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Banai, m and Kirly, Jlia and Nagy, Mrton

2012

Online at <https://mpra.ub.uni-muenchen.de/40333/>
MPRA Paper No. 40333, posted 06 Aug 2012 13:59 UTC

„Home high above and home deep down below?“ Lending in Hungary*

Ádám Banai

Júlia Király

Márton Nagy

In Hungary in the pre-crisis period the bank sector initiated private credit boom significantly contributed to the accumulation of economic imbalances. Nevertheless, before the 2008 crisis no special regulatory measure was taken to mitigate the FX lending to unhedged borrowers, which was one of the main moving force of the credit boom. Depreciation of the HUF and the increased risk premium significantly deteriorated the customers' positions and resulted rocketing NPL-s. Recession, deteriorating portfolios, lack of efficient workout and the introduced strict regulation did freeze banking activity and the danger of recovery without lending did emerge. The paper compares the pre- and post-crisis lending activity and analyse both the lack of regulation in the pre-crisis and the inefficient regulation in the post-crisis period.

Keywords: FX lending, macro prudential measures, credit growth, financial stability

1. Introduction

The transformation of the banking system in Hungary reached completion in the second half of the 1990s. By then the vast majority of banks had been transferred to foreign owners. Owing in part to this structural specificity (i.e. the dominance of foreign banks¹), retail² lending in Hungary remained marginal until the turn of the millennium. Banks' clientele was made up of primarily firms, not least because of the lack of a sound capital market to support corporate lending. The introduction of forint (HUF)-denominated, subsidized housing loans marked the first major change in lending trends. Since then, banks have focused increasingly on the retail segment. Moreover, the fierce competition for corporate clients helped to drive financial institutions in this direction. Household lending then saw a remarkably rapid boom, albeit with some disruptions, which endured until the onset of the crisis. Although the corporate loan portfolio also exhibited an accelerated growth rate, it didn't match the pace of household lending. In autumn 2008 the spillover of the financial crisis to Hungary broke this upward trend in lending. The Hungarian banking system and the relevant government institutions were faced with a serious challenge as the previously accumulated risks materialized.

Several papers have examined the consequences of the financial crisis both in Hungary and the region. Most of them focus on the channels of contagion identified during the crisis (Haas and Lelyveld, 2009), while others concentrated on the buildup of liquidity risks and its impact during the crisis (Banai et al., 2010a). In this paper, we primarily address the developments of lending in Hungary. Besides providing an overview of the trends observed, we seek to determine whether there were any developments in either the household or the corporate segment that would have warranted state

* The views expressed in this essay are those of the authors and do not necessarily reflect the official views of the (i) Magyar Nemzeti Bank (the central bank of Hungary) or its management, (ii) World Bank and its affiliated organizations, or (iii) the Executive Directors of the World Bank and the governments they represent. This paper was prepared as background to a forthcoming World Bank report titled "Golden Growth: Restoring the Lustre of the European Economic Model." All errors and omissions remain entirely the responsibility of the authors.

¹ The expression 'foreign banks' refer to institutions with strategic foreign owner. It is not include majority foreign owned banks held in shares scattered among owners on the stock market (e.g. OTP Group, FHB Group)

² Retail segment includes only household customers.

intervention in the period preceding the crisis. In addition, we present the challenges Hungarian authorities had to face as a result of the crisis and the tools they applied in efforts to overcome them.

In our analysis we distinguish among three main periods. In the first part of section II we analyze lending in Hungary before 2004. The end of this period was marked by the turnaround observed in lending to households. This is the beginning of the foreign-exchange lending boom. The second part of the section addresses the upswing phase: the period stretching to the beginning of the crisis. In the rest of section II we present, first, the liquidity risks building up alongside lending risks and, second, a number of measures that, based on international experience, may be suitable for countering credit booms. In section III we describe the developments observed since the onset of the crisis – in particular, the challenges Hungary is faced with in the area of corporate and household lending.

2. Precrisis lending: The accumulation of risks

2.1. Period of convergence (from the beginning to 2004)

In our analysis, one of the main questions is whether lending in Hungary was healthy in the observed periods. An excessive credit expansion may carry a number of risks. On the one hand, the expansion might be caused by increasing interbank competition. Shrinking margins may force banks to take bigger risks than before to maintain profitability. From the side of banks, credit expansion may thus lead to the buildup of a high-risk portfolio. On the other hand, credit expansion might be driven by unreasonably optimistic expectations regarding economic activity. This may result in excessive indebtedness and a jump in consumption. In emerging markets the rapid growth in lending is often accompanied by a significant appreciation of the local currency and soaring asset prices. The inevitable lending deceleration, in turn, generates a sharp fall in asset prices. As a result, the economy may sink into recession. In the worst-case scenario, the credit boom may trigger banking and currency crises with harsh adjustment consequences (IMF, 2004).

2.1.1 Corporate segment

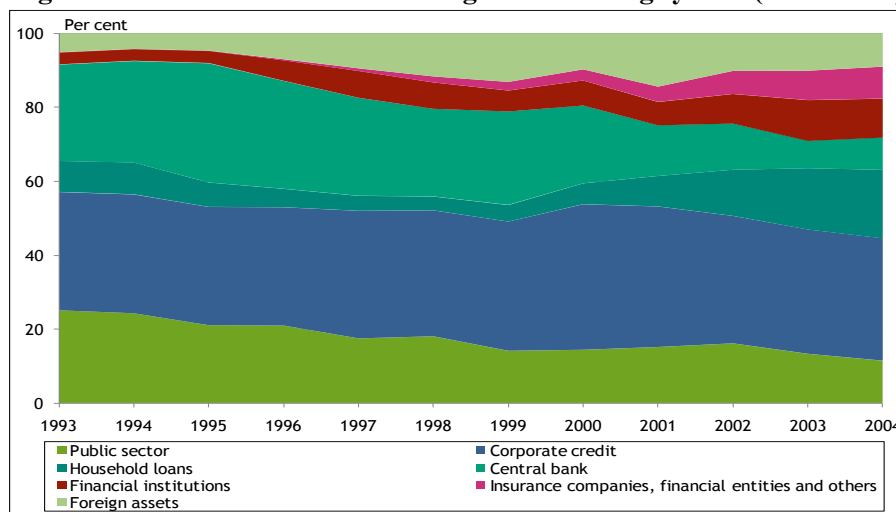
Over the observed period, the structure of the domestic banking system was largely shaped by the competitive advantage local banks enjoyed when entering the retail market. In fact, nonresident market players did not make much of an effort to alter this situation (Móré and Nagy, 2004).

The entry of foreign banks into the retail segment was limited by numerous factors besides the inherited competitive advantage of domestic banks. One such entry barrier was information asymmetry, which characterized household lending due to the short credit history of Hungarian households. Domestic banks were less affected by this problem, as their continuous participation provided them with far more information on customers. Those banks which were purchased by their foreign owners during the privatization process was not active in the retail segment before the privatization so they did not have that knowledge. The other important factor lies in the special needs of the household segment. In order to reach and adequately serve potential clients, a far more extensive branch network and staff capacity was needed than for the corporate segment (Móré and Nagy, 2004). For a long time, the associated high costs prevented foreign banks from entering this market or reinforcing their presence.

Due to the retail market's high entry costs, foreign banks focused initially on the corporate segment. Expansion in the corporate segment was supported by the arrival of multinational firms, the appearance of “home-host” relations in the corporate segment, and an upswing in external trade.

Moreover, foreign banks, which did not inherit low-quality corporate portfolios from the pretransition period and had experience in the field of commercial banking, could offer more favorable conditions overall than their domestic counterparts. Accordingly, until the beginning of the new millennium, participants of the Hungarian banking system were mainly engaged in corporate lending. In addition to government papers and receivables from the central bank, corporate loans were the most important contributors on the asset side (Figure 1).

Figure 1: Asset structure of the Hungarian banking system (1993–2004)



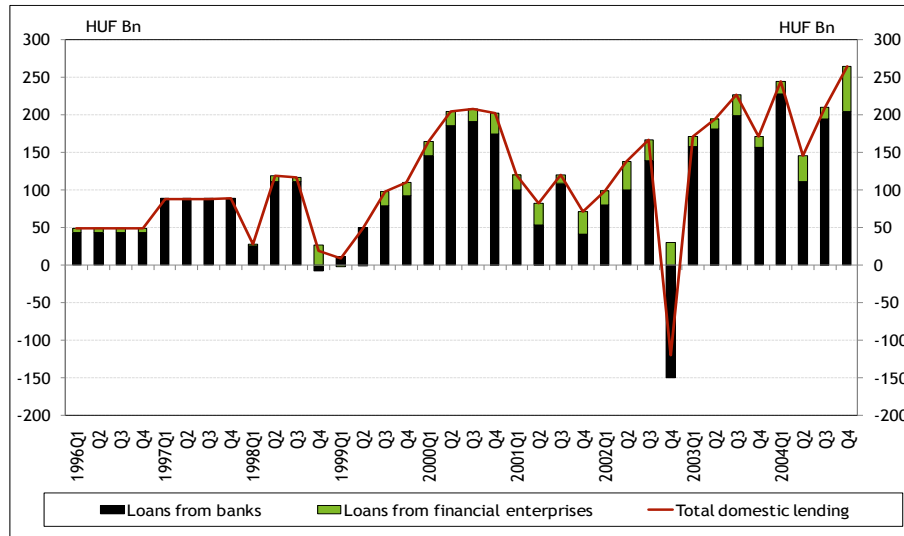
Source: Magyar Nemzeti Bank (MNB) data.

On the borrowers side, loans had/have a key role in funding firms. Owing to the underdeveloped capital market, the ratio of securities other than shares is still below 2 percent on the liability side of firms, and it has remained broadly unchanged since the transition. Accordingly, loans represent the main external liabilities. By the end of 2004, the share of loans on the liability side of the corporate sector rose to over 30 percent, compared to 18 percent at the beginning of the 1990s. Besides the domestic banking system, direct borrowings from abroad also contributed significantly to this growth. While they also represent a high share within net inflows, their magnitude should be handled with caution. Occasionally, the inflow of foreign funds may be related, for instance, to the liquidity management of foreign parent companies rather than the financing of business operations (Figure 2).

Due to the high risks of a credit boom, several authors set out to examine whether the credit expansion experienced in certain countries entailed excessive credit growth or such growth in equilibrium. In relation to Hungary, Kiss et al. (2006) provided guidance as regards the soundness of the credit growth of the period before 2005. It is important for the purposes of our analysis that the study (for methodology see Box 1) reviews the corporate sector and the household sector separately. The period stretching to 2004 suggests that the ratio of corporate credit to gross domestic product (GDP) did not exceed the level justified by macroeconomic variables. We supplemented the chart presented in the study of Kiss et al. (2006) with the median of country constants. Considering it as an equilibrium path, the chart reveals that the corporate credit/GDP ratio was below the equilibrium level. At the same time, its dynamics deviated from that of the equilibrium path; its level gradually approached the equilibrium level (Figure 3). Nonetheless, based on the model, credit expansion cannot be considered excessive in the period under review.³

³ The study does not take account direct borrowings from abroad, which distort the results somewhat. This notwithstanding, we believe that the conclusion holds true.

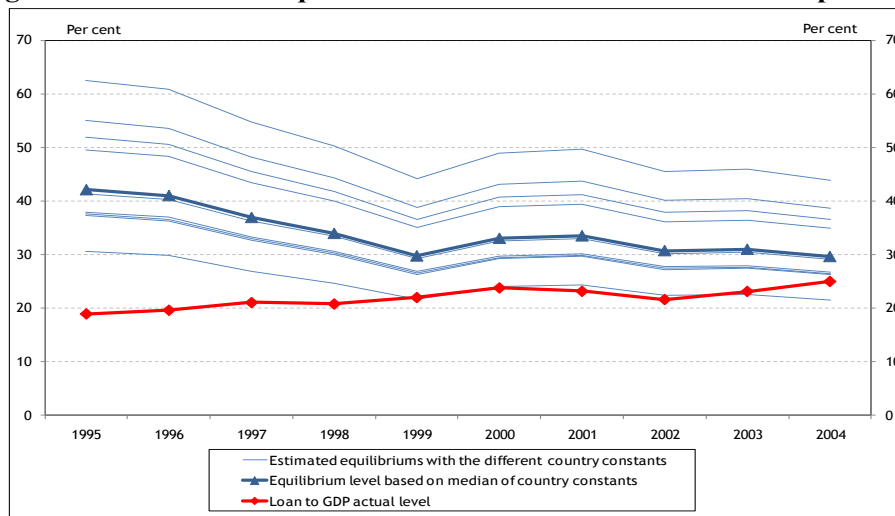
Figure 2: Net change in loans outstanding to nonfinancial corporations



Source: MNB data.

Note: “Banks” includes banks, branches, and cooperative credit institutions. Direct loans from abroad are not presented. The high volatility they typically exhibit is often unwarranted by real economic activity and merely reflects the internal liquidity management of the corporate group. The outstanding amount of direct foreign loans was marginally less than domestic loan volume.

Figure 3: Estimation of equilibrium credit/GDP of nonfinancial corporations



Source: Kiss et al. (2006); authors’ calculations.

Note: we have plotted out the out-of-sample equilibrium levels with different country constants and also calculated a level based on the median of country constants.

Box 1: The identification methodology of equilibrium credit-to-GDP levels based on Kiss et al.

The identification of the equilibrium credit-to-GDP levels is based on a two-step out-of-sample method. In the first step, eurozone data was employed for panel estimation using the pooled mean group (PMG) estimator. In the second step the estimated long-run parameters (structural relationship) was used for the calculation of the equilibrium level of Hungary's credit-to-GDP.

At the estimation it was assumed that the long-term relationship is the same in every examined country, but the short-term dynamics and the constant can differ across countries. Specifically it means that in the estimation of the equilibrium credit-to-GDP, the estimated parameters of the explanatory variables assumed to be the same; however the dynamics around the equilibrium, hence the constant in the equation are allowed to differ. The explanatory variables for the estimation of equilibrium credit-to-GDP were the short-term real interest rate, the GDP and inflation.

Finally, for Hungary we used the common long-term parameters on the Hungarian data. Choosing the country-specific constant was less straightforward. Therefore, we decided to plot out-of-sample equilibrium credit estimates using all country-specific effects.

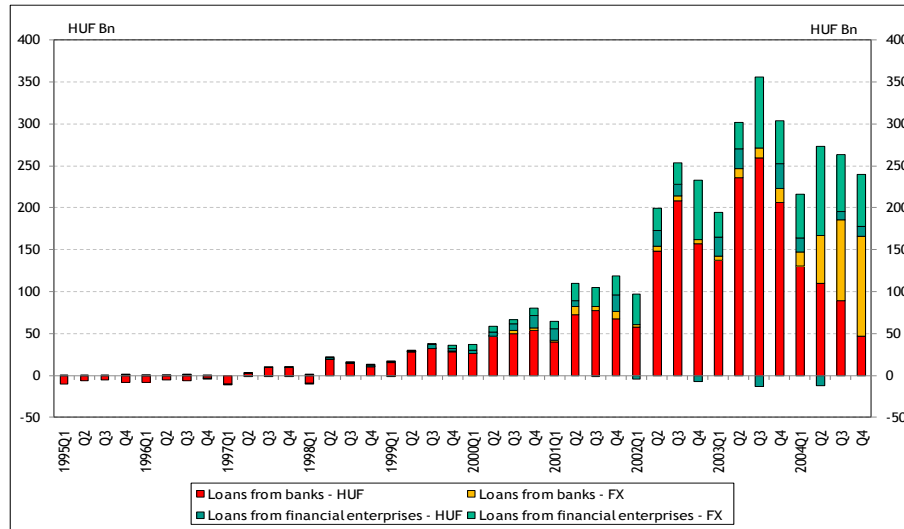
2.1.2 Retail segment

During the transformation of the banking system in the 1990s, lending to households in Hungary was marginal. For the reasons described above, foreign-owned banks were not active in this market segment and household customers were mainly served by a handful of banks that remained under domestic ownership. Consequently, the net flow of credit to retail customers remained at very low levels until the turn of the millennium. The new millennium represented a turning point in the attitude of foreign banks present in Hungary. Fierce competition began to chip away at the profitability of the corporate segment, while positive growth prospects and households' optimistic expectations generated burgeoning demand for banking products from the household segment. The newly established institutional conditions for mortgage lending, as well as the lower interest rates induced by the state-subsidized housing loan system, also contributed to the pickup in lending. As a result of the latter, in the early 2000s new loan disbursements were dominated by state-subsidized forint loans. Retail foreign currency lending also appeared in Hungarian financial intermediation, although financial enterprises⁴ were the sole providers of this product at the time. Indeed, typically the financial enterprises of foreign-owned banks offered foreign-currency-denominated loans to households, mainly to finance vehicle purchases. Thanks to parent bank relations, the owner bank was able to provide them with the required foreign currency funds (Banai et al., 2010a).

It was only in 2004 that foreign currency lending rose noticeably in banks' mortgage lending. In response to news about a drastic tightening of the subsidy scheme on forint-denominated mortgage loans, 2003 saw a substantial surge in demand for this product. In 2004, however, a new product type – foreign-currency-denominated mortgage loans – played an essential role in maintaining the previous level of lending. Net credit flow in 2004 still fell short of the level observed in the previous year, and its structure changed as well: the share of foreign currency loans gained ground (Figure 4). The change in 2004 did not increase the vulnerability of the banking sector substantially in itself; however, it was apparent that its potential evolution into a trend could pose significantly increased risks to financial stability (MNB, 2004).

⁴ Financial intermediaries that do not accept deposits but their main business is raising funds to lend (e.g. leasing companies)

Figure 4: Net change of loans outstanding to households by currency breakdown

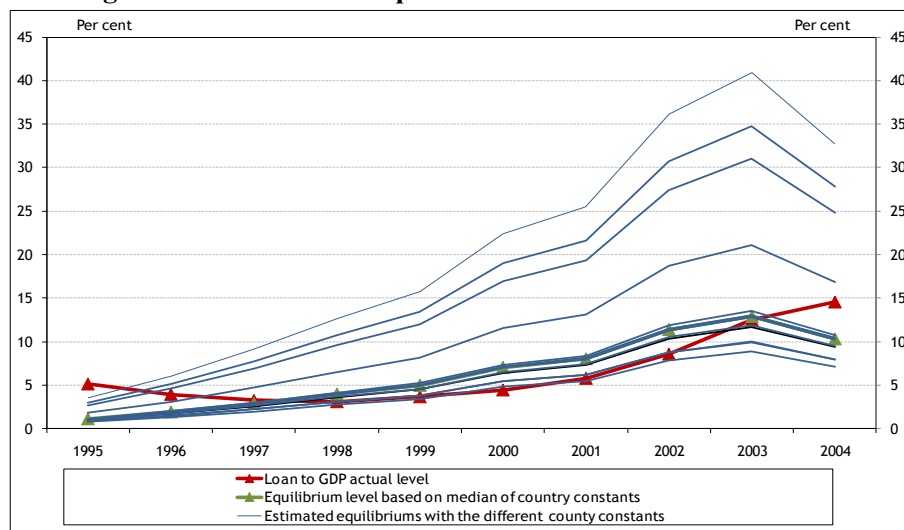


Source: MNB data.

Note: “Banks” includes banks, branches, and cooperative credit institutions.

As was the case with the analysis of corporate lending, we use the results of Kiss et al. (2006) to determine the occurrence of a credit boom in the household sector. Again, we supplemented the equilibrium paths based on country constants with a median path. The chart (Figure 5) reveals that in the case of households, the actual credit/GDP ratio exceeded the equilibrium level toward the end of the period, which can be attributed to two factors. On the one hand, as shown above, the announced tightening of the state subsidy scheme and the resulting borrowings brought forward to 2003 led to a surge in household indebtedness. On the other hand, while the growth rate of the loan portfolio decelerated in 2004, on the basis of macroeconomic variables, the model would have justified a decline in proportion to GDP. This deviation from the equilibrium path, however, can be still explained by convergence. In turn, it is hard to explain a decline in the equilibrium path driven by high nominal interest rates in the case of a transition economy. Consequently, in the review period there was no credit boom in the case of households; however, the risk of its emergence was greater in this sector than in the corporate sector.

Figure 5: Estimation of equilibrium credit/GDP of households



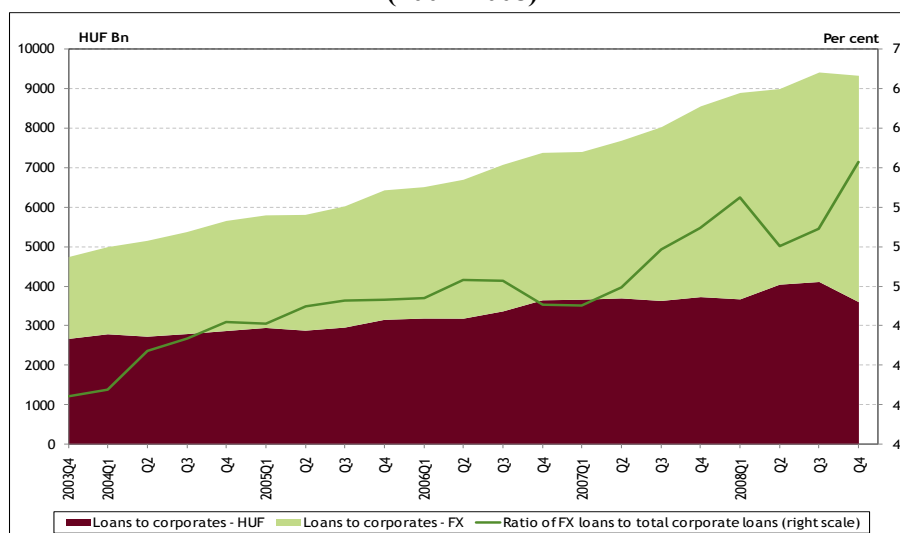
Source: Kiss et al. (2006); authors’ calculations.

2.2. Period of excessive credit expansion (2004–2008)

2.2.1 Corporate segment

2004 marked the end of the era of state-subsidized, forint-based housing loans previously dominant in household lending, and banks started to offer new, foreign-currency-denominated mortgage loan products. In corporate lending we could not identify such a clear-cut turning point. Indeed, this separation of the periods was justified by developments in household lending. The share of foreign-currency-denominated loans within the total corporate portfolio was rather significant even before 2004. This was a natural consequence of the fact that in a small, open economy such as Hungary's, a large number of corporations have revenues in foreign currency; in other words, they have a natural hedge against exchange rate exposure. However, the share of foreign currency loans in net credit flow gradually increased between 2004 and 2008. The ratio of foreign currency loans to the total loan portfolio increased above 60 percent from around 40 percent in the observed period (Figure 6).

Figure 6: Loans to non-financial corporations and ratio of FX loan to total corporate loans (2004–2008)

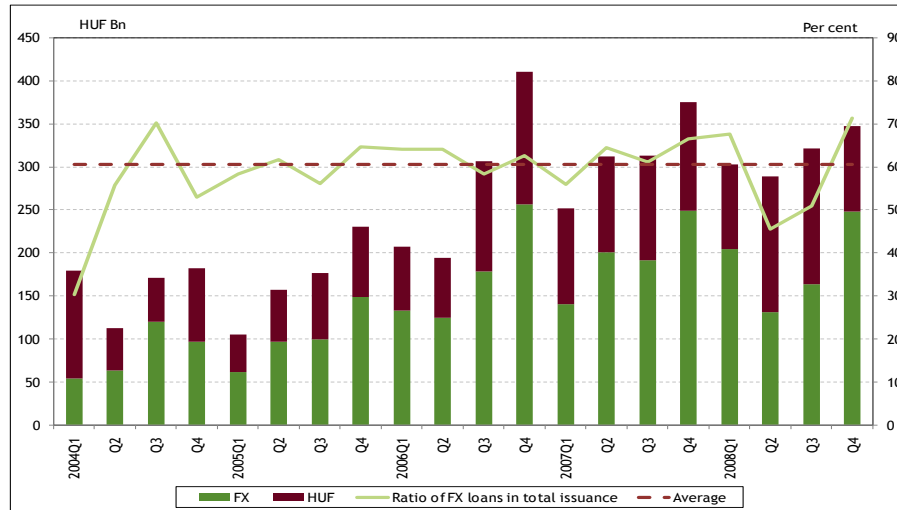


Source: MNB data.

Note: Adjusted for exchange rate effects. Foreign loans are not presented. The high volatility they typically exhibit is often unwarranted by real economic activity and merely reflects the internal liquidity management of the corporate group.

This increasing dominance of foreign currency lending after 2004 could not be attributed any more simply to the hefty foreign currency revenues of the corporate sector. As the 2006 issue of the *Report on Financial Stability* (MNB, 2006) pointed out, an increasing portion of foreign currency loans was unhedged against exchange-rate risk. The analysis of micro, small, and medium-size enterprises appears to support this view. These companies are active mostly in the domestic market, and since their risk management is typically less sophisticated, they are often unhedged against exchange-rate risk when taking out foreign currency loans. This notwithstanding, 60 percent of long-term loans (with a contractual maturity of over one year) were denominated in foreign currency in the review period (Figure 7). This confirms the conclusion of the Magyar Nemzeti Bank (MNB). Thus, before setting out to examine the growth rate, we may conclude that borrowers without a natural hedge posed an increasing risk to the corporate portfolio. In case of an exchange-rate shock, this exchange rate risk represents an increasing credit risk for banks and hinders the growth of the real economy.

Figure 7: New disbursement of loans to SME sector broken down by currency



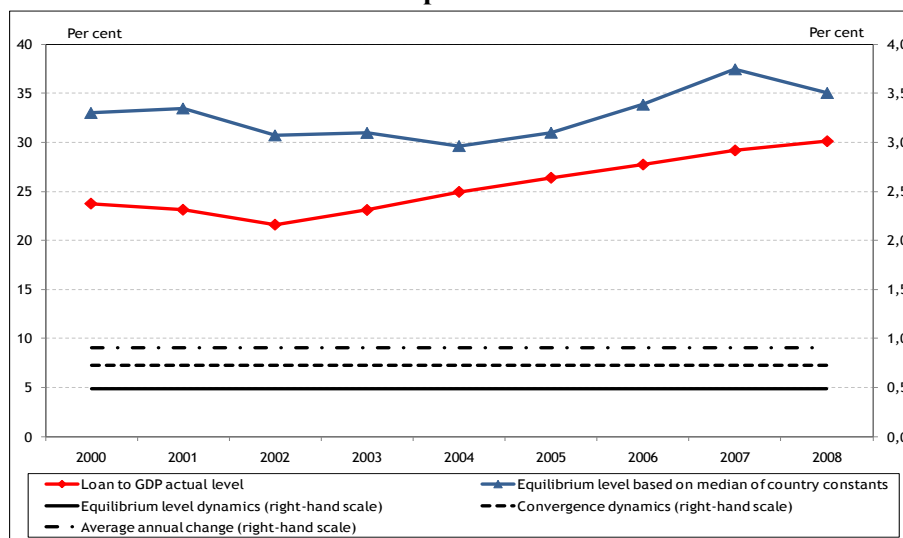
Source: MNB data.

Note: SME = small and medium-size enterprises.

As in the previous section, we rely on Kiss et al. (2006) in our analysis of the risks associated with the credit growth. However, since the cited study does not cover our review period, we drew up the equilibrium paths until 2008 based on the method described in the study. The credit/GDP ratio fell short of the equilibrium level defined by the median even during the period ending in 2008. This suggests that corporate lending was not subject to excessive growth.

As indicated above, actual level does not include direct foreign loans. For this reason, it is worth comparing the observed growth rate of credit/GDP with the growth rate of the indicator justified by the equilibrium path. Since the ratio of foreign direct loans to domestic loans is nearly constant, the dynamics of total loans (i.e. the sum of foreign loans and domestic loans) do not differ significantly from the dynamics of domestic loans. Another reason for doing this analysis is the fact that, owing to the large deviation of country constants, the definition of the equilibrium level is surrounded by greater uncertainty than that of the equilibrium dynamics. In addition, we also defined a rate of convergence.⁵ The result: average corporate credit growth was found to exceed the rate seen along the equilibrium path. Although, it was only marginally higher than the dynamics defined by the convergence path (Figure 8). Consequently, we cannot certainly say that there was a credit boom in corporate lending; most likely the rapid growth observed in this segment was driven mainly by the convergence process. However, due to the clients without a natural hedge, risks have built up in the corporate loan portfolio before the crisis.

⁵ To this end, we examined how much time the countries examined in the model needed to reduce deviation from the equilibrium by half. We considered the result as an appropriate rate of convergence. Since the period 2004–08 would have been too short for this analysis, we assumed that convergence started in 2000.

Figure 8: Estimation of equilibrium credit/GDP and credit dynamics of nonfinancial corporations

Source: Kiss et al. (2006); authors' calculations.

2.2.2 Retail segment

The rise in retail foreign currency lending in 2004 was not an isolated phenomenon in the region. Therefore, numerous papers have been focused on its causes and consequences. Several of the papers dealt with the motivation of the demand side. Some conclude that one of the main reasons for foreign currency lending is the differential between domestic and foreign interest rates (Basso et al., 2007; Csajbók et al., 2010). However, a number of other factors may also contribute to the appearance and rise of foreign currency (FX) lending. In addition, Csajbók et al. demonstrate that the availability of long-term, fixed-interest-rate loans in domestic currency reduces the indebtedness of households in foreign currency. According to the study, willingness to borrow in foreign currency would likewise decline if the monetary regime did not exhibit a “fear of floating” behavior: in other words, if households had more experience in interest rate volatility. Last, it is important for banks to have access to long-term savings in domestic currency, which also facilitates home currency lending.

Banai et al. (2010a) examine the motivations of the supply side. They argue that the expansion of foreign banks in the region and the nearly unlimited foreign currency liquidity also contributed to the rise of foreign currency lending. Indeed, large European parent banks provided their Hungarian subsidiaries with easy access to foreign currency financing. Moreover, striving to maintain their high profitability, banks appearing in the region were engaged in a risk-based competition for the household segment, which also encouraged foreign currency lending.

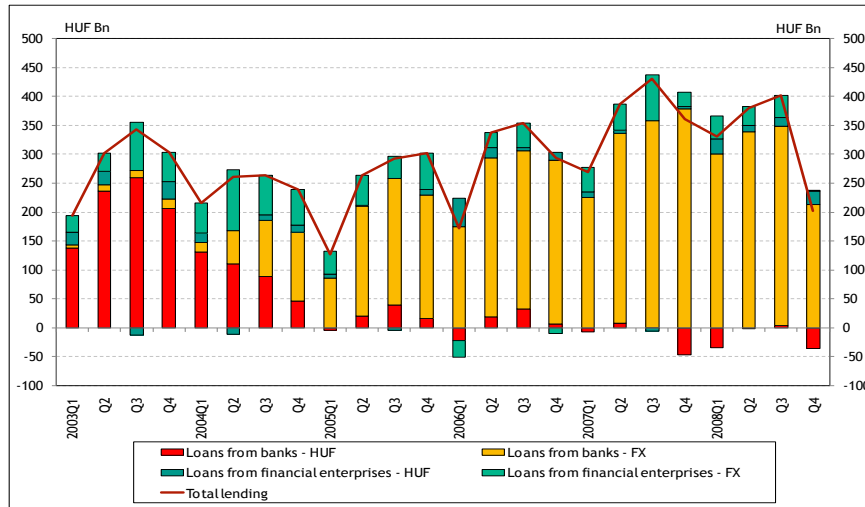
In Hungary the main trigger of the upswing in retail foreign currency lending was the drastic cutback in the state subsidy on forint-denominated housing loans.⁶ This increased the interest rate differential between forint-denominated and foreign currency loans (in particular, Swiss francs – CHF⁷), which

⁶ The study is not intended to examine either the reasons for the cutback, or its reasonability.

⁷ In Hungary the spread of CHF lending could be explained by the important role of Austrian banks. CHF-denominated loans were popular products in Austria and the outstanding volume of CHF loans to non-bank sector is still the highest in Austria among EU countries. In Rumania, Austrian banks were not really active in the pre-crisis period until 2007. In Slovakia and Czech Republic, FX retail lending was not significant. Baltic States and Bulgaria maintain an exchange rate fixed to the EUR so EUR-denominated loans were more favourable than other FX products. In Poland, rapid growth of CHF lending slowed down due to tightening regulations. Nevertheless, the share of CHF loans in total loan portfolio is significant.

has been shown by previous research to be a driving force of foreign currency lending. Following its peak in 2003, the net flow of household loans declined temporarily in 2004; however, in 2006 it reached the 2003 level and continued to accelerate in 2007–2008 (Figure 9).

Figure 9: Net change of loans outstanding to households by currency breakdown



Source: MNB data.

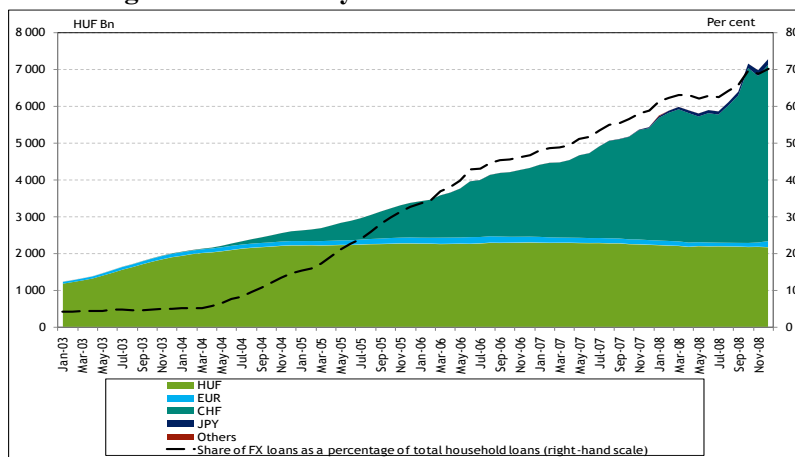
Note: “Banks” includes banks, branches, and cooperative credit institutions.

A specificity of Hungarian foreign currency lending was the fact that loans to households were almost exclusively denominated in CHF (Figure 10). In an attempt to secure the largest possible market share, foreign-owned banks initially entered into cost-based competition, which was subsequently replaced by risk-based competition. CHF-denominated loans gained ground as a result of risk-based competition (Banai et al., 2010a). Looking at the data recorded before October 2008 (the escalation of the crisis), the HUF/EUR exchange rate was only slightly less volatile than that of the Swiss franc. In contrast, Swiss interest rate levels were invariably lower than those prevailing in the euro area. Based on the former data, the lower initial installment amount associated with the lower interest rate appeared attractive even amid slightly higher exchange rate volatility. However, this ignores the fact that the Swiss franc had appreciated continuously since the 1970s, albeit at a different pace and with slight interruptions: initially against the Deutsche mark, and later also against the euro. Moreover, those having recourse to this product did not consider that, being perceived by investors as a safe haven, demand for Swiss-franc-denominated assets would surge during a potential crisis (MNB, 2010). Accordingly, in certain periods the volatility of the HUF/CHF exchange rate may significantly surpass that of the HUF/EUR exchange rate. Finally, debtors ignored the risk factor implied by the fact that the domestic monetary policy has little effect on the HUF/CHF exchange rate.

As a last chapter in foreign currency lending in Hungary, already overshadowed by the looming crisis, some banks began to issue Japanese yen (JPY)-based mortgage loans in late 2007. Even before the crisis, the Japanese interest rate level had been close to zero for a protracted period, resulting in even lower initial installment amounts than those of Swiss franc loans. However, the fundamentals of the European and the Japanese economy are not closely related. Consequently, the volatility of the JPY/HUF exchange rate was considerably higher than that of the EUR/HUF or the CHF/HUF exchange rates. Although the MNB and the Hungarian Financial Supervisory Authority (HFSA) warned the banks of the risks as early as the beginning of 2008 (MNB, 2008), it was only the worsening of the crisis that would eventually put an end to this unfavorable trend (Figure 10).

Besides, the spread of FX-denominated products risks was exacerbated by loosening credit conditions and standards. The loan-to-value (LTV) ratio for mortgage loans increased constantly and in many cases exceeded 100 percent. The banking system’s average LTV ratio for the housing loan portfolio was above 70 percent at the end of 2008, while in 2004 it was only around 50 percent. The average payment-to-income ratio also increased, which was supported by the ever lower documented mortgage loans. Finally, increasing reliance on brokers as a sales channel also meant higher risks, because loans granted via their intermediation were characterized by significantly higher default rates (Banai et al., 2010a).

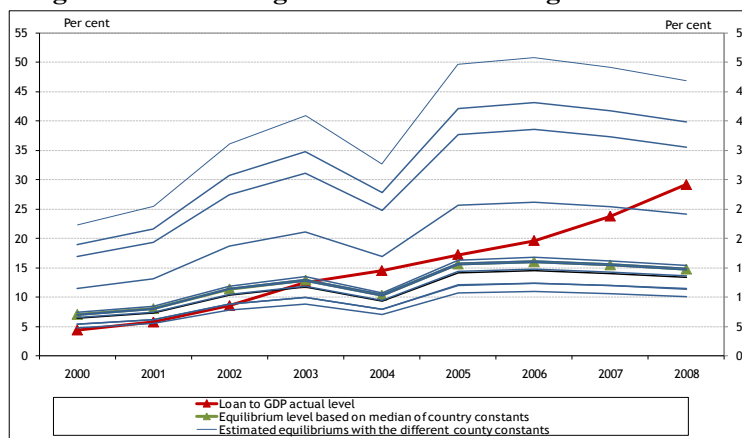
Figure 10: Currency structure of household loans



Source: MNB data.

The currency structure of the portfolio carried risks in itself. The question arises as to whether lending to households was affected by excessive credit expansion. As previously, we applied the method of Kiss et al. to find an answer. In the context of a sudden spike in lending, in 2003 the credit/GDP ratio rapidly reached the level of the equilibrium path. Owing to a moderate downturn in net flows in 2004-2005, the level of the ratio at the end of 2005 was still only slightly above the equilibrium. In 2006, however, developments in the portfolio deviated from the path justified by macroeconomic variables both in terms of dynamics and level. This growth accelerated further in 2007-08. Therefore, during the two years preceding the crisis there was clearly a credit boom in the household segment. Besides the hidden risks associated with the poor currency structure, the size of the accumulating portfolio imposed an excessive burden on households. This implied mounting risks to their debt servicing capacity (Figure 11).

Figure 11: Net change in loans outstanding to households



Source: Kiss et al. (2006); authors’ calculations.

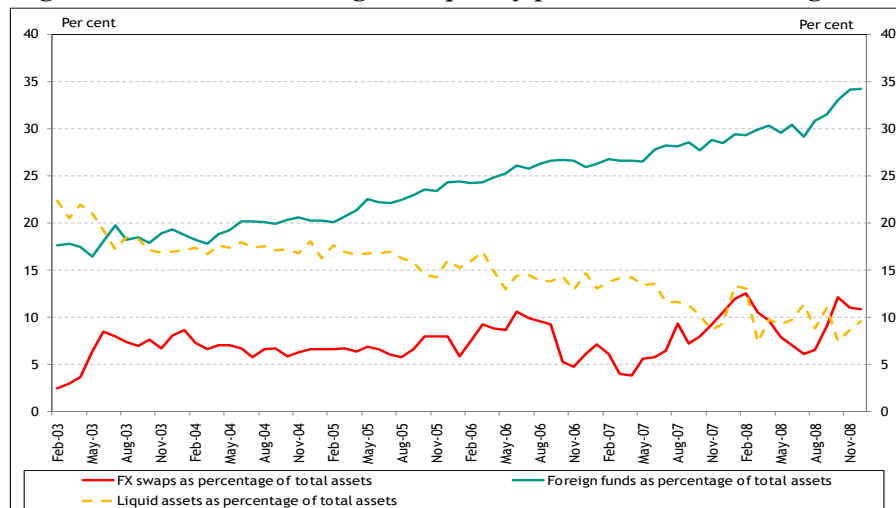
2.3. Financing risks

Owing to the credit boom and the currency structure of the loan portfolio, severe risks were building on the financing side as well. Since a number of studies (including Banai et al., 2010b) and several issues of the *Report on Financial Stability* have addressed this issue extensively, this paper is intended to merely touch upon the most important features.

The upswing in lending naturally goes hand in hand with convergence. Ideally, however, banks are capable of financing loans from internal savings. Accordingly, the loan-to-deposit ratio should be around 100 percent. In early 2003 this equilibrium prevailed in the Hungarian banking system. By the end of the year, however, the ratio rose to 110 percent, as the phase out of subsidized forint loans generated a sharp rise in net flow. Against the backdrop of the lending surge, the ratio rose nearly continuously and reached 160 percent by the beginning of the crisis. The dynamics of the loan-to-deposit ratio is in correlation with the share of foreign liabilities in the balance sheet. When the loan-to-deposit ratio rises above 100 percent, external funds are needed to replenish deposit funds. Developments in foreign liabilities confirm our previous statements. While their share was around 17 percent in proportion to the balance sheet total at the beginning of 2003, this value exceeded 30 percent by the onset of the crisis.⁸

Besides the increasing weight of foreign liabilities, risks were exacerbated by a growing reliance on the FX swap market. On the deposit side, Hungarian banks obtained liquidity predominantly in forint, which was conveniently used to close their open FX positions in the swap market. This allowed banks to obtain cheaper foreign currency liquidity. However, this meant higher funding liquidity risks. On the one hand, their excessive reliance on the swap market posed serious problems during times of market disturbances. On the other hand, foreign currency liquidity obtained in the swap market was generally of much shorter maturity than the on-balance sheet foreign currency funds, which increased renewal risks. Third, it led to a drastic contraction in the liquid assets portfolio of the banking system that serves to ensure that institutions are capable of meeting their obligations even in times of crisis. Despite all this, Hungary did not adopt any liquidity regulations aimed at mitigating these risks.

Figure 12: Ratios describing the liquidity position of the banking sector



Source: MNB data.

⁸ The acceleration recorded in the last three months of 2008 primarily reflected parent banks’ intentions to strengthen balance sheets.

2.4. Regulations: Why not?

As noted above, before the onset of the crisis, lending to households had carried serious risks both in terms of structure and volume, and had given rise to the accumulation of significant funding liquidity risks. This notwithstanding, Hungary did not adopt any regulatory measures aimed at the prevention of these negative developments. Below we attempt to find an explanation for this “inertia.” Why did the regulatory authorities fail to react despite the MNB’s nearly continuous warnings about the risks of foreign currency lending since the 2004 issue of its *Report on Financial Stability*? (For the legal relationship of institutions responsible for the financial stability, see Box 2)

We attempt to determine the pros and cons that may have been weighed as potential regulatory measures were contemplated. First, we examine the general consequences of regulations taken in response to rapid FX loan expansion from the perspective of macroeconomic and financial stability. We proceed to examine the advantages and disadvantages of individual regulatory measures. We structure the potential regulatory tools in line with Hilbers et al. (2005), also taking into account country-specific features.

Box 2: The role of institutions responsible for financial stability in Hungary

There are three different institutions (Magyar Nemzeti Bank (the central bank of Hungary), Hungarian Financial Supervisory Authority, Ministry for National Economy), in Hungary which are responsible for the financial stability. The legal relationship of the institutions is determined by the Central Bank Act (Act LVIII of 2001).

The MNB (central bank of Hungary), in cooperation with other competent authorities, shall support and shall contribute to the development and smooth conduct of policies related to the prudential supervision of credit institutions and to the stability of the financial intermediation system: it shall expose business and economic risks to the financial intermediation system on the whole, help to prevent the development of systemic risks, and to reduce or terminate systemic risks that may already exist. The President of the MNB may submit legislative proposals to the Government or proposals for initiating the legislative process, or to any member of the Government for adopting new regulations.

The microprudential supervisory power rests with the Hungarian Financial Supervisory Authority (HFSA), while the regulatory power is at the Ministry for National Economy. Based on this collective responsibility a new regulation taking effect on January 1st, 2010 established the Financial Stability Council (FSC) as consultative forum. Under its mandate high level representatives of the three authorities meet on a quarterly basis to discuss financial stability issues. The Council also has the right to call for formal regulation on a comply-or-explain basis.

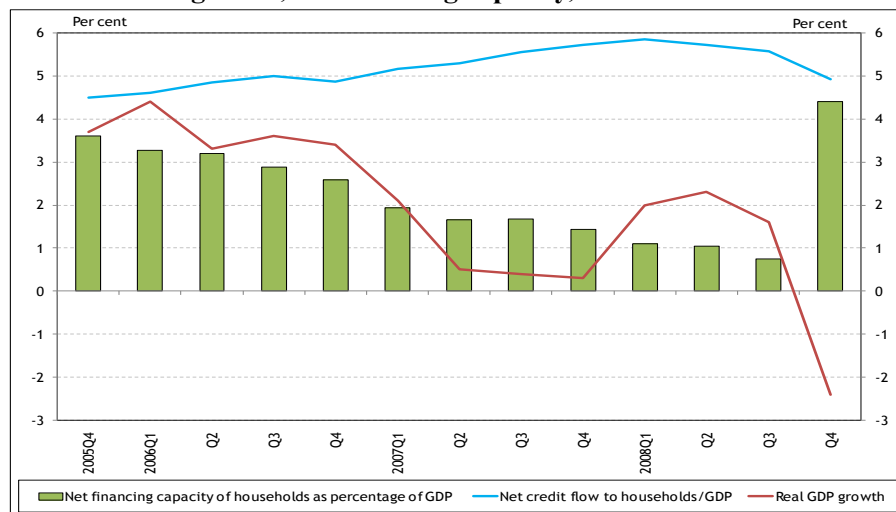
Under the Act on HFSA (Act of 2007/CXXXV.) this authority is mandated to collaborate with the central bank in mitigating and managing systemic risk. Since January 1st, 2010 the authority has the right to temporarily (90 days) suspend services, activities or trading at sectoral level in pre-emptive nature whenever any of these activities threat systemic stability.

In conclusion, while the central bank is entitled with financial stability oversight, it has no regulatory power, so to mitigate the identified risk it has to consult the two other authorities (the Ministry of National Economy and the HFSA) in the format of the Financial Stability Council so as to initiate any regulatory measure or supervisory intervention.

2.4.1 Macroeconomic impact

Over the short term, restricting foreign currency lending or making it more expensive temporarily reduces the household sector demand, depending on the substitutability between forint-denominated loans and foreign currency loans. The weakening of household demand reduces the external financing requirement, decelerating economic growth somewhat. In the short run, the deceleration leads to the deterioration of profitability in certain segments of the corporate sector. As such, the adoption of a regulatory measure during the credit boom would have been an extremely sensitive issue politically. From 2006, on the back of the fiscal adjustments, the income position of households deteriorated, which households tried to offset by borrowing. Nevertheless, economic growth took a significant downturn. Had lending to households been restricted by regulatory measures, this downturn would probably have been even more pronounced (Figure 13). Eventual accession to the euro area some years later also meant a regular counterargument. Exchange rate risk would not have been eliminated totally with this while most of the loan portfolio is denominated in CHF.

Figure 13: Real GDP growth, net financing capacity, and net credit flow of households



Source: MNB data.

Moreover, in the short run, the tightening of foreign currency lending would have resulted in higher yields and a weaker exchange rate, since households would have borne only a smaller part of the exchange-rate risk associated with the financing of the current account deficit. But over the long term, the prevention of a credit boom promotes a sounder growth structure.

2.4.2 Impact on the financial intermediary system

The most notable risk posed by the tightening of foreign currency lending is its short-term impact on banks' portfolio quality. Raising the cost of foreign currency loans and the depreciation of the exchange rate would have caused a sharp rise in installment amounts, increasing customers' probability of default. As an additional risk, in the case of housing loans, the fall in credit supply resulting from waning demand for foreign currency loans and portfolio deterioration may have generated excess supply and hence price devaluation in the real estate market.

Again, **over the long term**, the positive effects appear to be dominant. Financial stability is reinforced, on the one hand, by the moderation of the indirect credit risk assumed by the banking system as a consequence of the exchange rate risk of customers and, on the other hand, by the reduced vulnerability of the economy—that is, the improved external balance.

2.4.3 Assessment of specific measures

Below we provide a brief overview of a number of relevant tools applied in international practice for the purpose of restraining excessive foreign currency lending. In addition, we examine the arguments that may have been considered in favor of or against such tools during the time of the Hungarian credit boom.

- 1) **Monetary measures:** As the central bank and the financial supervisory authority are two separate institutions in Hungary, the best tool the central bank can use to impose restrictions on foreign currency lending is a change in the parameters of reserve requirements. The central bank may increase the cost of foreign currency loans by defining a higher reserve requirement or a lower interest rate (or both) on foreign currency liabilities. The disadvantage of this measure is that it is easily circumvented by banks through the creation of synthetic FX position (for example, forint funding combined with FX swap or currency forward transaction). In this case financial derivatives would have to be subjected to reserve requirements as well. However, besides making even transactions unrelated to foreign currency lending expensive, such a step could also have significant market effects. Banks may also try to avoid the brunt of the negative effects by selling certain components of the portfolio to other members of the same bank group (as we have seen in international practice). Finally, modifying the rules of reserve requirements would have represented a step backward in the harmonization of European monetary policy instruments.
- 2) **Administrative measures:** good examples of these instruments include a total ban or restrictive limits on loans unhedged against exchange-rate risk. The adoption of such measures limits or completely restrains foreign currency lending, but only temporarily. Such harsh interventions encourage evasion and intensify cross-border financial intermediation. Posing a severe threat to stability, the sharp decline in new loans could drastically deteriorate banks' profitability. This would also be detrimental to interbank competition and bank efficiency. Recourse to such tools is not only incompatible with European practice, it is not a typical course of action in developed countries either, which serves as an argument against the adoption of such measures.
- 3) **Prudential measures:**
 - *Higher capital requirements:* several countries relied on this tool in an attempt to raise the costs of foreign currency loans, and hence impose a restriction on such lending. As regards Hungary, this idea was generally viewed as ineffective, given the extremely high capital adequacy ratio prevalent in the banking system even before the crisis. In addition, it was generally agreed that a measure like this would encourage transformation of subsidiaries of foreign banks into branch offices or steer lending toward nonbank financial intermediaries.
 - *Tightening banks' net open FX position limits:* on the one hand, this may somewhat raise the cost of foreign currency loans; on the other hand, it may reduce the maturity risks stemming from synthetic positions. At the same time, the measure would reduce the risk of banks' excessive reliance on a specific financial market. However, it appeared doubtful whether such a step would yield any noticeable change. In addition, it may have hindered the development of financial markets.
 - *Tighter nonprice minimum eligibility criteria (LTV, payment-to-income—or PTI):* as we have seen, these ratios increased permanently in Hungary before the crisis. With carefully chosen limits, such a step could reduce lending in foreign currency; moreover, it would

affect the riskiest segments. However, even this measure could be circumvented by taking advantage of cross-border services.

- *Asset-side liquidity ratios*: this would include the mandatory holding of certain assets as a percentage of the balance sheet total, liquid funds or own funds. On the one hand, this makes lending more expensive; on the other hand, it facilitates the holding of more substantial liquidity buffers, which in turn increases shock-absorbing capacity. However, it is detrimental to growth, as the requirement is to hold liquid assets rather than loans.
- *Maturity mismatch regulations*: these are designed to prevent excessive reliance on short-term funds, thereby making lending more costly. Regulations of this type imply a pressure to create a healthier balance sheet structure, which reduces financing risks. They succeed in curbing excessive credit expansion only if “term premia” are not too marginal.

4) **Fiscal measures:**

- *Imposing taxes* on unhedged foreign currency lending is the most obvious option in this group of instruments. As a result, this type of lending becomes more expensive and less attractive. However, its disadvantage is that it withdraws funds from the institutions performing high-risk activities, further deteriorating their financial position.
- *Elimination of lending-related state subsidies* for these types of loans is another fiscal option. As a result of this step, loans become more expensive and thus loan issuance would indeed decline. It would be a hard sell, however, from a political perspective.

As we have seen, a wide variety of tools were available through which Hungary could have attempted to restrain excessive foreign currency lending. Although each measure had certain disadvantages, these were not always convincing as arguments against the specific regulation. While the applicability of monetary policy instruments was questionable, some of the prudential or fiscal measures could have been helpful. However, in these considerations more significance was attached to short-term negative growth effects than to long-term benefits.

3. Lending after Lehman: Regulatory measures and future challenges

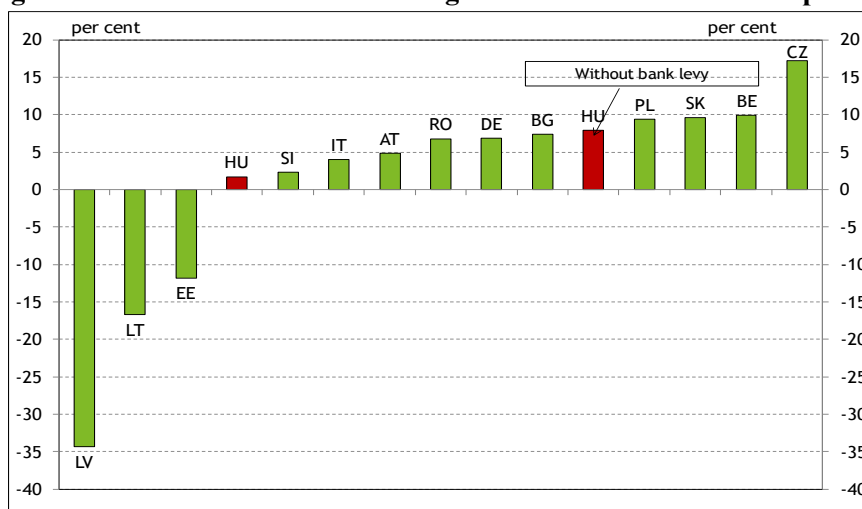
In the period following the collapse of Lehman Brothers, the global financial crisis escalated in Hungary as well as elsewhere. Practically all investors fled from markets deemed risky, posing a threat to both public financing and the financing of the banking system in Hungary. As a consequence of the country’s significant need for international funding and the extreme vulnerability this entailed, the exchange rate depreciated substantially and, in the wake of the crisis, key financial markets (mainly government securities, FX swap and interbank markets) dried up.

In an effort to manage the liquidity crisis, steps were taken by the government and the central bank (for further details, see Appendix 1.). Besides ensuring the usual local currency funding MNB played the role of ‘FX lender of last resort’. Stabilising the situation was impossible without the intervention of parent banks. They did not decrease but increased their exposure towards the country during the most intensive period of the crisis. At the same time, banks undertook large-scale adjustments. Initially, the corporate loan portfolio began to shrink, followed by a contraction in household lending. Thanks to the adjustments and the assistance received from parent banks, the banking system weathered the brunt of the first few months of the crisis. Confidence about the country gradually improved in the course of 2009.

Nonetheless, the underlying risks of the loan portfolio materialized as a consequence of the economic recession. Amid a continuous deterioration in the quality of the loan portfolio, banks suffered

increasing loan losses. Profitability was further deteriorated by the bank levy. Examples of such windfall tax can be found in other countries but the extent of the Hungarian one far exceeds the levies applied or planned in other countries. The major share of the levy applies to credit institutions, calculated based on their modified total assets for 2009. The levy is determined as 0.15 per cent of the tax base under HUF 50 billion and 0.5 per cent of the tax base above that. As a result, in 2010, profitability of the Hungarian banking sector was lower than in the countries of the parent banks and other countries of the region (except for the Baltic countries). Without the bank levy Hungary would be in the leader's group of Europe. If this low profitability remains for a longer period, in addition to banks' weakening ability to accumulate internal capital, Hungarian banks may suffer a competitive disadvantage in the allocation of parent banks' funds and capital (MNB, 2011).

Figure 14: ROE indicators of banking sector in international comparison



Source: MNB data.

Consequently, even as banks' liquidity position recovered gradually, their capital positions became a crucial issue on account of deteriorating profitability. While banks' capital positions remained safe from a stability perspective, the banking system has failed to support economic growth.

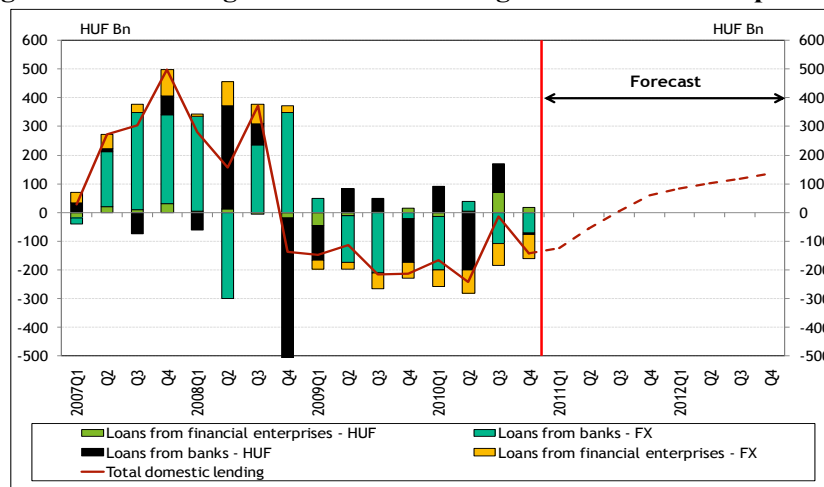
3.1. Corporate lending: Future challenges

In the initial period of the crisis, banks responded to mounting liquidity problems primarily by cutting back corporate lending. This was justified by several factors. As the average residual maturity of the corporate loan portfolio is significantly shorter than that of loans to households, in the short run it allows more robust adjustments on the part of banks. Since competition is much stronger in the corporate segment in the Hungarian banking system, margins are tighter and banks' profits are smaller on these loans. Finally, corporate loans usually have higher capital requirements than the mortgage loans constituting the bulk of the household portfolio.

From the last quarter of 2008, the corporate segment recorded a negative credit flow in each subsequent quarter. Although the economy started to recover as early as end-2009, this trend of negative credit flows continued throughout 2010. Contrary to developments observed in the region, economic growth has so far not been followed by a recovery in lending. Banks' loan supplies remain restrained for two reasons. On the one hand, banks' risk appetite remains low; on the other hand, reflecting the deterioration in the portfolio and the very high bank levy, capital buffers decreased, curbing lending ability. According to the forecast of the MNB, corporate lending is not expected to

pick up until late 2011 (Figure 15). Without a pickup in lending, the recovery of the economy may remain weak and fragile (MNB, 2011).

Figure 15: Net change in loans outstanding to nonfinancial corporations

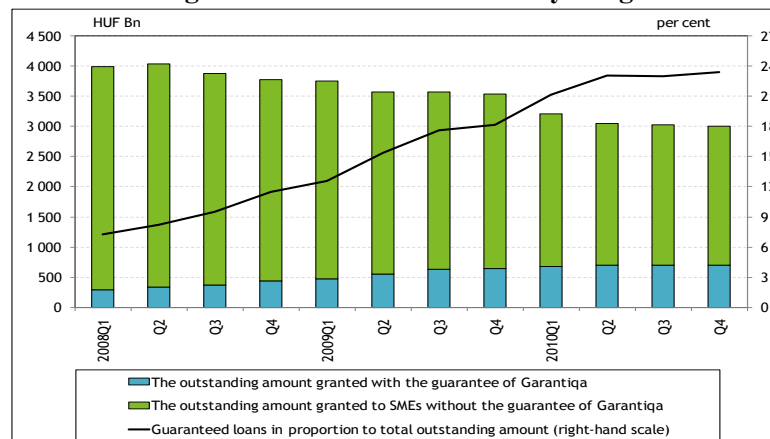


Source: MNB data.

Note: “Banks” includes banks, branches, and cooperative credit institutions.

As seen above, we cannot say that credit expansion in the corporate sector was excessive. Although risks were exacerbated by the currency structure of the loan portfolio, we have not found evidence of a problem similar in magnitude to that encountered in the household segment. Nonetheless, against the backdrop of the drastic downturn in the economy, the quality of the corporate loan portfolio deteriorated substantially. This, in turn, was reflected in the mounting losses on the portfolio, which impairs the lending ability of the banking system even further. Thus, the greatest challenge lies neither in changing the structure of the portfolio nor in controlling credit expansion; first and foremost, efforts must be made to revive lending, and the government should be involved in this process (e.g. interest rate subsidies, guarantee etc.). The difficulty is that the room for fiscal maneuver is fairly limited due to Hungary’s high public debt and former high budget deficit levels. Since it is mainly a supply problem (Sóvágó, 2011), the goal is to reduce the risks assumed by banks. A possible way to achieve this goal is the provision of state guarantees. Such programs already exist in Hungary; moreover, more than 20 percent of the loans extended to the SME sector are backed by state guarantee through Garantiqa Zrt (Figure 16). In view of the success of this program, similar options should be explored and aimed at supporting the revival of lending (MNB, 2011).

Figure 16: Loans outstanding to the SME sector backed by the guarantee of Garantiqa Zrt



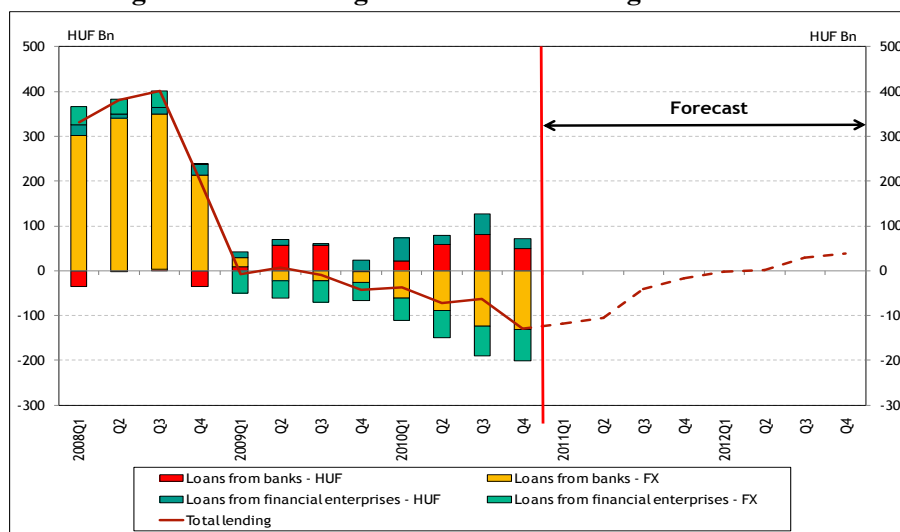
Source: MNB data.

3.2. Household lending: Regulatory measures

Although the household loan portfolio continued to grow in the last quarter of 2008, albeit at a slower pace, net flow turned negative in 2009. The negative effects of the financial crisis became increasingly obvious for households, as well, and was gradually perceived in their income position. In addition, rising installments, due to the weakening of the forint, made households more cautious. Nonetheless, this did not make forint-denominated loans more attractive, given the persistently high levels of forint interest rates. Thus, precautionary considerations became dominant on the supply side as well. Several banks removed CHF-denominated loans from their product range at the beginning of the crisis, while others severely tightened credit conditions. Net lending was, therefore, already negative throughout 2009.

Household lending remained weak in 2010. New disbursement was partly moderated by regulatory changes introduced during the year (see in details later). Moreover, the precautionary considerations of households intensified. In the course of 2010 the Swiss franc strengthened against the forint significantly, leading to a sharp increase in the debt-servicing burdens of households. Meanwhile, the labor market environment remained unfavorable. Consequently, despite their frail income positions, the households had to spend increasing amounts on debt service, which drastically decreased their willingness to borrow. As regards banks, lending was inhibited mainly by the rapidly deteriorating portfolio. Through the deterioration of the capital position, substantial loan losses are also detrimental to household lending. Accordingly, based on the MNB's forecast, lending is not expected to start recovering until the second half of 2012 (Figure 17).

Figure 17: Net change in loans outstanding to households



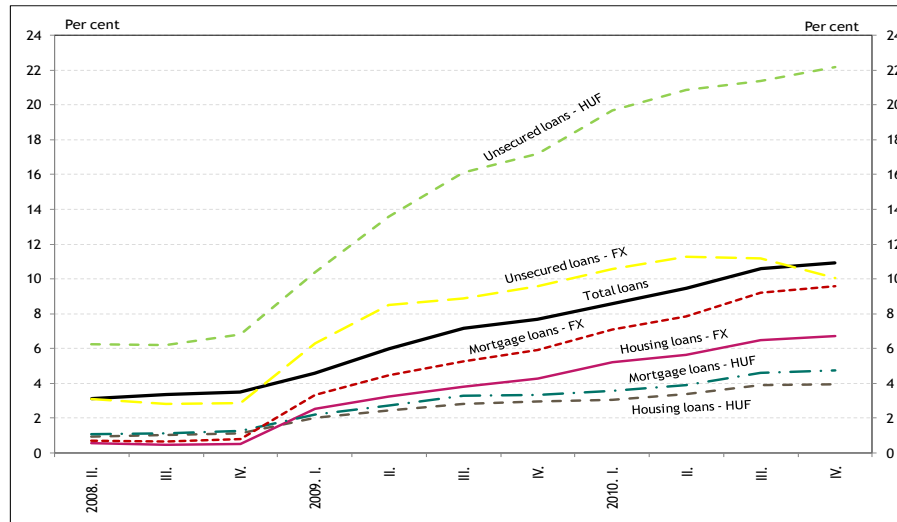
Source: MNB data.

Note: "Banks" includes banks, branches, and cooperative credit institutions.

The delayed turning point in household lending is part of the inevitable adjustment process. The main risk in this regard is not the downturn in lending but the rapid deterioration of the portfolio. As unsecured loans are associated with weaker willingness to repay, primarily it was these loans that went delinquent at the beginning of the crisis. However, in 2009 the quality of mortgage loans – which constitute the bulk of the loan portfolio – also began to deteriorate with increased installment amounts resulting from unfavorable exchange rate and interest rate developments combined with a negative labor market environment. This not only worsens banks' stability and lending ability, it also generates severe social tensions. To tackle the problem, the Government adopted a moratorium on evictions from

the properties serving as collateral for nonperforming loans as early as 2009. After several extensions, the eviction and foreclosure moratorium remained in effect until July 2011. However, this regulation merely addresses the social aspect of the problem, and it further aggravates banks’ situation. On the one hand, the law has clearly reduced willingness to repay; on the other hand, it forces banks to keep bad debts on their balance sheets and finance them (Figure 18).

Figure 18: 90+ delinquency ratio for certain retail product types



Source: MNB data.

3.2.1 Regulatory measures

Drawing from the experience of the crisis, several regulatory initiatives have been announced and implemented with an impact on lending to households. In light of the problems presented above, these initiatives had two objectives. One is to ensure the formation of a sounder lending structure as lending recovers. Forint-denominated loans came into the forefront with a simultaneous, drastic cutback on foreign currency loans, while authorities strive to pressure banks to assume less risk even in the case of forint loans. The other main objective is to provide better protection to borrowers. Indeed, banks used to have an option to raise interest rates on loans at will, and as a consequence, changes in the installment amounts were not predictable to customers. On occasion, this mechanism may have contributed to the deterioration of the portfolio.

Below we examine the regulatory initiatives that have been implemented in Hungary since the onset of the crisis. In some cases we also present their short-term impacts.

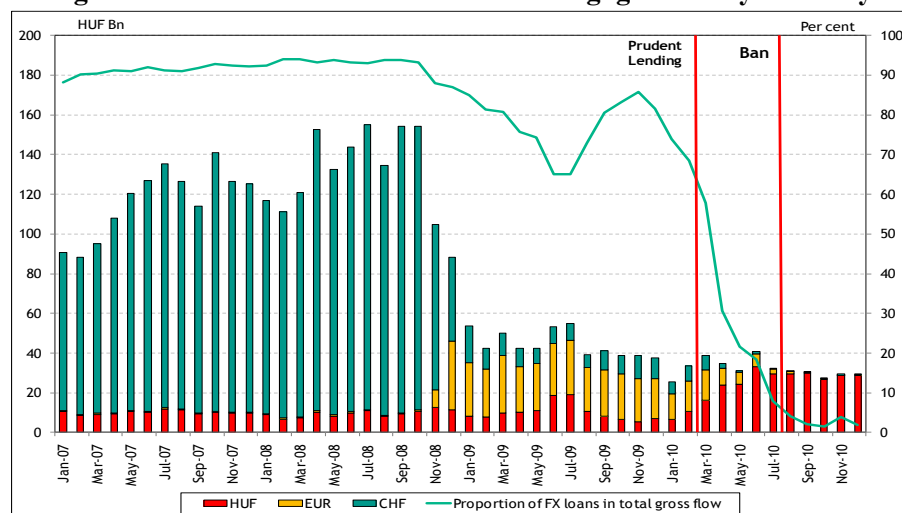
- 1) **Transparent pricing (step 1):** Ever since the gradual expansion in household lending, the fact that banks could unilaterally modify the terms of retail loan agreements had been an unresolved problem. After several proposals, the first step was taken in 2009. Banks were required by law to provide a cause-and-effect list in their loan agreements as to what entitles them to raise interest rates, fees, or charges. At the same time, the law entitled debtors to prepay their loans free of charge for a duration of 60 days from the date of an unfavorable, unilateral contract amendment (either by refinancing their loan or by taking out a new loan from a different provider). Market players—who denounced the legislation change and tended to stick to the regulation to the letter while they essentially evaded its spirit—inserted tediously long lists into their terms and conditions, which entitled the institutions, for instance, to raise their interest rates even on the grounds of rising marketing expenses. In addition, the long lists did not specify the extent to which transaction rates were to be modified if the listed

reasons materialized (for example, the percentage point by which interest rates were to be raised in case of a specific increase in marketing expenses). This counteracted the legislative intent pertaining to transparent pricing.

- 2) **Transparent pricing (step 2):** In light of the failure of the previous attempt, with the coordination of the HFSA, banks finally worked out a Code of Conduct, effective January 1, 2010, under which they committed themselves to exercise moderation regarding their unilateral pricing range. In essence, this translated into a moderate shortening of the cause-and-effect lists. The Government adopted the Code of Conduct and even passed a legislative amendment to incorporate it into the legislation. According to the amendment, creditors have to define their pricing principles in writing, providing an exhaustive list of all the factors on the basis of which they are entitled to unilaterally modify interest rates, fees, or charges at the expense of the customer. Fees or charges may be raised annually by the rate of inflation at most (even though these fees are typically expressed in percentage), and the Code of Conduct includes a consensual “sample” of the cause-and-effect list defined in the pricing principles legitimizing interest rate raises. Based on this, lenders can pass, at nearly any time, three types of risks on to their customers by unilateral contract modification: changes in the regulatory environment (*changes affecting business activity, that is, changes to legislation, taxes, reserve ratios, and deposit insurance fees*); increased cost of funding; and an increase in customer risk. Since this continues to leave ample room for banks to modify interest rates on loans, the criterion of transparency barely improved.
- 3) **Activity of brokers:** The activity of brokers also played an important role in the upswing in lending. During the years of the crisis it became clear that the rapid deterioration of the portfolio was partly attributable to the activity of brokers, as they enabled riskier customers to enter the lending process (MNB, 2008). It thus became important to tighten the previously loose regulations related to their activity. One of the objectives of the regulation was to define the various types of lending intermediaries. The classification is based on the entity on whose behalf they act. Further objectives were reducing the intermediation chains, tightening brokers’ working criteria (e.g. license), preventing a conflict of interest (e.g. regulation of remuneration).
- 4) **Prudent lending:** The central element of the regulation is that it defined differentiated LTV limits for retail mortgages, vehicle financing loans, and home leases. In the case of mortgage loans, the LTV limit is 75 percent for forint-denominated loans; 60 percent for euro-denominated loans, and 45 percent for loans denominated in other currencies (for example, CHF). As regards vehicle financing loans and home leases, the regulation is less strict; their limits are 80 percent, 65 percent, and 50 percent, respectively. Another important element of the regulation requires banks to set up creditworthiness limits based on the assessment of the creditworthiness of individual loan applicants in proportion to monthly income. As a result of the regulation, the ratio of foreign currency loans to new mortgage loans fell below 10 percent. Nevertheless, the total gross flow, which had already been extremely low because of the crisis, did not change significantly. The regulation appeared to provide sufficient restrictions in the event of an upsurge in lending (Figure 19).
- 5) **Ban on foreign currency mortgage lending:** Despite the success of the regulation aimed at facilitating prudent lending, in mid-August 2010 a law came into effect prohibiting registering a mortgage on real estate in the Land Register if it is based on a mortgage loan contract in foreign currency by natural persons. The effect of this act was rather negligible, given that foreign currency mortgage loans had practically disappeared already on the back of the act on prudent lending.

- 6) **Enhancement of the mortgage bond market:** As the study by the Csajbók et al. (2010) demonstrated, the lack of availability of long-term, fixed-interest-rate loans in domestic currency reduces the possibility of an upsurge in foreign currency lending. This requires long-term forint savings. In addition, the crisis proved that a reason for the vulnerability of the Hungarian economy is the lack of long-term forint savings. With that in mind the central bank took steps to enhance the forint-denominated mortgage bond market. In this context it launched a mortgage bond purchase program with the intention of purchasing mortgage bonds in the primary and secondary markets at a value of HUF 100 billion at most. With these steps the MNB wanted to improve the covered bond market which may have positive effects on the demand of these securities.
- 7) **A proposal package aimed at reducing banks’ abuse of dominant economic position for the protection of distressed customers:** The package adopted at the end of 2010 increased the rights of borrowers in certain aspects while it strived to improve the transparency of pricing; however, it failed to achieve real changes. The points accepted include the following:
- In respect of housing loans, only interest rates can be modified by banks unilaterally, and strictly for predefined reasons (service fees and other charges cannot be modified⁹). These reasons, however, did not materially curtail banks’ leeway.
 - In case of foreign-currency-denominated loans, banks are required to apply either the central bank’s or their own mid-rate. (In other words, banks may not use the FX sell rate for calculating the installment amount).
 - As regards loans for house purchases, the law set the upper limit of prepayment fees at 1.5 percent, while it abolished prepayment fees altogether for loans under HUF 1 million, provided that the customer had no prepayment in the previous 12 months.
 - Pursuant to the regulation, once every five years customers may request the extension of maturity of housing loans free of charge.
 - Under the new law, in the case of housing loans, 90 days after termination of the contract on a defaulting loan banks may not charge late payment interest, only their normal transaction interest.

Figure 19: New issuance of household mortgage loans by currency



Source: MNB data.

⁹ The former regulation (point 2) still stands for home equity loans.

The measures adopted thus far were conducive to ensuring that once lending recovers it will be healthier both in terms of volume and structure relative to precrisis practices. However, the risk of returning to the irresponsible precrisis foreign currency lending practices could be reduced further. While the prevailing regulations prohibit purely collateral-based lending, they allow a wide margin for the income-based creditworthiness limit. It would be advisable, therefore, to introduce significantly stricter PTI limits. While the LTV limit primarily protects banks, rather than customers, from substantial losses, the PTI limit would mainly protect debtors from excessive risk exposure. The existing regulations have not resolved the problems related to the lack of transparency in pricing. Therefore, the pricing of loan products should be subjected to more stringent regulations, for example, through the mandatory introduction of products with an interest rate fixed for a longer interest period, or products with fixed premium and variable interest rates (MNB, 2011).

3.3. Basel III, as a future challenge

Above, we addressed the regulatory measures adopted heretofore, explicitly designed to tackle country-specific problems. However, in our review of macroprudential measures we cannot ignore the fact that, as a result of a joint, international effort, the Basel Committee (Basel Committee on Banking Supervision, or BCBS) has put forward its recommendation package to be implemented with CRD IV and CRR¹⁰ in member states across the European Union, including Hungary. Although the exact form of European implementation is not known, a few key issues should be highlighted.

The primary objective of the new capital regulation is to ensure that banks have capital at their disposal in sufficient quantity and quality, thereby improving the shock-absorbing capacity of banking systems. According to the Basel recommendations, banks' capital requirements consist of three components: a minimum amount of regulatory capital, a mandatory capital conservation buffer, and a counter-cyclical capital buffer designed to mitigate the pro-cyclical nature of banks' behavior. Therefore, the capital requirements of banks increased significantly; moreover, more stringent capital definition was imposed. However, to achieve the targeted levels, banks have a rather long period of adjustment at their disposal: maximum levels are expected to be achieved by 2019. We do not expect this change to pose significant problems for Hungarian banks. The Hungarian banking system has had fairly high capital adequacy levels even before, mainly constituted by capital components of the highest quality.

However, the introduction of the two liquidity ratios is a more important issue in light of the financing risks described above. The objective of the LCR (Liquidity Coverage Ratio) is to ensure that banks can meet their obligations even during a 30-day severe stress scenario; in other words, they must maintain a liquid asset buffer of sufficient size. As described above, banks' liquid assets diminished before the crisis and, consequently, the banking system initially faced the crisis without an adequate liquidity buffer at its disposal. This demonstrates that the regulation is aimed at containing risks relevant to the Hungarian banking system. The liquidity position of the Hungarian banking system has improved significantly since the beginning of the crisis. (For example, the ratio of liquid assets to balance sheet total increased to 15 per cent from 7 percent.) This notwithstanding, meeting the minimum liquidity coverage ratio might still be difficult for certain financial institutions—partly because of real, existing risks and partly because the regulation attempts to apply uniform standards to very different types of banking systems. A good example of the former is reliance on the swap market, which has not decreased despite the fact that it represented a severe risk during the crisis. The cash outflow resulting from the exchange rate shock reflected in the ratio is a phenomenon also observed in Hungarian

¹⁰ For details see: http://ec.europa.eu/internal_market/bank/regcapital/index_en.htm

practice. This therefore justifies the maintenance of a liquidity buffer. However, the handling of parent bank funds as simple interbank funds and the inordinately strict criteria applied to the use of the preferential weighting of corporate deposits' outflow could create unnecessary difficulties for Hungarian banks.

NSFR (Net Stable Funding Ratio), the second liquidity ratio, aims to reduce maturity mismatches in banks' balance sheets. Therefore, achieving the expected level of the ratio will be made difficult by the recently observed developments in Hungary. Short-term external funds have gained an increasingly important role within external funding. At the same time, the ratio of funds with short residual maturity has gained ground within the balance sheet (MNB, 2011). While the occurrence of this change is not limited to Hungary, it represents a risk.

In short, certain banks may encounter difficulties in trying to meet the liquidity criteria. The adjustment process of Hungarian credit institutions may have serious impacts on the real economy, and the later they begin the adjustment, the greater the impact will be. It is important, therefore, to consider country-specific features in the course of European implementation, and not to force banks to make bigger adjustments than warranted by the risks.

4. Conclusions

The crisis, which began in 2007, had a strong impact on the Hungarian economy. More than two years after the escalation of the crisis, the loan portfolio of the private sector was still on the decline in Hungary, and it appears now that the recovery of lending may not be expected until the end of 2011 in the corporate sector, and even later in the household sector. The current negative developments can be attributed to the rapid external indebtedness preceding the crisis and the growing vulnerability of the country. Despite a significant improvement in its economic position, Hungary is still considered a risky area and is treated by banks with greater caution. Moreover, as the risks accumulated during the precrisis period materialized (and the bank levy was imposed on banks), the profitability, and hence, the lending ability of the banking system deteriorated sharply.

The analysis of the past 10 years or so sheds light on what led the Hungarian economy to its current situation. When the modern Hungarian banking system came into existence, the banking business focused mainly on corporate lending. By the late 1990s, fierce competition developed among banks in this segment. As regards firms, demand for bank financing arose due to the lack of a functioning capital market (e.g. the ratio of securities other than shares is still below 2 percent on the liability side of firms). While the indebtedness of firms was a rapid process, it was consistent with the convergence of the Hungarian economy. The main risk factor was the growing share of foreign currency loans within the portfolio. The substantial foreign currency loan portfolios, particularly FX loans extended to the SME sector, suggest that borrowers did not always have sufficient foreign currency income to serve as a natural hedge.

Lending to households evolved differently relative to the corporate sector. Until the beginning of the 2000s, households were practically not linked to financial intermediaries on the liability side. However, the newly offered, state-subsidized forint-loans proved to be attractive, leading to a sharp surge in the household loan portfolio, particularly in the period 2002-2003. After a drastic cutback of the subsidy in 2003, this loan product became far less attractive from 2004 onward. The response of the banking system was nearly instantaneous, with the offering of a new product. Banks started to provide foreign-currency-based mortgage loans to their customers. The product was an instant success.

From 2005 the indebtedness of the households exceeded the growth rate that would have been justified by the convergence, and the period 2007-2008 was characterized by a credit boom.

Nevertheless, regulatory measures were not taken until the period of the crisis. The lack of action can be attributed to growth sacrifice and the uncertainty surrounding the efficiency of the potential measures. The crisis harshly revealed the magnitude of the accumulated risks. Considerations about household lending, therefore, focus on two central issues. First, after the recovery, what can be done to promote sounder lending practice, both in terms of structure and volume? Second, what can be done to assist distressed debtors? As regards corporate lending, a different question has come to the forefront. What can a government do to boost lending when, at the same time, it is constantly forced to make fiscal adjustments?

The past two years have seen significant changes in the regulatory environment of household lending. In line with the objectives described above, prudential tools have been applied, while transparency and the protection of customers were reinforced. Meanwhile, efforts are being made to facilitate lending to the corporate sector by guarantee schemes. The implementation of the Basel III recommendation package may moderate financing risks; however, there are still uncertainties about the expected effects.

The painful experiences of the crisis demonstrated that an excessive upsurge in lending inevitably leads to some degree of weakening in growth momentum. It is a matter of decision, however, whether this is set in motion in a coordinated manner, by regulatory measures, or triggered by a crisis.

Acknowledgements

The authors wish to thank Gergely Fábián and Gábor Szigel for their assistance in preparing this study.

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Appendix I.: Main measures applied to maintain the stability of the banking system

MNB reactions:

Increased the liquidity surplus to support banks' HUF liquidity needs

- Purchasing government bonds (in the last quarter of 2008),
- New lending facilities (2-week and 6-month loan from October 2008)
- Broadening collateral base from November 2008 (municipal bonds, covered bonds, minimum rating: BBB-)
- Reducing reserve requirement (from 5% to 2% in December 2008), modifiable required reserve ratio from November 2010
- Increasing FX-reserves (FX loans from EU, IMF)

FX-swap facilities supported with swap line

- Supporting FX liquidity need of the banks and enhancing transmission mechanism through normalised implied HUF rates in FX- swap market
 - Overnight EUR/HUF FX-swap tender (two simultaneous possibility from October 2008, the two-way overnight EUR/HUF FX-swap tender was suspended in May 2009)
 - 1 week CHF/EUR FX-swap (from February 2009 till January 2010)
 - 3-month and 6-month EUR/HUF FX-swap (from March 2009, 6-month facility was suspended in July 2010)

Government steps:

- Direct state loan from the government to banks not having strategic foreign owner from IMF loan (OTP, MFB, FHB)
- Setting up a capital injection and guarantee scheme from IMF loan (pre-emptive actions)

International support:

- International Monetary Fund (IMF), European Commission (EC), World Bank program (from November 2008): under the agreement Hungary got access to a standby credit
- facility of up to EUR 20 billion
- Vienna Initiative (from March 2009): a dialogue between International Financial Institutions (IMF, WB, EBRD, EIB, IFC) and commercial banks active in the region so as to ensure coordination on cross-border issues and continued lending to the region. Parent banks accepted not to decrease their country exposure.