

Csaba Balogh: The role of MNB bills in domestic financial markets. What is the connection between the large volume of MNB bills, bank lending and demand in the government securities markets?*

The two-week MNB bill is a central component of Hungary's monetary policy instruments; it is a key instrument of the central bank, the interest rate of which is identical to the central bank base rate. By mid-2009, the outstanding amount of MNB bills reached HUF 3,000 billion, which – in addition to representing one third of the central bank's liabilities – accounts for a significant part of the domestic banking sector's liquid assets. By using the two-week bill to absorb the excess liquidity of the banking sector, the central bank ensures that developments in banks' interest rates will be driven by the MNB bill as an opportunity cost. The volume of these liquid assets builds up gradually, regardless of banks' willingness to lend. Indeed, the growth observed in the holdings of MNB bills helped to relieve the liquidity tensions of credit institutions and contributed to gradually reducing the role of this factor in the decline in lending activity in 2009. Nonetheless, lending remained restrained despite the ample liquidity, which primarily reflects banks' deteriorating risk appetite. One of the major correlations in the central bank's balance sheet is the fact that, while credit institutions are free to decide on the volume of two-week MNB bills they purchase at the individual level, they are unable to affect the volume of bills in the overall banking sector. The accelerated growth rate in the volume of two-week bills observed in the previous year resulted from the use of foreign currency loans to finance the general government, which implies that the large volume of two-week bills is a consequence of poor demand in the government securities market, rather than the reason for this. In a regional comparison, however, the relatively high central bank base rate does not affect the volume of the key instrument, as the central bank interest rate has no direct impact on the liquidity of the banking sector.

INTRODUCTION

The key policy rate of the Magyar Nemzeti Bank (the central bank base rate) is the interest rate remunerated on the two-week MNB bills purchased by credit institutions. Consequently, the two-week bill is a key instrument in the monetary policy of Hungary. Using the two-week bills, credit institutions deposit liquidity with the MNB (which, in fact, translates into funds deposited into central bank accounts, i.e. central bank money). The key instrument therefore constitutes the central bank's liabilities to credit institutions, which means that the banking sector has excess liquidity. While excess liquidity has consistently characterised Hungary since 1995, this phenomenon is not specific to Hungary. It has been observed in other Central European economies following the political transition and is a frequent phenomenon in other emerging countries as well. It was typically generated by various forms of external capital inflows, while the selected exchange rate system had a fundamental impact as well.

Since the introduction of this instrument in 2007 the amount of two-week bills has tripled, rising to more HUF 3,000 billion by August 2009. This accounts for more than one third of the total liabilities of the central bank and at the same time represents a large portion – around one-tenth – of the banking sector's total assets. The positive inflow observed in the past year resulted primarily from the foreign currency financing of the government deficit, and conversion of the related foreign currency funds into forints at the MNB. In respect of these rapid flows, questions came to the forefront about the possible consequences of this process. In this regard, several analyses have been published on how the MNB bills may crowd out government securities from the market, and how the large volume of bills may lead to a decline in banks' lending activity through their favourable interest rates.

On the other hand, several foreign central banks have started the process of quantitative easing, also resulting in expanding balance sheets at these central banks. Nonetheless, it is important to stress that the growth in the volume of MNB

* The views expressed in this article are those of the author(s) and do not necessarily reflect the official view of the Magyar Nemzeti Bank.

bills observed in the previous period did not result from classical quantitative easing, i.e. active market intervention by the MNB, but instead primarily stemmed from factors beyond the central bank's influence.

In this paper, we first present the role of the MNB bill in the central bank's monetary policy, followed by an overview of factors determining developments in the volume of the bills. Then we provide a detailed analysis of three issues related to the volume of bills. First, whether the central bank base rate affects the volume of these bills; second, whether the large amount of bills influences demand for government securities; and third, their effect on bank lending.

THE ROLE OF MNB BILLS IN MONETARY POLICY

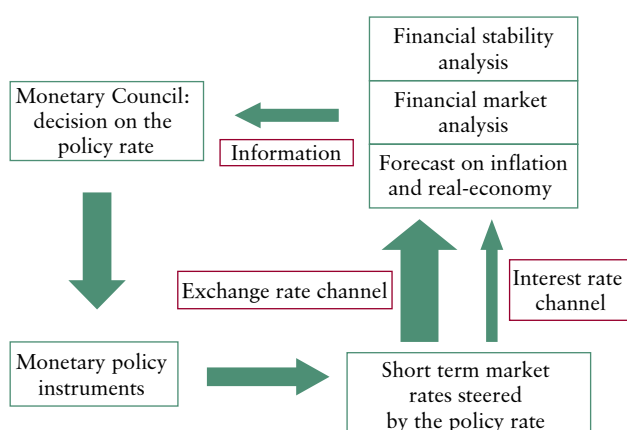
In 2001 the MNB decided to abandon its exchange rate target (crawling peg exchange rate regime) and adopt an inflation targeting monetary system. In small, open economies this means that monetary policy makers (in our case the Monetary Council) set the key policy rate relying on inflation and real economy forecasts as well as money market and financial stability analyses. In the next step, through monetary policy instruments, the central bank ensures that financial market yields and expectations about those yields adjust to the key policy rate. Through changes in the forint exchange rate on the one hand, and Hungarian interest rate levels on the other hand, shifts in market yields modify the

behaviour of market participants and change economic prospects; thus, by updating central bank forecasts and analyses, the Monetary Council has the opportunity at its next session to base its decision on new information.

The monetary policy instruments of the central bank are defined as the sum of the forint denominated money market and capital market operations performed by the MNB. The most important element of forint market instruments is the main policy instrument, i.e. the two-week MNB bill, the interest rate of which controls forint market yields.¹ The credit institution counterparts of the MNB (hereinafter simply banks) can decide how many bills they wish to buy at the weekly auctions, i.e. how much of their holdings with the MNB they wish to hold in two-week bills. All bids submitted by the banks are accepted by the MNB without restriction. Moreover, in order to provide banks with sufficient central bank money to fulfil their payment obligations, the central bank traditionally supports banks' liquidity management through two additional instruments: the reserve requirement, which is subject to a monthly averaging mechanism, and the interest rate corridor.² In order to fulfil their payment obligations resulting from larger interbank and client transactions, individual banks' demand for central bank money may increase significantly on certain days. Banks can satisfy their liquidity needs primarily on the interbank market, but to prevent individual banks' temporary liquidity surplus or liquidity shortage from generating drastic fluctuations in interbank yields, in line with the general practice of central banks, the MNB has adopted the two instruments described above.

Chart 1

Monetary policy decision-making mechanism of the MNB



The provisions of the reserve requirement ensure that banks maintain a minimum account balance with the MNB at all times. Indeed, banks may fulfil their reserve requirement by depositing the required funds calculated as a monthly average into their "current account" (settlement account) at the central bank. This allows them to adjust their day-to-day account balances flexibly during the specific month, dampening the effect of potential liquidity shocks. In addition, up to the amount of their reserve requirement, the central bank pays the banks the central bank base rate; therefore, they do not suffer an interest loss.³ On the other hand, as the portion of the account balance in excess of the reserve amount does not bear interest, on a monthly average the account balances banks held with the MNB are practically always limited to the currently required reserves.

¹ The MNB has used deposit-type policy instruments since 1995. Initially, this was a reverse repo operation, which was replaced by the one-month deposit in 1997, and the two-week deposit in 1999. In 2007, the two-week deposit was replaced by the two-week MNB bill. For more details, please see Balogh-Varga (2006) and MNB (2002, 2006).

² With a view to assisting banks in their liquidity management, from the autumn of 2008 the MNB introduced several additional instruments, including the overnight FX swap facility.

³ By contrast, before Hungary's accession to the EU in 2004 the interest rate paid by the MNB was lower than the market yields, and therefore the minimum reserve system featured an implicit tax burden at the time.

The other instrument is the interest rate corridor defined by interest rates on overnight central bank loan and deposit instruments, which are set close to the key policy rate. The width of the interest rate corridor currently maintained by the MNB around the key policy rate is ± 0.5 percentage points. Accordingly, if the base rate is 8%, banks can obtain overnight loans at an interest rate of 8.5% and receive interest of 7.5% on their overnight deposits. The interest rate corridor moderates the volatility of interbank interest rates by setting a lower and an upper limit, over which banks will not be willing to carry out interbank transactions. If the conditions are worse than that, it will be more advantageous for banks to use the central bank deposit or loan facility. Under normal market circumstances, banks' recourse to overnight instruments is restricted to a minimum as they typically manage their liquidity through transactions conducted in the interbank market.⁴

On the whole, under normal market circumstances, central bank instruments facilitate the implementation of monetary policy by keeping interbank interest rates close to the interest rate on the two-week MNB bill, while the fluctuation in the latter is mitigated by the minimum reserve requirement and the interest rate corridor. Interbank interest rates, on their part, determine the opportunity cost of banks' funds, on the basis of which banks price their deposit and loan products. Therefore, it is the key policy rate and expectations about the key policy rate that eventually determine the relevant deposit and loan interest rates for actors of the economy.

THE INCREASE OBSERVED IN THE VOLUME OF MNB BILLS IN THE PAST YEAR PRIMARILY REFLECTS A MOUNTING STOCK OF FOREIGN CURRENCY RESERVES

Although, based on the above, the MNB considers the interest rate on the two-week bill to be of key importance, the total volume of outstanding MNB bills does not play a prominent role in monetary policy. On the one hand, the volume has no direct effect on economic developments, and on the other hand, it is typically influenced by factors over which the MNB has no control. Using the simplified balance sheet of the MNB is the easiest way to demonstrate the contribution of the factors influencing the volume of bills.

The MNB bill is one of the most significant items on the liability side of the central bank's balance sheet. Other than currency in circulation (the only interest-free liability of the central bank) and government deposits, no other item matches the two-week bill in terms of magnitude. By contrast, foreign currency reserves constitute the most dominant item on the asset side, as the central bank buys forint-denominated securities and provides forint-denominated loans in exceptional cases only. To put it simply: the MNB holds its liabilities arising from currency in circulation, deposits of banks and the government in foreign currency reserves.

Only in exceptional cases does the MNB influence the foreign currency reserves on the asset side. Essentially, this item is

Table 1

Monthly average statistical balance sheet of the MNB, July 2008–July 2009

(HUF billions)

Assets				Liabilities			
	July 2008	July 2009	Yearly changes		July 2008	July 2009	Yearly changes
External assets (FX reserves)	4,142	7,859	3,717	Currency in circulation	2,150	2,210	59
Loans of credit institutions	–	222	222	Two-week MNB bills	962	2,907	1,945
Hungarian Government Securities	147	360	213	Current account balances of credit institutions	734	341	–393
Remaining assets	96	456	359				
				Overnight deposits of credit institutions	57	414	357
				Swaps with credit institutions	–	253	253
				Deposits of central government	430	1,233	803
				Remaining liabilities and capital	51	1,538	1,488
Total assets	4,385	8,897	4,512	Total liabilities	4,385	8,897	4,512

⁴ In this context the past year was an exceptional period; the lack of overall market confidence forced banks to rely much less on interbank markets. Despite a loss of 50 basis points, wary banks resorted to the use of the overnight deposit facility of the MNB far more intensely than in previous periods.

increased by the foreign currency revenues (e.g. EU assistance or foreign currency borrowings) and decreased by the foreign currency expenses of the government. There are two exceptions: in the first case, the central bank intervenes in the foreign exchange market; in other words, it buys or sells foreign currency with a view to influencing the market exchange rate of the forint. The central bank resorts to this instrument in extraordinary cases only (such as the speculative pressure that accompanied the strengthening of the forint in early 2003). The second case, when the central bank becomes indebted in foreign currency, is very rare also (e.g. central bank borrowing from an international organisation).

On the liability side, the MNB has practically no influence on changes in the amount of currency in circulation: economic actors are free to decide how much cash they wish to hold. Similarly, it has no direct control over the size of government deposits, or whether the government finances these deposits from forint or foreign currency funds.

Liabilities vis-à-vis banks constitute the last large item in the MNB's balance sheet, including banks' holdings of two-week bills, which are defined on the basis of the residual principle. Namely, if any other balance sheet item is subject to changes affecting the banks' central bank accounts, without the central bank's active intervention they will adapt to the change by adjusting their two-week bill portfolio. Banks could also adapt through their account balances or through the overnight instruments constituting the interest rate corridor, but the associated terms and conditions would be more unfavourable (the MNB does not pay any interest on excess reserves; moreover, the interest banks receive on overnight deposits is 0.5% lower than the interest rate on the two week bill).⁵ As such, in the case of MNB bills the MNB is not a classical security issuer in the sense that refinancing risk is a meaningless concept for the central bank. The volume of two-week bills is increased by the liquidity growth in the banking system, and decreased by a decline in liquidity. Although liquidity managers at individual banks might decide to absorb their liquidity surplus in interbank transactions, the partner bank may face excess liquidity as well. Consequently, at the level of the banking sector, excess liquidity will invariably flow into two-week bills eventually. In other words, while banks may make adjustments to their two-week bill portfolio at the individual level, they are unable to change the overall volume of these bills through their interbank

transactions: they merely redistribute liquidity across the banking sector. This sharply sets apart the correlations that apply to the individual balance sheets of banks and the balance sheet of the central bank.

The specific examples below highlight factors which may lead to an increase in the volume of the MNB bills as a result of changing the structure of the central bank's balance sheet:

- an item on the *asset side* of the central bank's balance sheet increases:
 - foreign currency reserves increase as the central bank buys foreign currency in the market
 - central bank loans extended to banks increase
 - the central bank's portfolio of government securities increases (the central bank buys government securities in the market)
- or an item on the *liability side* of the central bank's balance sheet decreases:
 - a decrease in the account balance of the government's account leads to an increase in the account balance of the banking system, generating a positive flow into two-week bills.⁶
 - the account balance of banks decreases. For example, the minimum reserve ratio is lowered and as a result, the account balance banks are required to maintain with the central bank decreases. At the level of the banking sector, banks are forced to deposit the released funds into two-week bills, as all other options would imply substantial losses in interest.
 - the volume of currency in circulation decreases. Cash demand is essentially based on household habits, and as such, it fluctuates seasonally. Before Christmas, for example, the cash demand of economic participants surges, then as the holidays are over, banks record a cash inflow once again. As a first step, banks can obtain cash from their central bank account, and subsequently the MNB credits the same account with the cash returned. Since banks' account balances are determined by the

⁵ On the other hand, if the MNB decided to restrict the quantity of two-week bills, *ceteris paribus*, the banking sector would have to use another instrument to absorb the growing liquidity, meaning that market yields would no longer be defined by the two-week bill. In this case, overnight deposits would be an alternative option for banks, thus the interest rate on O/N deposits would become the de-facto policy rate. In other words, restricting the quantity of two-week bills would be the equivalent of an immediate interest rate cut.

⁶ Most government payments are as such. For instance, the government typically transfers the amount of public salaries (or pensions) to retail accounts with commercial banks. In the payment system, this process implies a transfer from the Treasury account to the banks' accounts with the central bank, and simultaneously, the banks credit the accounts of their customers' with the amount deposited to their central bank account.

reserve requirements, changes in the cash stock will eventually be reflected by the two-week bill portfolio. Therefore a sustained decline in cash demand will lead to an increase in the volume of MNB bills.

On the whole therefore, if the central bank acts passively (both in the foreign exchange and the forint market), the central bank balance sheet will constitute a closed unit; in other words, changes in items on the asset or liability side will be eventually reflected by two-week bill flows.⁷

Until the autumn of 2008 the central bank assumed a passive stance: it practically refrained from purchasing government securities and did not offer any substantial loans to banks. Flows in the two-week bill holdings during that period almost exclusively reflected developments in the account balance of the government's account.

From the autumn of 2008, however, in an attempt to relieve mounting liquidity tensions in the banking sector, the MNB proceeded to intervene actively, which generated new items on the asset side (government securities purchases, bank lending), moreover, the reserve ratio was lowered as well. The impact of these transactions, nevertheless, was still negligible compared to the effects of government transactions; even in this period, therefore, changes in the volume of two-week bills continued to be driven by the latter. The increase in foreign currency reserves was initially caused by the growing volume of government deposits (disbursement of the IMF and EU

credit facility), but government spending eventually generated growth in banks' account balances, which in turn triggered a record surge in holdings of two-week bills. This process is clearly reflected by the fact that, compared to early 2008, the increase in foreign currency reserves was gradually approached by the growth in the holdings of two week bills.

THERE IS NO DIRECT LINK BETWEEN THE BASE RATE AND THE VOLUME OF TWO-WEEK MNB BILLS

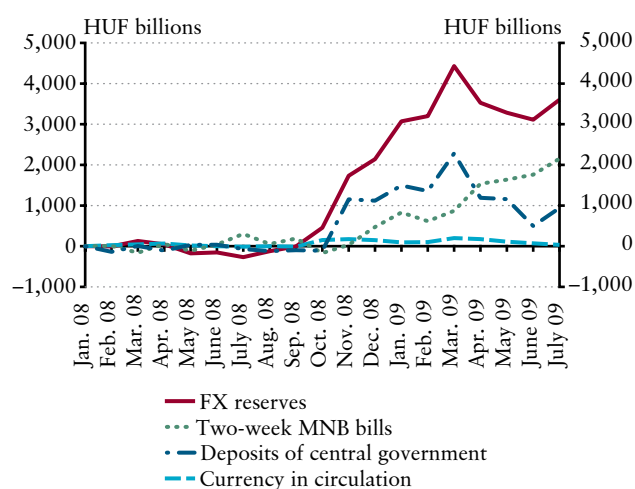
The interest rate on the two-week bill is the depository of the excess liquidity banks face, but do not need to comply with the minimum reserve requirement. Consequently, the base rate will be the key rate for all their transactions with the same maturity, which means that domestic economic actors (households and companies) as well as non-resident investors in the forint markets will have an opportunity to deposit funds with or receive loans from domestic banks at an interest rate close to the base rate. At the same time – along with expectations about the future path of the central bank base rate – longer-term yields are fundamentally influenced by the risk appetite of market participants and their inflation expectations.

In the current monetary policy system, a potential interest rate adjustment by the central bank will not change any item in the central bank's balance sheet in itself; therefore it will not change the volume of the MNB bills either. This has not always been the case. In the narrow-band, crawling peg exchange rate regime, raising the base rate could increase the volume of the key policy instrument. All other factors being equal (e.g. country risk), a higher interest rate level encourages the forint investments of non-residents, driving up the forint exchange rate relative to other currencies. In the narrow-band exchange rate regime, the exchange rate hit the strong edge of the band fairly soon (indeed, it practically always stayed around the strong edge), at which point the MNB was forced to intervene (through foreign currency purchases) in order to prevent a further appreciation of the exchange rate. This increased foreign currency reserves and generated a forint liquidity surplus, resulting in a flow into the key policy instrument (which was the one-month, and later the two-week deposit at the time), driving up its volume.

The exchange rate regime maintained in the period of 2001-2008 was also fixed, albeit at a wider band ($\pm 15\%$), and thus

Chart 2

Cumulative changes in the MNB's main balance sheet items from 1 January 2008



⁷ Transactions between the state and the MNB may represent an exception. In the case of government borrowings denominated in a foreign currency, the increase in the foreign currency reserves overlaps with an increase in the government's foreign currency deposit account with the central bank. However, it is typical of public finances that the government raises funds only to the extent needed to cover its expenses; in other words, the government's deposits with the central bank will be subject to a temporary increase only. As the government gradually depletes these funds, the declining balance of the government's account will generate a parallel increase in the volume of the two-week bills, as shown above.

theoretically the MNB continued to have an intervention obligation at the edges of the band. In early 2003, the interest rate level was favourable relative to investors' risk appetite, which strengthened the forint exchange rate to such an extent that a central bank intervention (forint sale and foreign currency purchase) was required at the strong edge of the fluctuation band. Again, this move simultaneously increased the liquidity surplus of the banking sector and the foreign currency reserves. Apart from this single case, however, there have not been any interventions at the band edge since 2001, i.e. this factor has no longer influenced the excess liquidity of the banking sector.

On the other hand, there is currently no direct link between the base rate and the volume of two-week MNB bills. The MNB has no intervention obligation in the free-floating exchange rate system adopted in early 2008, and thus non-resident capital inflows or outflows can no longer influence the level of foreign currency reserves, which means that they have no impact on the level of excess liquidity or the volume of MNB bills. Consequently, with the credit rating being equal, an interest rate increase by the central bank can freely exert its strengthening effect on the forint exchange rate without influencing the central bank's balance sheet or increasing the volume of the two-week bills.

THE LARGE VOLUME OF MNB BILLS DOES NOT REDUCE THE DEMAND FOR GOVERNMENT SECURITIES

Based on the above, in terms of the liquidity of the banking sector, the government's accounts with the central bank deserve special attention. The Hungarian State Treasury makes payments for the forint expenses of public organisations from the Single Treasury Account (KESZ), and credits their revenues to the same account. The Government Debt Management Agency (ÁKK Zrt.) is responsible for liquidity management, in other words, it has to ensure that the account has a sufficient balance to make the required payments. ÁKK raises the funds required for the financing of public expenses from forint or foreign currency sources; therefore in addition to KESZ, the central bank manages a foreign currency account for the government for FX transactions, and provides a conversion opportunity between the two accounts.

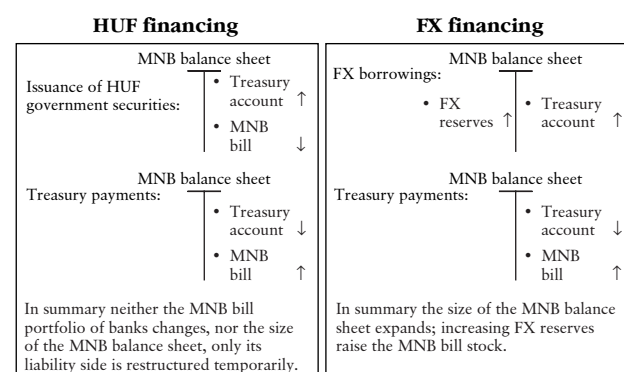
Changes in the balance of KESZ significantly affect the liquidity position of banks. If payment of government expenses depletes the KESZ balance, the liquidity of the banking sector increases, which in turn will raise the volume of two-week bills. On the other hand, tax payments increase the KESZ balance, which reduces the liquidity (two-week bill portfolio) of banks, while the level of KESZ increases.

If the central budget was in equilibrium constantly during the year, i.e. revenues equalled expenses, the KESZ balance would also remain constant and Treasury transactions would have no effect on the overall liquidity of the banking system. However, revenues and expenses cannot be in balance in any case on account of different patterns within the year and within the months; in addition, the financial year is typically characterised by a deficit. Thus the ÁKK is responsible for financing the temporary and permanent deficits, and it depends on the method of financing as to how this impacts the banking sector's liquidity.

If the ÁKK covers the deficit from the issuance of forint-denominated government securities (i.e. the new issuance exceeds the volume of maturing government papers), the liquidity of the banking sector will remain unchanged. Even though the issuance of government securities would reduce the liquidity of the banking sector, this would be offset by the budgetary expenditure. Obviously, the liquidity position of the banking sector may fluctuate depending on intra year patterns, but its yearly average would not change.

On the other hand, if the government finances the deficit from the issuance of foreign currency bonds, foreign currency borrowings or any other foreign currency source (e.g. EU funds), the liquidity of the banking sector will increase. Indeed, in order to ensure that only one state agent, notably the central bank, executes high volume foreign currency transactions, rather than using the interbank FX market, the government converts all of its foreign exchange revenues into forint at the central bank. At this point, however, the MNB becomes an active party in the transaction, which changes the structure of the central bank's balance sheet. Initially, the foreign currency reserves of the MNB and the KESZ account balance will increase, but eventually the government expenditure will result in the expansion of the banking sector's liquidity. In summary, if the government finances the

Chart 3 Impact of the financing of government expenses on the volume of two-week bills



deficit through foreign currency borrowing, the two-week bill portfolio of banks will increase.

Most of the past year saw this very process. As investors' risk appetite diminished, the path of Hungarian government debt took a downturn, and the liquidity of the domestic secondary market of government paper deteriorated as well, as investors' demand for government paper declined. In consideration of the dwindling demand for government paper, the ÁKK reduced its forint issuances, and relied increasingly on international borrowings. While the conversion of foreign currency loans into forint at the MNB increased foreign currency reserves, the forint payments made by the Treasury (classic expenses, payment of maturing and repurchased forint-denominated government securities) increased forint liquidity, which eventually resulted in an inflated volume of MNB bills.

Therefore, it was not the large volume of two-week bills that caused a decline in the demand for forint-denominated government paper; instead, the declining demand in the market of government paper – which was caused by other factors – led to an increase in foreign currency financing, which inevitably generated a surge in MNB bills.

RATHER THAN BEING AN OBSTACLE, THE LARGE VOLUME OF MNB BILLS SUPPORTS, ALBEIT DOES NOT GUARANTEE AN UPSWING IN BANK LENDING

If lending picks up, banks' balance sheets will expand as money disbursed in the form of loans will be re-channelled into the banking system as a deposit, which is then used to finance further loans.⁸ On the other hand, a rebound in lending may generate a demand for liquidity at the level of individual banks, because the borrowing company or household may make payments to an account with another bank (e.g. is involved in an investment project, or purchases a home or consumer goods that require a bank transfer). The account manager bank must ensure that its central bank accounts have sufficient funds to make this payment: in other words, its demand for liquidity will be this much higher. Under normal market conditions, this bank should stand a good chance of obtaining this liquidity either in the interbank market or directly from the bank that will end up with the extra liquidity as a result of the payment, or it may even get access to liquidity indirectly, through another bank.

In addition, the lending bank may obtain the necessary liquidity from other banks through other means of financing (e.g. deposit redemption). Since the lending involved in these transactions does not concern the MNB in any way, it has no effect on either the central bank's balance sheet, or the liquidity surplus, or the volume of the MNB bills. Only in case of market turbulences may the MNB play a role. In such cases, the bank with a liquidity demand has several options as to how to obtain the required central bank money. On the one hand, it may quote less MNB bills than its maturing stock, thereby reducing its MNB bill portfolio. However, the bank on the receiving end of the transfer will face excess liquidity and will therefore increase its two-week bill portfolio by the same amount. Consequently, the volume of bills in the overall banking sector will not decline. Ultimately, the specific bank may also borrow money from the central bank (against sufficient security collateral, i.e. government paper, MNB bills, etc.), but this would typically imply worse conditions than those prevailing in the market. Again, in this case lending would not decrease, but rather increase the volume of two-week bills in the banking sector. Indeed, while the lender bank will not reduce its bill portfolio, the excess liquidity generated by the customer's transfer will wind up at another bank in the banking sector in any case, and that bank will hold those funds in two-week bills.

Therefore, a large portfolio of MNB bills means that the holder has liquidity reserves: on the one hand, it is a short-maturity (two-week) liquid asset; on the other hand, it is accepted at any time by the central bank as collateral for loans (overnight, collateralised loans). Consequently, a large bill portfolio reduces the liquidity risk associated with lending.

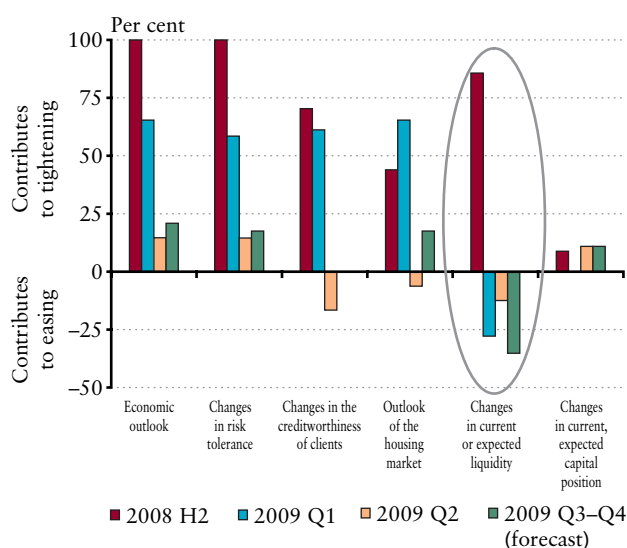
Although banks' restricted liquidity in the second half of 2008 significantly contributed to the downturn in lending, on its own, the improvement in liquidity conditions in the first quarter of 2009 could have increased banks' lending activity already. Banks' holdings of two-week bills strongly supported the improvement in liquidity conditions. Nevertheless, the declining risk appetite of banks (they were unwilling to take worsening credit risks) and the deteriorating economic prospects led to a sustained decline in lending. Due to sector-specific problems, the deterioration further intensified for corporate lending, while in the case of households the worsening prospects of the housing market contributed to a sustained downturn in lending.

⁸ Only a small fraction of the deposit growth deriving from lending winds up with the MNB – currently only 2%, i.e. the specific portion of the minimum reserves – and even that portion is deposited to the central bank accounts of banks rather than held in MNB bills. Therefore, the banking sector's demand for central bank money to support its lending is limited to this small amount.

On the whole, the growing volume of MNB bills gradually improved banks' liquidity position and supported their lending activity; however, driven by other, more powerful factors, they were forced to restrain their lending supply.

Chart 4

Factors contributing to changes in credit standards and terms of mortgage loans



Source: MNB lending survey, August 2009.

CONCLUSIONS

Based on the correlations between the balance sheet items of the central bank, we demonstrated that it was primarily the foreign currency financing of the government that accounted for the tripling in the volume of MNB bills over the past year. The large volume of the key policy instrument is therefore the consequence of subdued demand in the government securities market rather than the reason for it, and hence the inevitable foreign currency borrowing of the government.

We do not see a direct link between the substantial volume of bills and the relatively high key policy rate, because a change in the overall volume of MNB bills can only be triggered by a change in another central bank balance sheet item. Adjusting the interest rate, however, does not prompt

a central bank intervention in the foreign currency market under the current exchange rate regime, and there is no other direct link between the base rate and the liquidity of the banking sector. At the same time, serving as banks' liquidity reserves, the mounting volumes of two-week bills support a rebound in lending. Nevertheless, for the recovery of lending activity, the risk appetite of banks will have to improve as well.

REFERENCES

ANTAL, J., GY. BARABAS, T. CZETI AND K. MAJOR (2001): Likviditásszabályozás az MNB cél- és eszközszerében (Liquidity management operations at the MNB), *MNB Occasional Papers* No. 22.

BALOGH, CSABA AND LÓRÁNT VARGA (2006): A jegybanki kéthetes betét értékpapírrá alakítása (Converting the central bank's two-week bill into a security), *Working document for the Money Market Consultative Forum of the MNB*.

BINDSEIL, U. (2004): *Monetary policy implementation: theory, past, present*, Oxford University Press.

BORIO, C. E. (1997): The Implementation of Monetary Policy in Industrial Countries, A Survey, *BIS Economic Papers* No. 47.

ERHART, SZILÁRD (2005): Az egynapos bankközi kamatszint alakulását meghatározó tényezők (Driving factors behind O/N interbank interest rates), *MNB Occasional Papers* No. 34.

MNB (2006): *Monetáris politika Magyarországon* (Monetary policy in Hungary).

MNB (2002): *Monetáris politika Magyarországon* (Monetary policy in Hungary).

KOMÁROMI, ANRÁS (2008): A monetáris aggregátumok szerepe a monetáris politikában (The role of monetary aggregates in the monetary policy), *MNB Occasional Papers* No. 71.