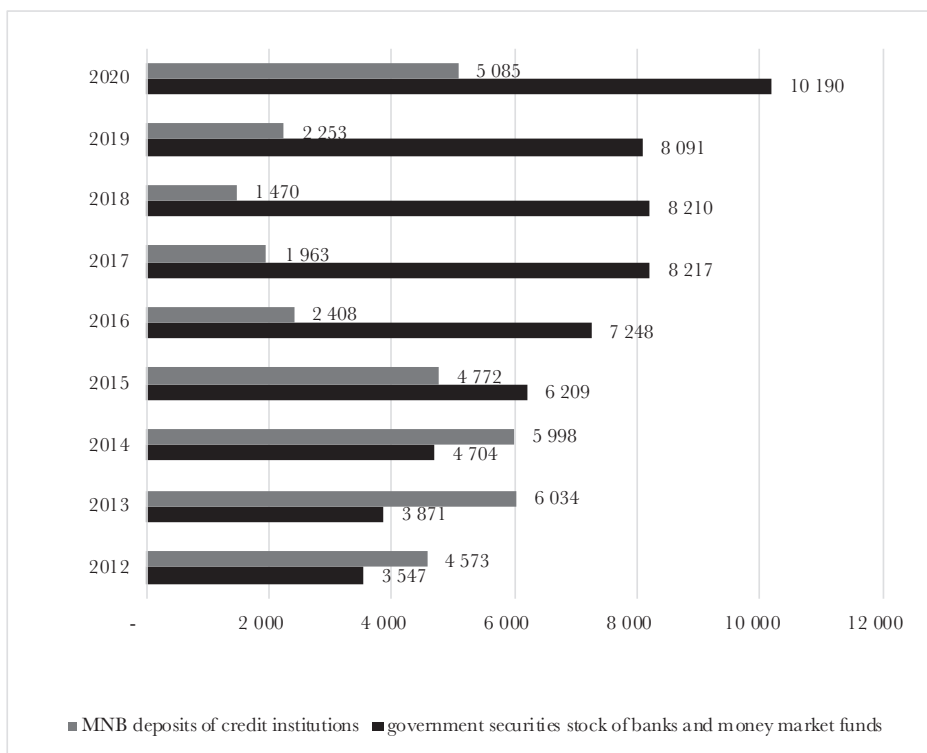
Table 3: Structure of central public debt by forint and foreign currency breakdown excluding other liabilities (2012-2020)

Breakdown of foreign currency and forint debt	2012	2013	2014	2015	2016	2017	2018	2019	2020
Share of forint debt	58,1%	59,0%	61,2%	65,6%	74,7%	78,2%	79,9%	82,6%	80,0%
Share of foreign currency debt	40,1%	40,5%	37,5%	31,3%	25,3%	21,8%	20,1%	17,4%	20,0%
Forint debt (HUF bn)	12 042	12 976	14 612	16 208	18 431	20 689	22 796	24 357	29 237
Foreign currency debt (HUF bn)	8 327	8 905	8 958	7 736	6 257	5 783	5 725	5 121	7 318

Source: SAO 2018, 2021

As commercial banks had a larger share in financing public debt through the introduction of a self-financing scheme, the dependence of the government securities market from non-resident clients has been reduced, the share of internal financing of debt increased. As a result, the country's external exposure has declined. Moreover, the shift in the internal financing of public debt towards financing in forint has reduced the foreign exchange exposure of public debt. By the self-financing scheme and by changing the MNB's guiding policy instruments (central bank bond, central bank deposit) and limiting their volume, the central bank has encouraged commercial banks to take a larger share of the public debt financing. The result of this effort is illustrated in Figure 6.

Figure 6: Trends in banks' government securities investments and MNB deposits and bonds in 2012-2020 (in HUF bn)



Source: ÁKK 2021, based on annual reports of the MNB, SAO edited

The share of commercial banks and money market funds in the financing of public debt more than doubled from HUF 3,547 bn at the end of 2012 to HUF 7 248 bn at the end of 2016, financing approximately one third of public debt. In 2012-2014, the stock of government securities held by banks and money market funds was lower than their deposits and bonds with the central bank. However, from 2015 to 2017, the share of government securities in bank claims increased dynamically and increasingly exceeded the commercial bank liquidity held with the MNB. A comparison of bank stocks of government securities with the change in banks' deposits and bonds held with the MNB clearly shows that the central bank has succeeded in diverting the bank liquidity previously held by the MNB towards the financing of public debt. For two years after 2017, the amount of government securities held by banks and money market funds declined slightly, as banks used their resources to finance the growing demand for credit from businesses and households.

In 2020, banks' preference for safe investment of government securities resumed, resulting in an increase of more than HUF 2,000 bn in the stock of government securities held by banks and money market funds, to more than HUF 10,000 bn, about a quarter of the 2019

stock. (The figures are somewhat distorted by the fact that until 2019 banks were allowed to hold government securities repurchased from their retail clients, and this stock they retained remained on their books as retail government securities. The removal of this option increased the stock of government securities held by banks and money market funds in the financial statements and reduced the stock recorded as household investment.) At the same time, however, the stock of deposits held by commercial banks with the MNB more than doubled, meaning that in 2020, bank liquidity was no longer being squeezed out of the MNB and into the government securities market.

To sum up, it can be concluded that monetary policy measures have contributed to an increase in the share of public debt financed from domestic funds, and through this to more secure financing and a reduction in costs.

OUTLOOK

After 2012, Hungary embarked on a development path characterised by both dynamic economic growth and the preservation of external and internal economic balance. To achieve this, monetary and fiscal policy needed to cooperate well, and a number of measures and their positive effects have been described in this article. However, it should also be noted that in a period of dynamic and balanced economic growth, it is relatively easy to harmonise the two policies, to achieve and maintain a win-win situation. Returning to the climber analogy used at the beginning of the article, we can say that the two climbers want to reach the same summit in good weather and with good visibility. The good weather ended at the beginning of 2020. And in the big storm that followed, the common goal was to cushion the downturn, which monetary policy measures effectively helped to do.

But once the crisis is over, the conditions for cooperation will change. The common goal of achieving dynamic, balanced and sustainable growth will remain, but the fiscal policy set by the political bodies will place more emphasis on growth, and the statutory obligation of the MNB will be to maintain price stability, which requires balanced economic and fiscal developments. This is a creative tension that the advocates of monetary policy independence have consciously undertaken. Their starting point is the historical experience that if inflation is given free rein in order to emerge quickly from an economic recession, the result will be stagflation, i.e. economic stagnation with high inflation. However, the independent central bank has the duty to act to ensure price stability. The tightening of monetary policy increases the likelihood of direct and indirect budgetary risks. In this case, the most severe direct budgetary risk is that the central bank's interest rate result could be negatively affected by a much faster increase in domestic interest rates than in international interest rates, which are relevant for foreign exchange reserves.

The MNB's balance sheet data for the first half of 2021 indicate that these risks have increased. In the first half of 2021, the MNB recorded a profit of HUF 8.8 bn, compared with HUF 255.4 bn at the end of the previous year. The gain from changes in foreign exchange rates has narrowed considerably, but remains the most significant profit item. The interest-balance turned negative, despite a decrease in gold and foreign exchange reserves by

HUF 1,457.0 bn, while maintaining safe levels. The negative result is partly explained by the fact that the share of interest-free liabilities in the balance sheet fell from 38.5% at end-2020 to 36.2%. Cash in circulation increased by HUF 209.3 bn, while equity fell by almost 60% (HUF 638.1 bn).

The foreign currency interest-balance amounted to a surplus of HUF 0.9 bn in the first half of 2021, HUF 15.4 bn lower than in the same period of the previous year. Interest-balance on international reserves decreased in the low international interest rate environment.

Due to the changing global economic environment and the high domestic inflation that has emerged, the central bank started monetary tightening from June 2021, with monthly increases in the base rate. The 30 basis-point increase at the end of June had little impact on the profitability for the first half of 2021. However, the rising base rate will shift central bank profitability in the second half of the year in a negative direction, as international interest rates relevant for the investment of foreign reserves will not or barely rise for the time being, while the interest rate paid on domestic funds, which finance a large share of foreign reserves, will rise rapidly. All of these factors point towards the emergence of direct budgetary risks. The MNB's accumulated profit reserves, after the dividend payment of HUF 250.0 million, stood at HUF 208.3 bn at the end of the first half of 2021. The equalisation reserves together amounted to HUF 243.7 bn. In view of this, it is unlikely that the budget will have a compensation liability in 2022, but a reduction of several hundred bn in the amount of reserves during the first half of 2021 indicates a serious budgetary risk for the future.

More serious than the direct risks are the indirect budgetary risks, as the increase in the central bank base rate will have the effect of raising interest payments on public debt in forint, which will significantly increase the interest expenditure of the central budget, given that the bulk of public debt (more than 80% at end-2020) was financed by government securities denominated in forint. The increase in the base rate has a lagged impact on the cost of financing public debt, as it does not directly affect the interest rate on longer-term fixed-rate bonds. In fact, however, if the current interest rate level is significantly higher than the previous fixed rate, investors will seek to replace their bonds with higher yielding paper, even at a loss of exchange rates, which creates both an interest rate and a funding risk for the financing of public debt.

In the first half of 2021, the MNB participated in the financing of public debt through buying government securities on the secondary market with an additional amount of almost HUF 1,400 bn, on top of the more than HUF 1,100 bn in 2020. The decision of the Monetary Council to phase out the central bank's purchases of government bonds will make it more difficult to finance the high fiscal deficit from domestic funds, due to the large central budget spending planned for 2021-2022 to stimulate the economy. In addition, high inflation is increasing the likelihood that households will invest a larger share of their savings in capital goods that promise above-inflation returns. The resulting decrease in demand for government securities will have the effect of raising both short-term and long-term interest rates.

The rise in interest rates also makes it more expensive to invest in partly credit-financed projects. The resulting deterioration in rates of return is forcing many domestic firms to postpone investment, leading to a slowdown in economic growth.

To return to the metaphor of the title of our article, the steeper the climb, i.e. the more inflationary pressures monetary policy has to counterbalance, the more its necessary actions will increase the indirect and direct budgetary risks, i.e. it will put more and more burden on the back of the other climber, fiscal policy, slowing down its movement.

Among these circumstances, a win-win situation could result if the 'two climbers' jointly find the nearest peak to which they both have to climb in order to reach the target summit. The closest target is the reduction of the public debt ratio, which has once again become a constitutional obligation as the economic downturn has passed. This is supported by the dynamic rise in the denominator of the indicator, GDP at current prices. Consequently, increasing GDP is also important for achieving equilibrium.

A greater challenge is to reduce the government sector deficit below three per cent of GDP while maintaining dynamic economic growth, i.e. to reduce the deficit-to-GDP ratio while also contributing to rapid GDP growth. However, the deficit-to-GDP ratio of 7.5 per cent in 2021 cannot be brought below three per cent of GDP in two to three years just by increasing GDP. This will require abandoning budgetary spending that is no longer strictly necessary to deal with the aftermath of the crisis and to re-launch the economy. Reducing the budget deficit will also reduce aggregate demand and thus has a downward effect on inflation.

We also ask the question: in such a situation, how appropriate is it to use unconventional monetary instruments to support the dynamics of the economy, even at the cost of increasing the balance sheet total of the MNB? It follows from what has been written above that this would increase direct budgetary risks and tie up commercial bank resources. This is also evident from the central bank's balance sheet in the first half of 2021, where the balance sheet total was 6.7% higher at 30 June 2021 compared to the end of 2020. The amount of gold and foreign exchange reserves has decreased, as previously described, and consequently the expansion has been driven by the MNB's role in supporting domestic economic growth. On the asset side, the government securities purchase scheme, the Growth Credit Scheme extended with a new scheme, the three-year and five-year covered forint loans and the measures taken under the Growth Bond Scheme contributed significantly to the increase in the balance sheet total. On the liabilities side, this was financed by an increase in deposits of credit institutions of around 37% compared to the end of 2020. Banks' forint deposits increased by HUF 1,858.7 bn, of which HUF 1,323.4 bn was accounted for by an increase in the stock of one-week money market deposits, which carry relatively high interest rates. There was also a modest increase in the stock of government deposits in forint and foreign currency, from HUF 2,890.3 bn to HUF 2,979.2 bn. As a result of these changes, interest-balance suffered a loss of HUF 13.3 billion. The figures show that a significant expansion of the balance sheet total is only possible by increasing the amount of high interest-bearing liabilities, which in turn greatly increases the chances of direct budgetary risks occurring.

In view of the above, only the use of unconventional monetary instruments that promote quality spending, for example by linking competitiveness to greening the economy, seems to be effective. In this case, the benefits may be greater than the increase in budgetary risks. Answering questions on the active role of monetary policy is beyond the competence of the State Audit Office. However, the raising of these questions points to the need for good coope-

ration between fiscal and monetary policy in the re-launching phase of the economy, as this is the only way to maintain high investment rates, increase the domestic share of public debt financing and avoid a significant increase in the interest burden on public debt by keeping long-term interest rates low.

NOTES

- ¹ Fundamental Law of Hungary, Article 41 (1)
- ² Act CXXXIX of 2013 on the Magyar Nemzeti Bank
- ³ and Section 4 (1) of the MNB Act
- ⁴ Section 166 (4) of Act CXXXIX of 2013 on the Magyar Nemzeti Bank
- ⁵ The HUF exchange equalisation reserve and the foreign exchange securities equalisation reserve. The former is the difference between the value of the MNB's receivables and liabilities denominated in foreign currency at the official exchange rate and the average purchase price, and the latter is the difference established based on the market valuation of the MNB's receivables denominated in foreign currency based on securities.
- ⁶ Section 147 (3) of Act CXXXIX of 2013 on the Magyar Nemzeti Bank
- ⁷ Section 17 (4)-(5) of Act CXXXIX of 2001 on the Magyar Nemzeti Bank
- ⁸ Report of the Magyar Nemzeti Bank 2009, pp. 21-22 and Ferenc Karvalits (2013), pp. 73-75

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