

# The demise of the halcyon days in Hungary: “foreign” and “local” banks – before and after the crisis

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## Introduction

Banks owned by foreign strategic owners have been present in Hungary since the mid-1980s and, as a result of the large-scale bank privatisation in the mid-1990s, the lion's share of the Hungarian banking system was acquired by foreign strategic owners. The effects of this process have been the subject of numerous studies. Ábel and Szakadát (1997) focus on the structural transformation of the banking system in the 1990s and the related costs. The authors conclude that the transformation of the banking system was successful overall, but that its pace was too sluggish, leading to additional costs. Hence, had large banks been pushed into carrying out structural transformations at the very beginning of the 1990s, consolidation costs would have been lower. Várhegyi (1998) examines the Hungarian banking system's ownership structure. The study comes to the major conclusion that, by allowing foreign banks entry and participation in bank privatisation, the Hungarian banking system's operation resembled that of developed countries in many aspects by the end of the 1990s. Mérő and Valentinyi (2003) reach a similar conclusion after examining the role of the appearance of foreign banks in central and eastern Europe. Várhegyi (2002) explains in detail the development of the banking system following the transition by presenting the transformation and business strategy of individual banks. Király et al (2007) examine the Hungarian banking system's corporate governance structure. The study reveals that the murky, fragmented nature of state ownership is the source of severe management problems.

Numerous studies have also been written on the Hungarian features of the 2007 global financial crisis and its effects on the banking system. From October 2008, following the collapse of Lehman Brothers, Hungary was affected by a severe financial/liquidity crisis, which threatened to paralyse the entire financial system, followed by a deep recession. The Hungarian banking system's reaction to the global financial and economic crisis has also been presented from numerous perspectives. Király et al (2008) deal mainly with contagion channels, highlighting the role of risk premia and two-way contagion channels between parent banks and subsidiaries. Várhegyi (2008) attributes Hungary's and its banking system's high vulnerability to external balance problems and substantial credit expansion. Király (2008) presents the Hungarian banking system's pre- and post-Lehman period from a liquidity perspective. According to the study, the crisis could have been prevented with restrictions and limitations in all cases where an apparent excess of liquidity led to irrational results, such as disproportionately high leverage, asset price bubbles financed by credit growth and banking systems supported solely by external financing, operating with excessively high loan-to-deposit ratios. Banai et al (2009) analyse the behaviour of European banking groups exposed to the central-eastern European region and conclude that, contrary to the fear of foreign investors, the outflow in parent bank financing remained modest during the crisis.

A number of studies have thus dealt with the effects of privatisation, the performance of banks acquired by foreign strategic owners and those having chosen other paths, as well as

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<sup>1</sup> Central bank of Hungary. This paper was finalized at the end of 2009 and reflects the authors' personal professional opinion, and not the Magyar Nemzeti Bank's official stance.

the effects of the 2007 crisis on the banking system.<sup>2</sup> However, to the best of our knowledge, this is the first paper to examine the asymmetries in the behaviour of the two main strategic groups of the Hungarian banking system in the pre- and post-Lehman period.

From the perspective of the events which occurred in Hungary, we consider **October 2008 as the starting point of the crisis.** We will compare the performance of two groups of banks: “foreign” and “local”. “*Foreign banks*”<sup>3</sup> include institutions in which *foreign strategic investors acquired majority ownership* primarily in the course of privatisation in the 1990s. “*Local banks*”<sup>4</sup> include banks held in majority by *domestic (state) investors*, or held in shares scattered among owners *on the stock market*, ie where privatisation by foreign strategic investors was avoided. We are aware of the fact that the “foreign” and “local” groups are highly heterogeneous,<sup>5</sup> but the present paper does not aim to elucidate this heterogeneity, focusing instead on the differences in behaviour between the two groups.

The first half of the paper examines in detail the performance of banks from the end of the 1990s until the **onset of the financial crisis in October 2008.** In the early 2000s, increasing retail credit market competition<sup>6</sup> among foreign and local banks determined the similarities or differences in strategy. “Local banks” began their expansion in eastern Europe at that time, thereby competing not only with the subsidiaries but also with the parent banks of “foreign” banks. During this period, the balance sheets of the two groups were characterised by rapid credit expansion, high profitability and the emergence of liquidity and credit risks.

In the second half of the paper we focus on the divergent behaviour of banks during the global financial crisis. Following the onset of the crisis in Hungary in October 2008, all banks faced a radically altered financial and macroeconomic environment and had to adapt to the new conditions. With regard to this period, we concentrate on examining whether the

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<sup>2</sup> The banking system includes all the banks, branches and specialised financial institutions except for Keler, MFB and Exim. Savings cooperatives and savings cooperatives which transformed into banks (Dél-Dunántúli Regionális Bank, HBW Express Bank, Kinizsi Bank and Mohácsi Bank) were left out of our analysis due to their special corporate governance and business strategies.

<sup>3</sup> In the investigated period (1999–2009) the group of foreign banks includes the following: Allianz Bank (formerly Dresdner Bank until 2006), ABN Amro Bank (merged with Kereskedelmi és Hitelbank in 2001), Általános Értékforgalmi Bank (became an investment company in 2007 and was left out of our analysis), Banco Popolare (formerly IC Bank), Bank of China, Bank Plus Bank, Budapest Bank, Cetelem Bank, CIB Bank, Commerzbank, Credigen, Deutsche Bank, EB und HYPO Bank Burgenland Sopron, Erste Bank, Fundamenta Lakástakarékpénztár, Hanwha Bank, Inter-Európa Bank (merged with CIB in 2007), KDB Bank (formerly Daewoo Bank), Kereskedelmi és Hitelbank, Magyar Külkereskedelmi Bank, Opel Bank (became a financial enterprise in 2002 and was left out of our analysis), Porsche Bank, Rabobank (became a financial enterprise in 2002 and was left out of our analysis), Raiffeisen Bank, Société Générale Bank (became a financial enterprise in 2002 and was left out of our analysis), Unicredit Bank (formerly HVB Bank – prior to 2006 – which was established through the merger of Hypovereinsbank and Bank Austria Creditanstalt), Unicredit Jelzálogbank (HVB Jelzálogbank until November 2006), Volksbank and Westdeutsche Landesbank. The group of foreign banks also includes the following foreign branches: Axa branch (formerly Ella, then Axa Bank), Banco Primus branch, Bank Sal Oppenheim, BNP-Paribas branch (formerly BNP-Dresdner then BNP-Paribas Bank), Calyon SA branch (formerly Credit Lyonnais then Calyon Bank), Citibank branch (formerly Citibank), Cofidis branch, Fortis branch, ING branch (formerly ING Bank) and Oberbank branch.

<sup>4</sup> In the investigated period (1999–2009), the group of local banks includes OTP Bankgroup (OTP Bank, OTP Mortgagebank, Merkantilbank and OTP Lakástakarékpénztár), FHB Bankgroup (FHB Mortgagebank and FHB Bank), the Postabank (until 2004), Magyar Takarékszövetkezeti Bank and ELLA Első Lakáshitel Kereskedelmi Bank. Despite the small number of banks, the overall market share of this group exceeded 30% of the total assets of the banking system in 2008.

<sup>5</sup> Privatisation unquestionably represents a behavioural change in a bank’s operations: nevertheless, we consider the difference between banks owned by foreign strategic owners and those without such ownership more significant than the difference between state-owned banks and those with ownership dispersed through the Hungarian stock exchange.

<sup>6</sup> We focus mainly on the retail market, and only touch on the development of the corporate market.

different ownership structures and the various pre-crisis strategies required diverse crisis management practices.

## I. “Foreign” and “local” banks before the crisis

The consolidation of the banking system during the transition and the establishment of market-based operations were part of Hungary’s economic transformation. While the institutional framework of a market economy was established, the earlier one-tier banking system was transformed into a two-tier system as part of the market reforms, while an increasing number of foreign strategic owners were entering the market and the proportion of indirectly state-owned banks was increasing.

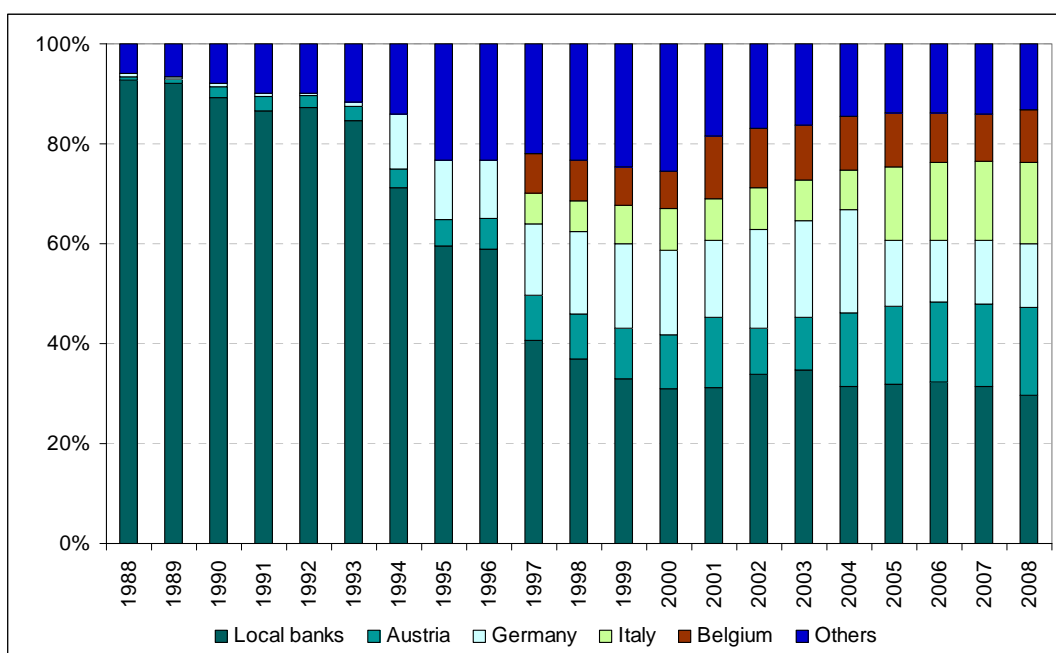
### I.1. Retrospection: the evolution of the current ownership structure

In 1990, the proportion of foreign strategic ownership in the Hungarian banking system was a mere 5%, although it was constantly rising with the successive entries of “greenfield” – primarily Austrian, Italian, German and Benelux – banks. Nevertheless, mass privatisation only got under way following the collapse of the banking system in 1993.

The state loan, debtor and subsequent bank consolidation programmes implemented after the 1993 banking crisis improved somewhat the portfolio and capital position of majority state-owned credit institutions. The fact that state assets were insufficient to manage the accumulated problems (Ábel and Szakadát (1997)) facilitated the acceleration of the privatisation process from 1994. Privatisation with the participation of foreign owners was a necessity, arising from the deficiency of internal capital accumulation (Szapáry (2001)). On the other hand, sales to foreign strategic investors were justified by the anticipated “knowledge import”. In the early 2000s, the ownership share of foreign banks in the Hungarian banking system reached a level of around 70% (Chart 1).

Chart 1

#### Developments in the ownership structure of the Hungarian banking system



Note: We considered the OTP group as entirely domestic-owned.

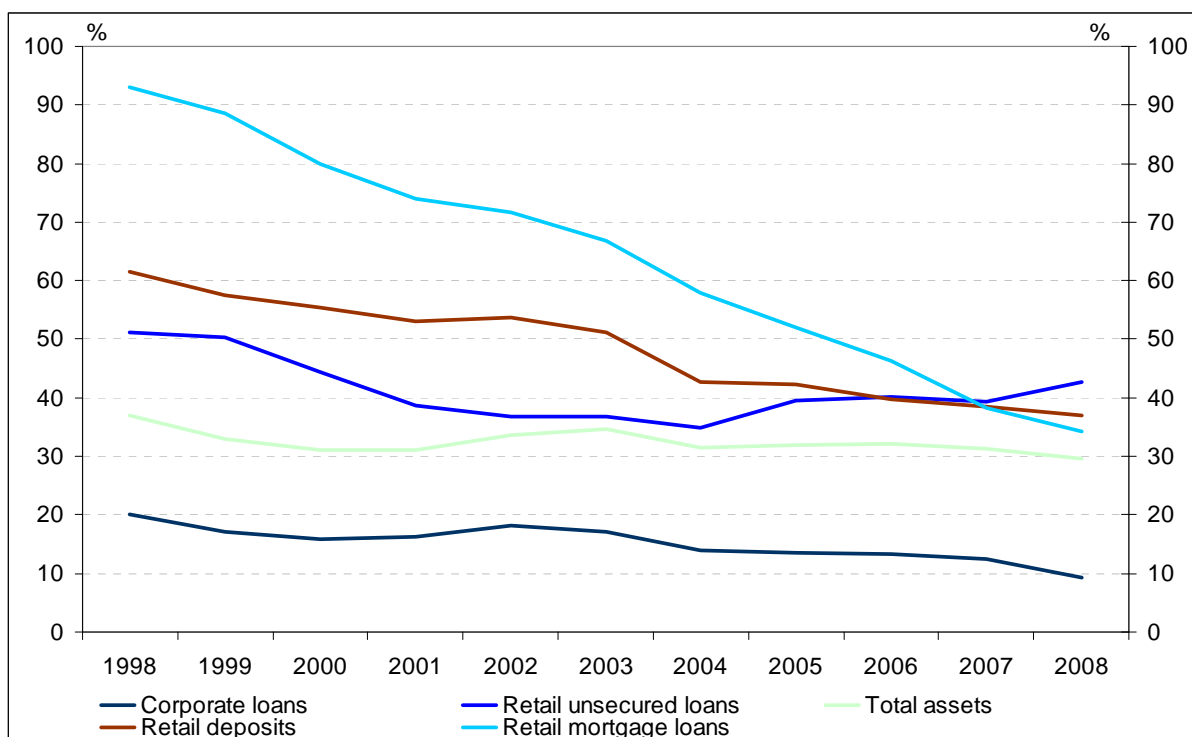
Sources: Magyar Nemzeti Bank (MNB), PSZÁF.

Expansion towards the east was part of western European banks' long-term strategy during the era of mass privatisation. The basic assumption was that Hungary, after getting through its transitional crisis, would continuously converge with western European countries and display rapid economic growth and, thus, rapid revenue growth. At the outset, foreign banks appeared primarily in the corporate segment, which required lower initial investment, and did not represent fierce competition in the retail segment until the early 2000s (Móré and Nagy (2004)). The entry of foreign banks into the retail segment was limited by numerous factors besides the inherited competitive edge of local banks. One such entry barrier was information asymmetry, which characterised household lending due to the short credit history of Hungarian households. This problem affected local banks to a lesser extent, as their continuous participation provided them with far more information about customers. 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 compared to the corporate segment. The associated high costs prevented foreign banks from entering this market or from strengthening their presence for a long time.

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 similar "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 pre-transition period and had experience in the field of commercial banking, could thus offer, overall, more favourable conditions to customers than their domestic competitors (Chart 2.)

Chart 2

**Market share of local banks based on certain balance sheet items**



Source: MNB.

Thus, foreign banks gained ground within the Hungarian banking system following the transition, first as greenfield investors, then as privatisers. The major players were the Austrian banks Raiffeisen, Erste and Creditanstalt, the Italian banks Intesa and Unicredito, the German bank BLB and the Belgian bank KBC (and, before that, the Dutch bank ABN Amro).

However, OTP, the “national champion”, was not sold to foreign strategic investors, but instead privatised in 1995 via an initial public offering on the stock market. FHB Bank, founded in 1997 and with a main profile of mortgage-backed lending, was also kept from foreign acquisition by being privatised on the stock market in 2003, similarly to OTP. These two banking groups became the most significant players among the banks that have never been owned by a major strategic investor.

## **I.2. The credit boom on the retail market: non price-based competition**

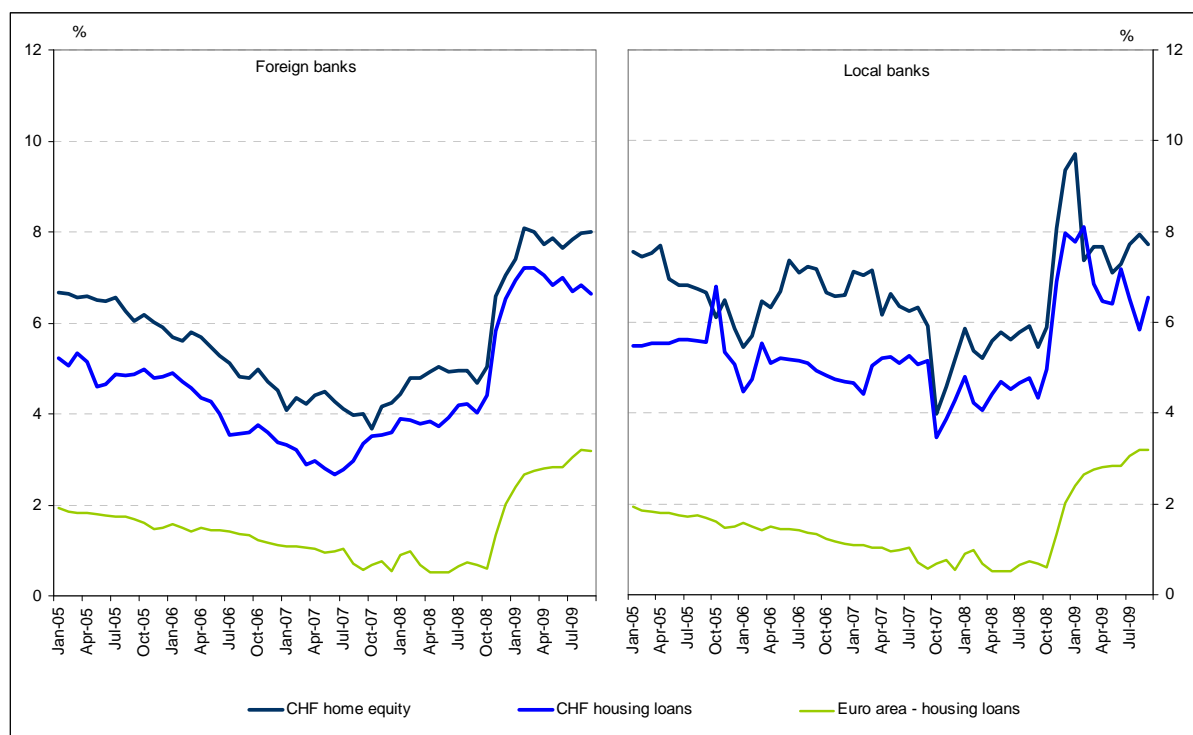
The end of the 1990s saw a change in the attitude of foreign banks. As the profitability of the corporate segment began to dwindle due to fierce competition, banks were more inclined to turn towards the retail segment. Meanwhile, households exhibited an increasing demand for bank products as a consequence of improving income growth prospects.

Throughout the entire pre-crisis period, “*price-based competition*” between banks was low.<sup>7</sup> Although local banks applied higher interest in the case of loans and lower interest in the case of deposits than their foreign competitors, the banking system as a whole was characterised by oligopolistic pricing (Várhegyi (2003), Krekó et al (2006), Horváth et al (2007)). Banks’ behaviour may have been influenced by the fact that Hungarian customers’ price sensitivity was low (Horváth, et al (2007)) and, therefore, price was not the most important factor in the acquisition of new customers. The business policy of banks was based on acquiring more customers at the price of higher costs or risks rather than by charging lower prices. This is supported by the fact that margins on retail loan products remained around twice as high as in the euro area over the entire period (Chart 3).

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<sup>7</sup> In the early 2000s, HUF-denominated state-subsidised housing loans were the major type of credit granted to households. The interest rate on housing loans and banks’ interest margin were not set by market mechanisms but rather by the rate of subsidy.

Chart 3  
Interest premiums on typical loans



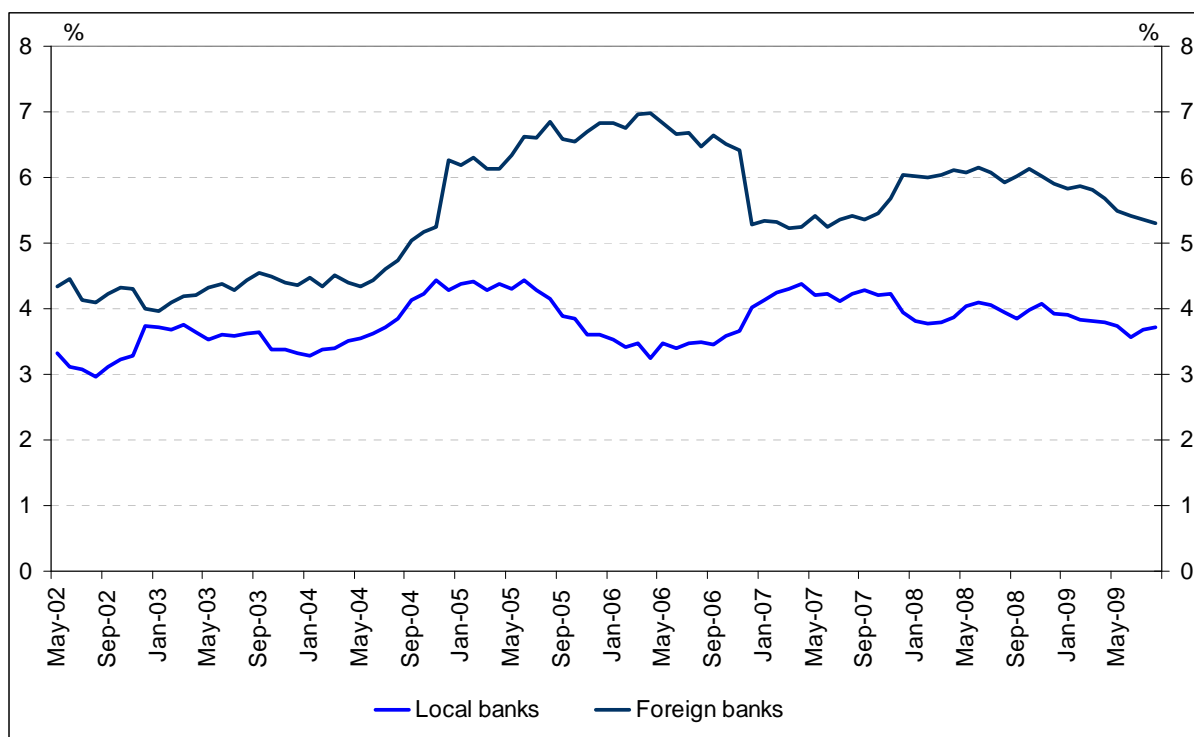
Note: We deducted the three-month CHF Libor from the APR of domestic retail mortgage loans and deducted the three-month Euribor from euro area housing loan interest rates.

Source: MNB.

Therefore, a different set of instruments emerged in customer acquisition. In the first phase of competition, priority was given to the expansion of sales channels – banks’ marketing activity, networks and employee numbers thus grew substantially, as did the costs of this rapid expansion. In this so-called “*cost-based competition*”, there was a great discrepancy between local and foreign banks. Local banks had a competitive edge in the market compared to foreign banks, stemming from strong retail customer relationships, large branch networks and the establishment of mortgage banks. Mortgage banks refinanced banks within their group or other foreign banks. Thanks to this competitive edge, local banks did not take part in the rush to open branches and continued operating with the same number of employees and network units. Moreover, although marketing costs also increased substantially within this group, they nevertheless represented a much smaller proportion of local banks’ operating costs in comparison to foreign banks (Chart 4). Despite less active cost-based competition, the initial strong market position of local banks allowed them to sustain their leading role in the competition of state-subsidised HUF loans.

Chart 4

Ratio of marketing costs to total operating costs



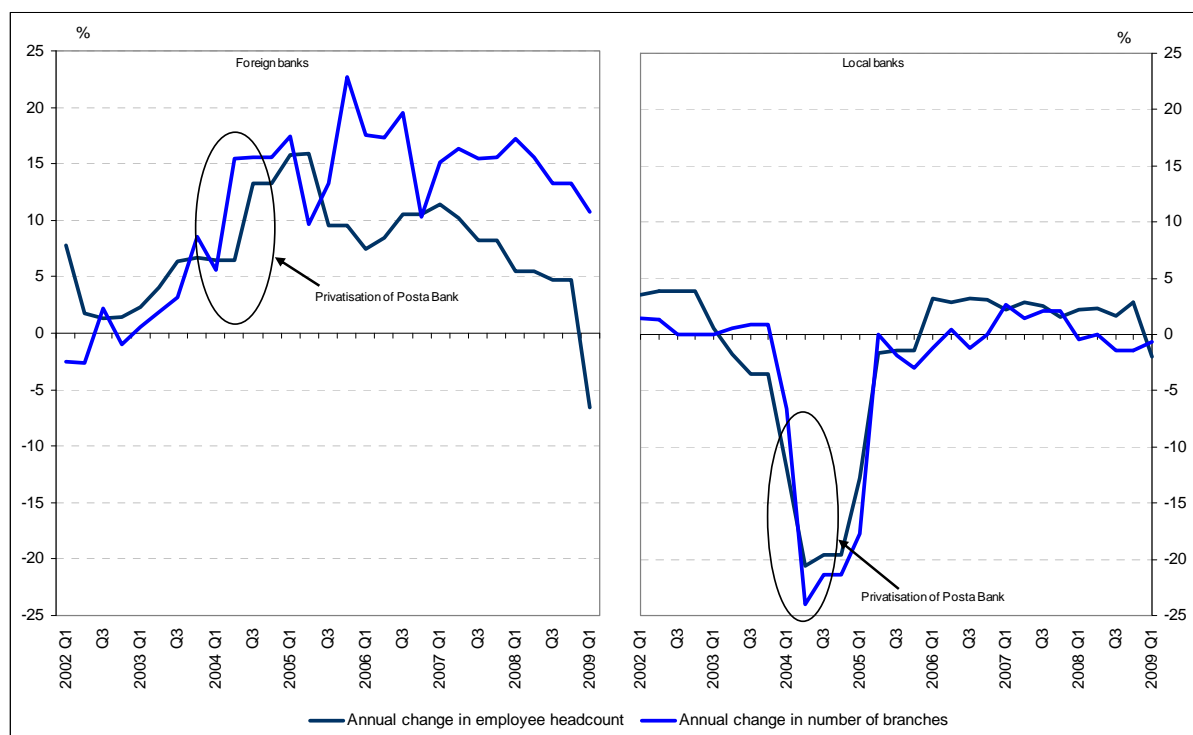
Source: MNB.

By contrast, foreign banks launched strong cost-based competition. Marketing costs rose sharply and the number of branches and ATMs, as well as the number of employees, increased. As competition intensified, foreign banks acquired a substantial market share in the mortgage loan segment but did not succeed in dethroning local banks from their market-leading position<sup>8</sup> (Chart 5).

<sup>8</sup> By increasing the number of branches, foreign banks obviously also strived to break into the deposit market in addition to selling loan products. Although the costs of entry were highest in this area, competition was also lowest and, therefore, interest margins were highest (Móré and Nagy (2004)).

Chart 5

Annual change in numbers of employees and branches



Source: MNB.

State subsidies of HUF-denominated housing loans were significantly cut back in 2003. Competition for retail customers thus took a new turn due to the drop in sales of HUF-denominated mortgage loan constructions. “*Risk-based competition*” emerged in parallel to “*cost-based competition*” and triggered a shift towards increasingly risky products and customers. The first sign of this was the appearance of FX-denominated loans.<sup>9</sup>

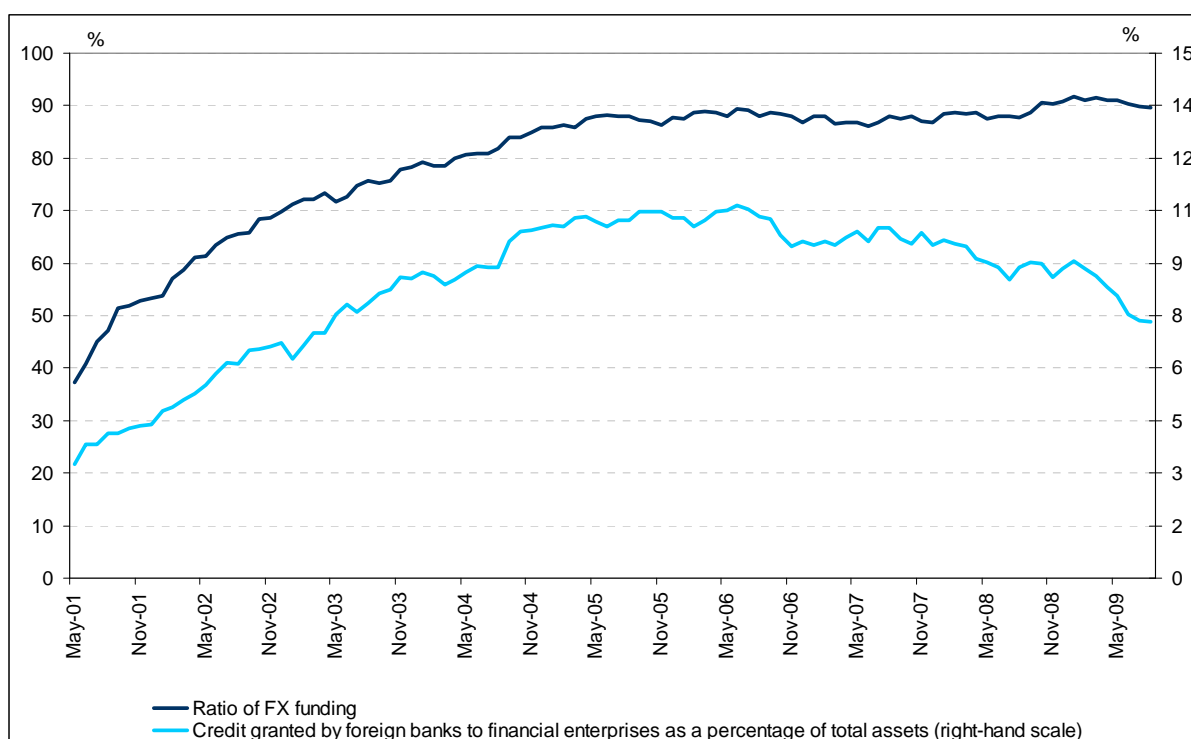
FX-denominated loans first appeared in 2001 in relation to financial enterprises, mainly in the field of vehicle purchase financing. The expansion of FX-denominated vehicle loans surfaced primarily among the financial enterprises of foreign-owned banks. Between 2001 and 2004, the ratio of financial enterprise financing compared to the balance sheet totals of owner banks tripled. By 2005, the ratio had reached 11% of the balance sheet totals of foreign banks and, despite the substantial rearrangement of banks’ balance sheets as a result of the retail credit boom, it remained at around 8% prior to the crisis (Chart 6).

<sup>9</sup> For further reasons behind FX-denominated lending in greater detail, see Bethlendi et al (2005).



Chart 6

**Developments in credit granted by foreign banks to financial enterprises**



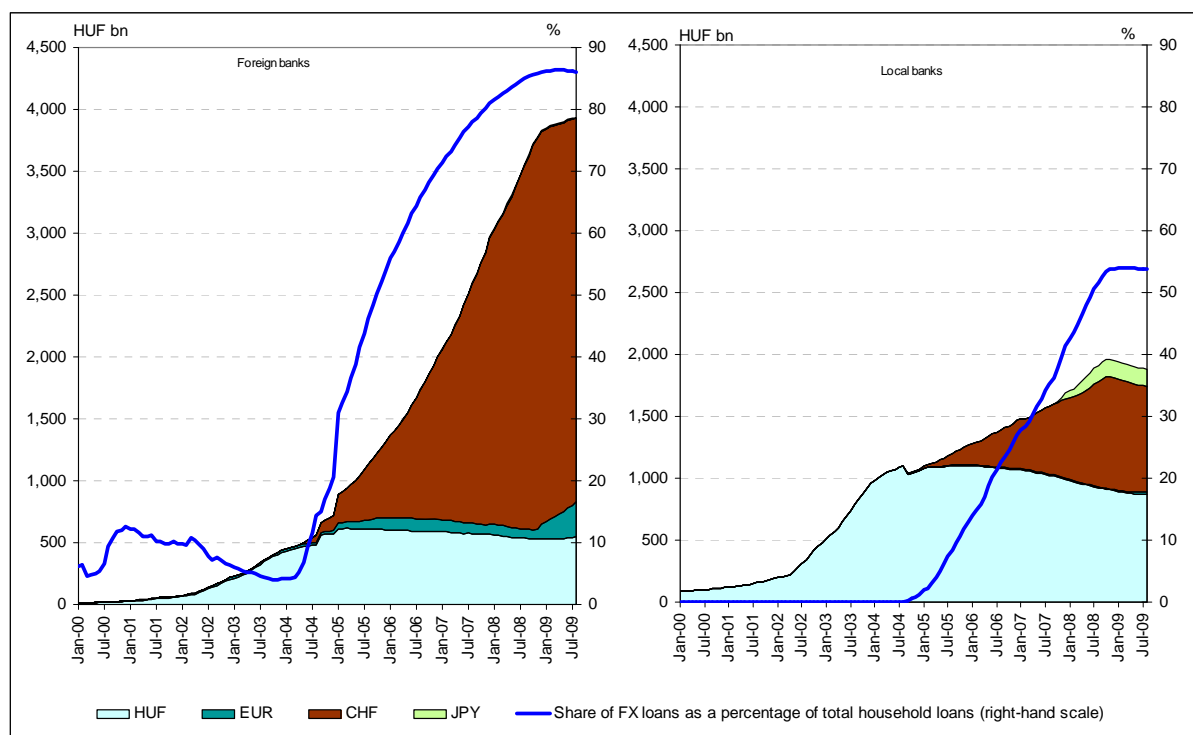
Note: The chart displays loans to financial enterprises as a percentage of banks' total assets and the denomination structure of this credit.

Source: MNB.

The popularity of FX lending did not remain confined to vehicle financing. With the drop in state-subsidised HUF-denominated housing loans, FX, particularly CHF-denominated financing, became predominant among mortgage – initially housing, then home equity – loans from the beginning of 2004. Until the onset of the crisis, such loans remained the main credit product of banks.

In the case of FX-denominated vehicle and mortgage loans, foreign banks were leaders, while local banks were followers. In retail mortgage lending, the ratio of FX loans began to increase as early as the beginning of 2004 among foreign banks, while this process only started at the beginning of 2005 among local banks (Chart 7).

Chart 7  
**Currency structure of household mortgage loans**



Source: MNB.

As one of the final chapters of risk-based competition, yen-denominated loans appeared as a new product in the shadow of the crisis. While foreign banks were unequivocally the ones to push CHF-denominated collateralised loans, in the case of yen-denominated loans, the “initiative” was local. Yen-denominated loans quickly became popular among households that were completely unaware of exchange rate risks, as these products were accessible with even lower instalments than CHF-denominated loans.

Besides the spread of FX lending, numerous other factors reflected the intensification of risk-based competition. Banks constantly eased their credit conditions and standards (MNB survey on banks’ lending practices 2004–2008). The formerly conservative collateral requirements were continually loosened and banks applied high loan-to-value (LTV) ratios for an increasing proportion of loans.<sup>10</sup> Whereas at the end of 2004 the banking system’s average LTV ratio for housing loans was only 50%, by the end of 2008 this ratio was approaching 70%. Furthermore, several banks registered significantly higher payment-to-income (PTI) ratios (between 2004 and 2008, households’ debt service burden to their income increased from 8% to 13%). Finally, in 2007–2008, banks relied increasingly on agents – a significantly more efficient sales channel compared to branches. More than 50% of the mortgage loans granted in 2007 were sold through agents. Although agents significantly improved access to bank products, loans granted via their intermediation were characterised by default rates two to three times higher than those sold in branches.<sup>11</sup>

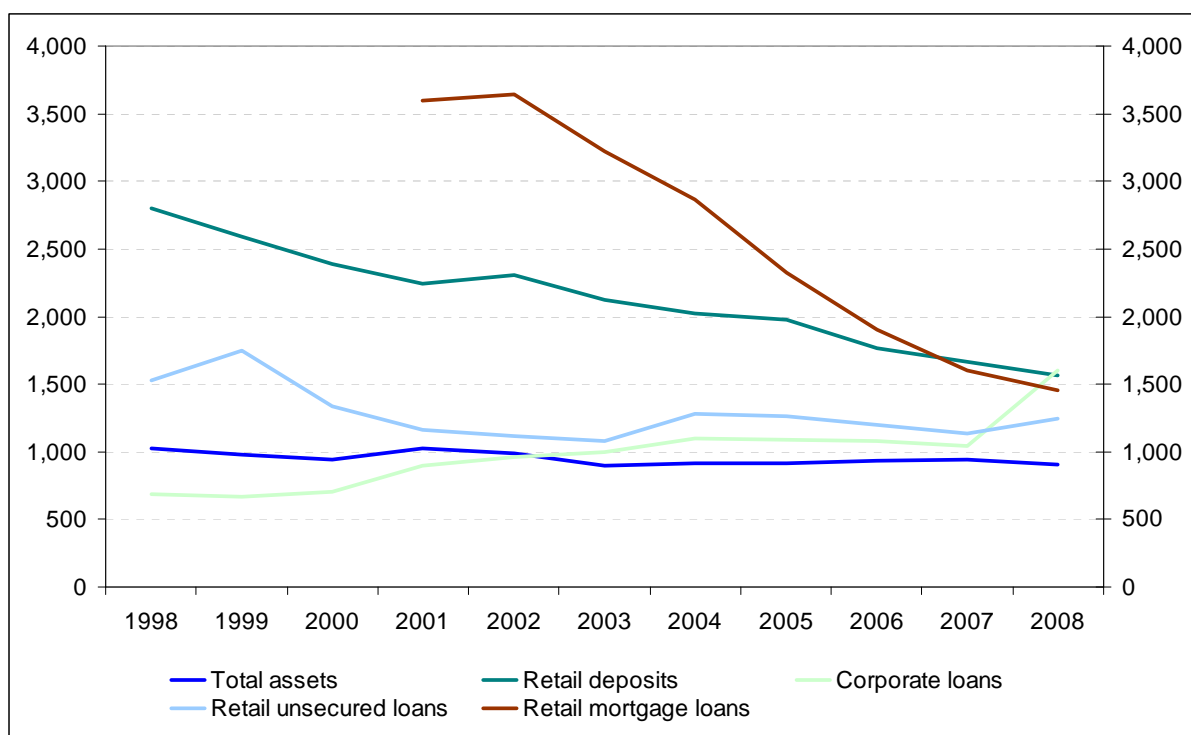
<sup>10</sup> Magyar Nemzeti Bank, *Report on Financial Stability*, April 2007, April 2008 and October 2008.

<sup>11</sup> Magyar Nemzeti Bank, *Report on Financial Stability*, October 2008.

The *cost- and risk-based competition* referred to above transformed the structure of the market. The substantial advantage of local banks in the retail segment eroded, while foreign banks gained ground. Between 1999 and 2009, concentration among retail products fell most rapidly in the case of retail deposits and mortgage loans. In 2008, the HHI (Herfindahl-Hirschman Index) level of mortgage loans was only barely higher than that of the corporate credit market (Chart 8). Nevertheless, local banks succeeded in reinforcing their leading market position, as their market share still surpassed 30% in retail products.

Chart 8

**Herfindahl-Hirschman Index for different segments of the Hungarian banking system**



Note: In the case of collateralised retail loans, we consider the 2001 emergence of the market as the starting point.

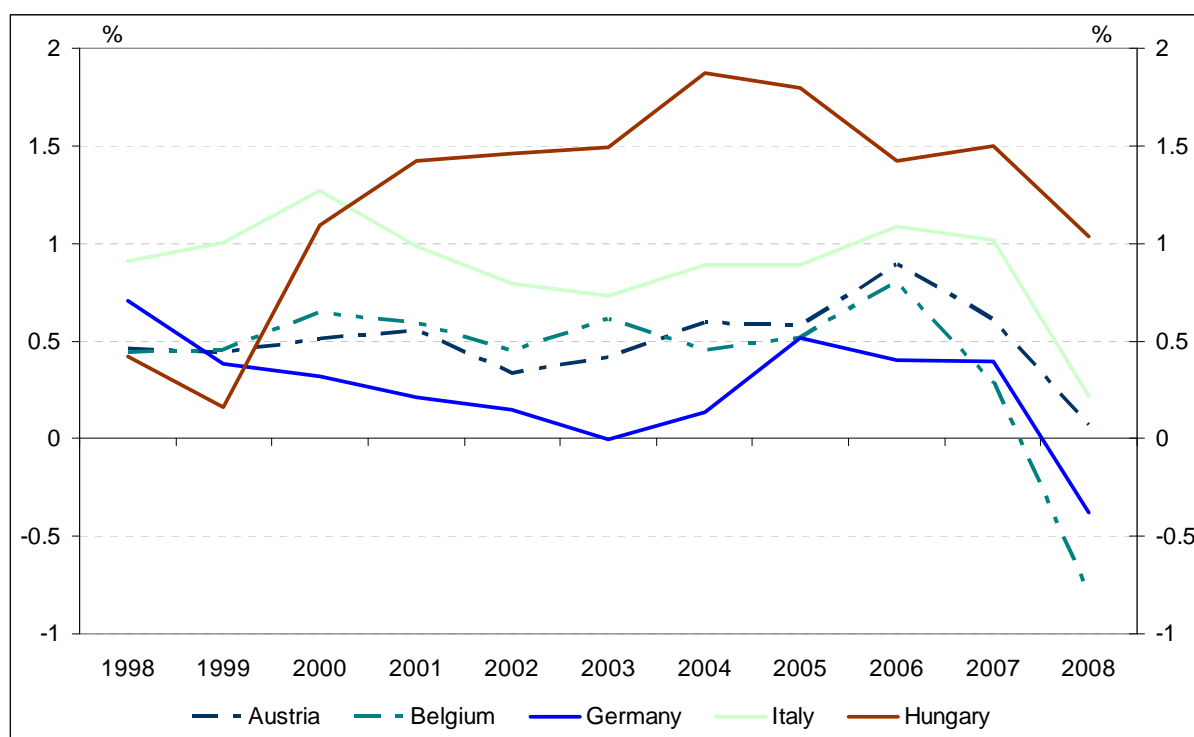
Source: MNB.

**I.3. The consequences of high margins: high profitability and strong capital position**

As a consequence of non-price-based competition for customers and the expansion of loans stemming from the growth of the economy, the profitability of the Hungarian banking system was considered outstandingly high over the past 10 years, not only in the region, but in the whole of Europe. Foreign banks not only benefited from the high profitability but also contributed to the economic boom and to even higher profitability. The profitability of the Hungarian banking system surpassed the performance of that of the parent bank countries by 50% and, in many cases, by as much as 100% (Chart 9).

Chart 9

## ROA of foreign banks operating in Hungary and that of parent bank countries

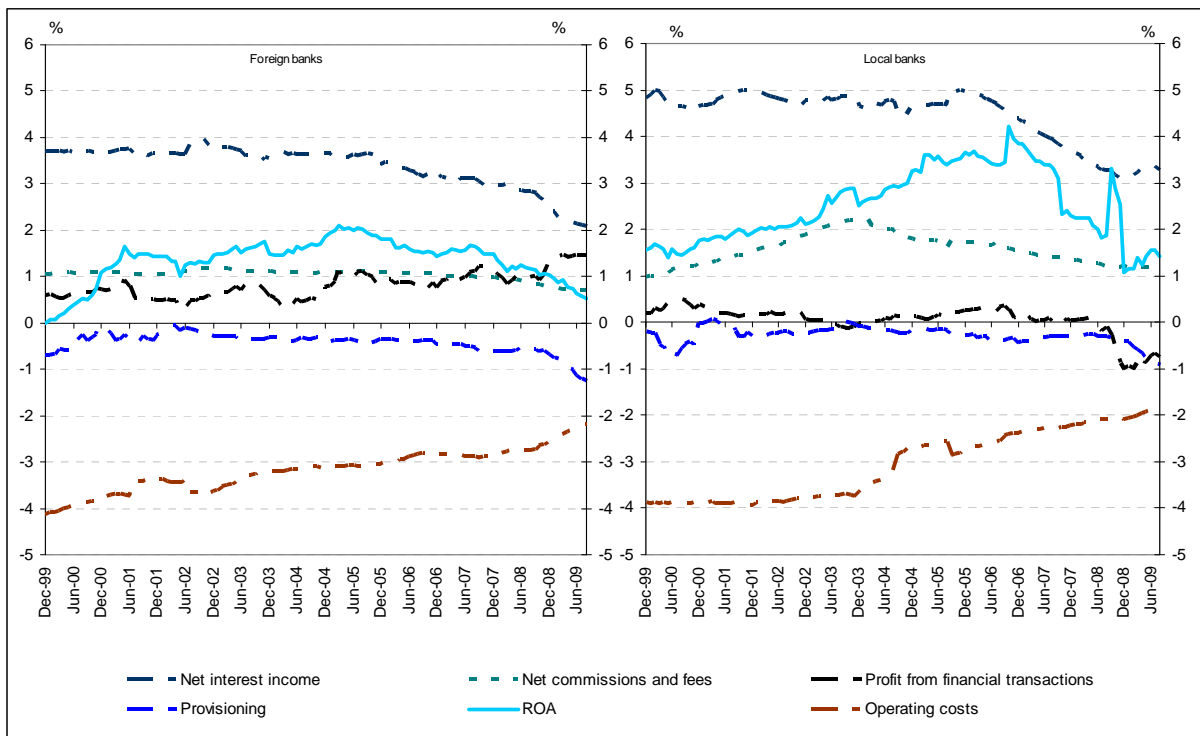


Sources: OECD, MNB.

The profitability of the Hungarian and western European banking systems differs not only in terms of scale, but also in terms of composition. Within the western European banking system, the main source of revenue is non-interest income. In contrast, the main source of revenue in the Hungarian banking system is the high interest income stemming from high interest margins. The efficiency of the banking system and the result of financial operations are lower, while the portfolio risk and the resulting credit losses are higher than in euro area banking groups.

In the course of the past 10 years, the return on equity (ROE) and return on assets (ROA) of local banks were almost twice as high as those of foreign banks (Chart 10). The ROE and ROA indicators – reflecting the profitability trend of the banking system – peaked at the end of 2004 in the case of foreign banks and have gradually dropped since then. In the case of local banks, profitability only peaked at the end of 2005 at a very high level, and plummeted sharply thereafter. Local banks – whose profit advantages were mainly based on the inherited, very broad retail customer base – consistently outperformed their foreign rivals from the end of the 1990s. Thanks to customers' low sensitivity to loan and deposit margins, the higher margins and fee income realised by the local banks maintained a significantly higher interest and commission income level than that of foreign banks. Expensive account management fees and payment charges also contributed to the higher commission and fee income. The income difference was only slightly mitigated by the fact that the profit realised by foreign banks on financial operations was higher all along than that of local banks due to their more active treasury and custodian activities.

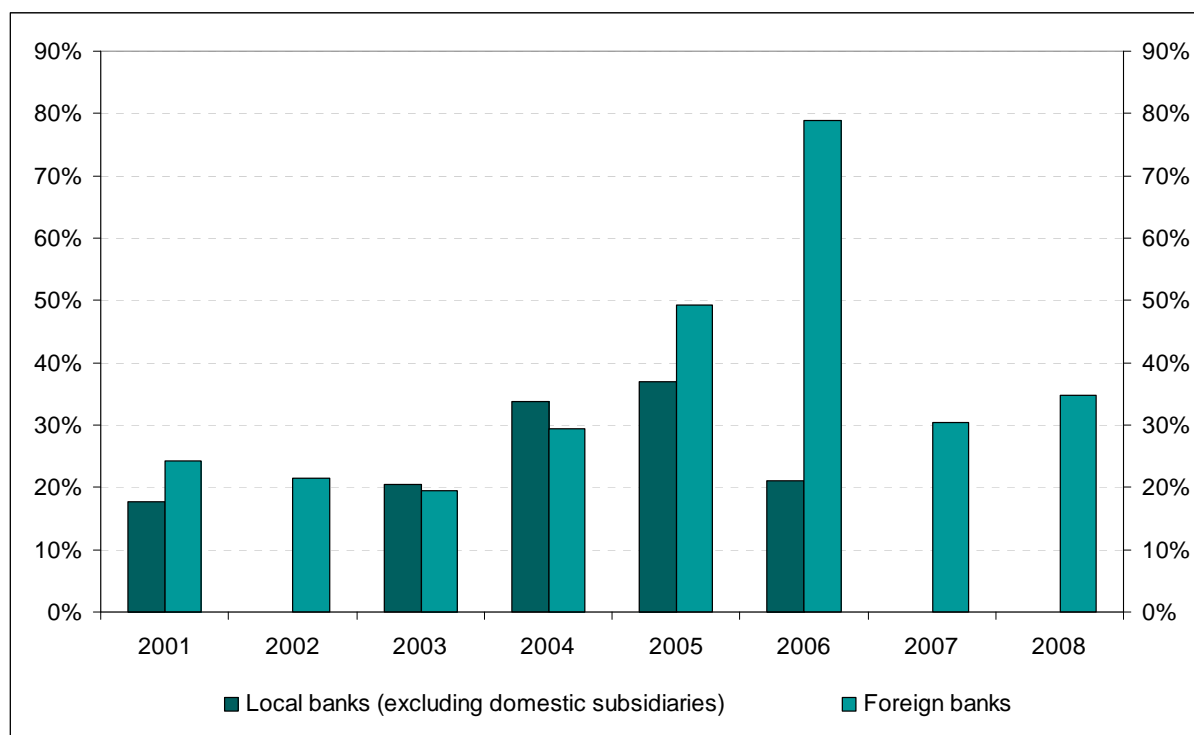
Chart 10  
**Relevant profit items to the total assets**



Source: MNB.

In terms of expenses, provisions at foreign and local banks were almost the same over the 10-year period. This is attributable to the fact that, although the portfolio quality of local banks was better, their coverage with provision was significantly higher than that of foreign-owned banks, ie they calculated a higher provision for a better quality portfolio. For example, in the case of household loans, the coverage with provision of local banks exceeded 40%, while the coverage of foreign banks was around 30% in the third quarter of 2009. However, a significant change took place in relation to operating expenses in the course of the past 10 years. While foreign banks' operating costs were higher than those of local banks until 2003, this situation reversed from 2004. The underlying reason can be attributed to the change in competitiveness. Since foreign banks had gained a greater market share, local banks were forced to spend increasing amounts on new technologies and the appropriate expertise ("negative spillover effect") in order to improve their competitive position. This largely contributed to the convergence of foreign and local banks' competitiveness. Later, though, the costs of foreign banks increased as local banks proved to be more competitive in selling retail products ("positive spillover effect") thanks to their strengthened market position and extensive branch network. Foreign banks' budgets were heavily burdened by the expansion of their networks (both branches and ATMs).

Chart 11  
Dividend payment rate



Source: MNB.

Of the profit realised in Hungary, 30–40% was repatriated by foreign banks, boosting the profits of parent banks. The other part of the profit – 60–70% (Chart 11) – was reinvested, which significantly contributed to subsidiary banks' sufficient capital adequacy and to sustaining their future growth and resulting high profits. The main source of local banks' high capital adequacy was also attributable to internal capital accumulation. In the period under review, the rate of reinvested profit was around 70–80%.

#### I.4. The price of sustaining high profitability: the emergence of liquidity and credit risks

The country's net foreign debt as a percentage of GDP quadrupled in the 10 years to 2008. Due to the overindebtedness of the public and private sectors, net external financial requirements were significant in every year. The majority of foreign funds flowed in through the financial intermediary system. From these foreign funds, the banking system primarily financed the loans taken out by the private sector and, to a lesser extent, the issuance of government securities. Government securities were financed for the most part by direct foreign purchases of assets.

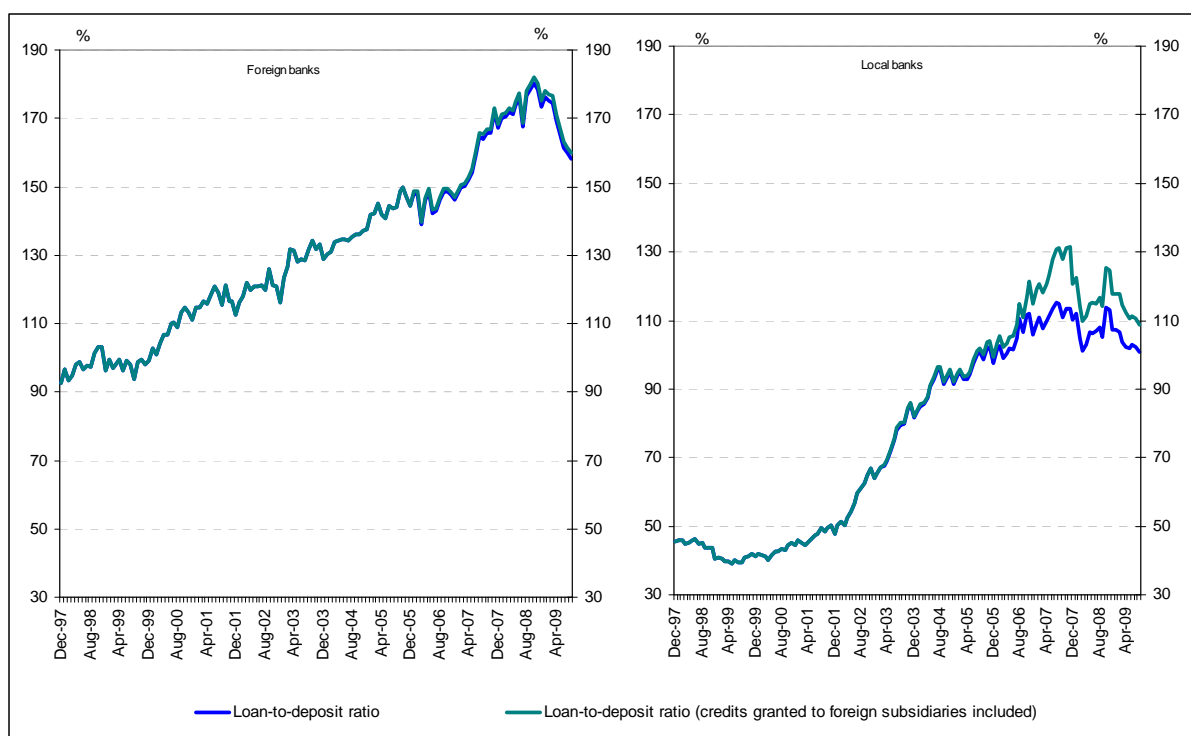
During this period, global money markets were characterised by ample liquidity and cheap, easily accessible funding. At the same time, returns realised on investments dropped substantially in the years preceding the crisis leading to a hunt for yield and an increased risk appetite. One form of this was the central and eastern European expansion of banks, financed partly through capital investments and partly by the active refinancing of local affiliates. All of this essentially means that, over recent years, the savings of European parent banks acquired from the capital markets of different regions around the world have financed Hungary's convergence and the rapid loan expansion entailed by strong non-price-based competition.

Increasing funding risks are clearly indicated by the fact that, while the bank loan portfolio of households nearly tripled between 2004 and 2008, their bank deposits increased by only slightly over 40% during the same period. The loan portfolio of the private sector doubled in the same period, while deposits lagged far behind. Consequently, the loan-to-deposit ratio of foreign banks within the banking system already exceeded 100% in 2000 and continued to rise sharply with the escalation of lending, peaking at 180% at the end of 2008 (Chart 12). A total of 60–70% of the funds involved came from parent banks, while 30–40% was raised on the capital markets. Due to their size and superior credit rating, parent banks have access to funds with better conditions; subsequently, many banking groups' funding is centralised.

Chart 12

**Loan-to-deposit ratio**

(Exchange rate adjusted – exchange rate as at 31 August 2009)

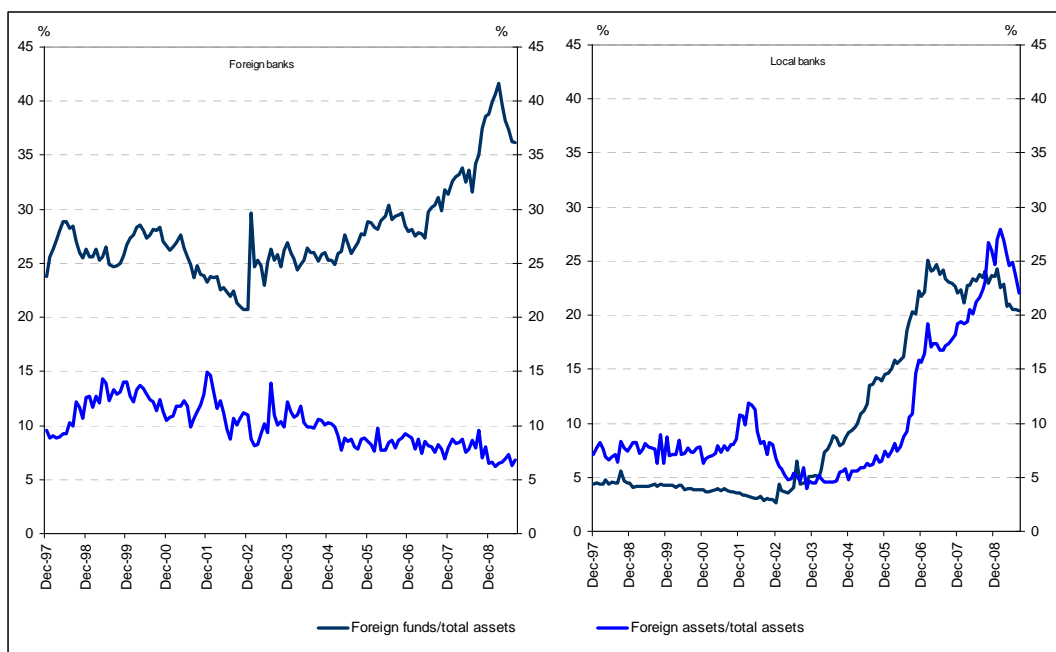


Source: MNB.

The loan-to-deposit ratio at local banks was still very low at the end of the 1990s, falling below 50%. A total of 54% of retail savings was concentrated in this group of local banks, enabling them to finance the expansion of corporate lending until 2004 from their existing stable retail deposits, and subsequently to expand their vehicle loans and retail mortgages from 2000 through financial enterprises. However, the deposit growth rate could not keep pace with the loan expansion rate. Furthermore, the largest local bank began its regional expansion in the early 2000s. Hence, from 2004, local banks were also forced to turn increasingly to international funding. At that point, the loan-to-deposit ratio (LDR) exceeded 100% and continued to increase, peaking at around 130% at the end of 2008. The LDR of local banks, exclusive of the funds provided for their foreign subsidiaries, only just surpassed 100%, even in 2008 (110% in December 2008).

Chart 13

**Ratio of foreign assets and liabilities to the balance sheet total**

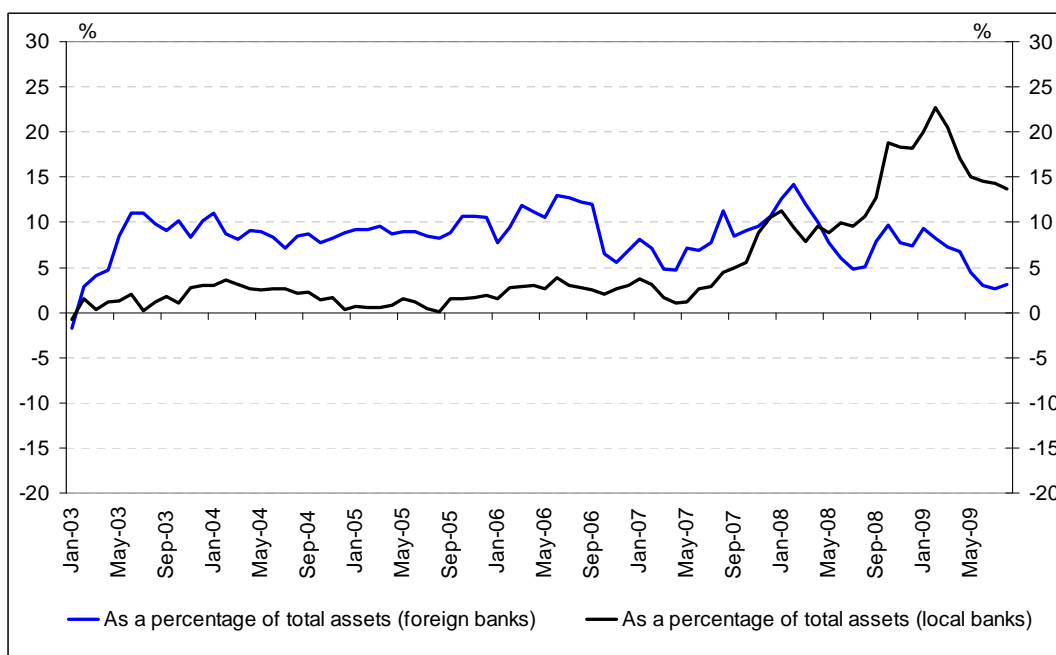


Source: MNB.

After accumulating huge amounts of FX-denominated assets (Chart 13), banks closed their open FX positions in the balance sheet with off-balance sheet swaps. Between 2003 and 2007, the ratio of FX swaps to the balance sheet total fluctuated between 5 and 10% at foreign banks, while for local banks, this ratio did not even reach 5%; until autumn 2007 they secured foreign currency not by utilising their HUF liquidity through FX swaps, but rather by employing cheap, longer-term international funds (Chart 14).

Chart 14

**Developments in FX swap portfolios as a percentage of the balance sheet total**

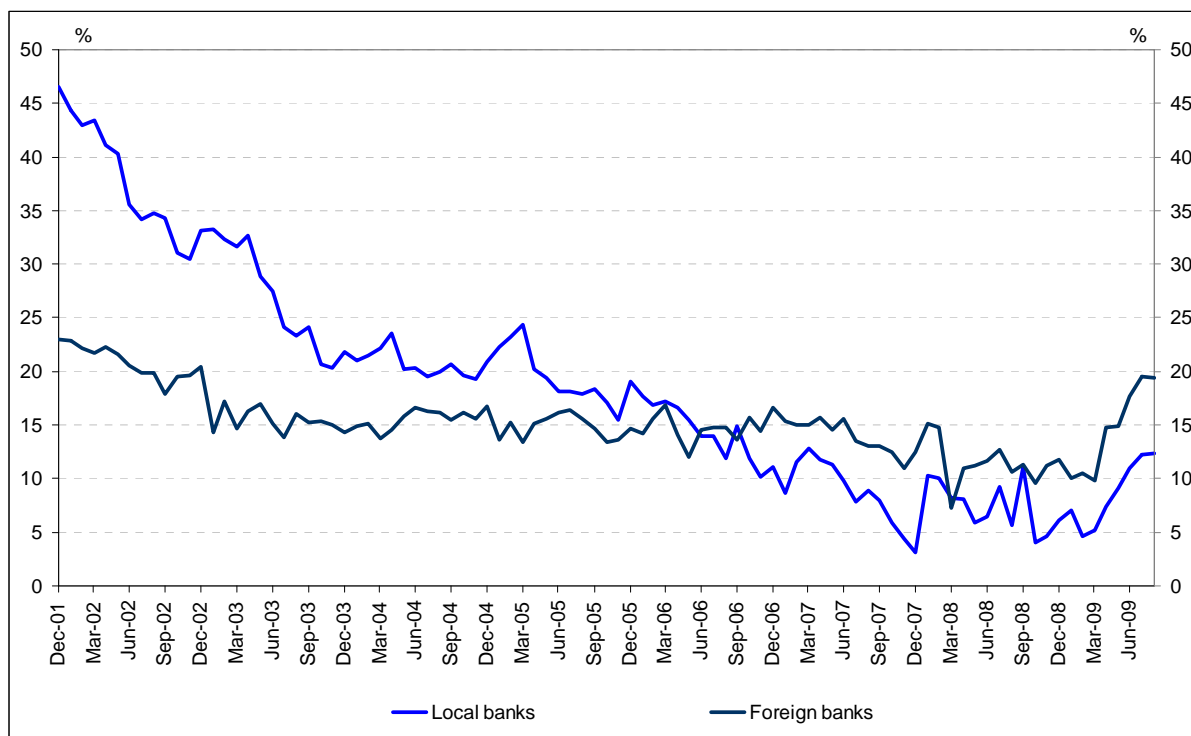


Source: MNB.



Finally, it was not only funding risks but also liquidity risks on the asset side that increased (Chart 15). As a result of the credit expansion, the volume of liquid assets continuously decreased within the domestic banking system. This was especially evident in the case of local banks, where the ratio of liquid assets to the balance sheet total dropped from 50% to 5% between 2001 and 2007.

Chart 15  
Ratio of liquid assets to total assets



Source: MNB.

*Liquidity risks* were already evident prior to the onset of the crisis in 2008. As a result of turbulence in the international money markets in August 2007, cheap, long-term maturity international funds gradually disappeared, and short-term money market swaps played an increasingly important role in the financing of FX-denominated long-term loans through the utilisation of liquid assets.

Non-price-based competition – with the objective of continuously expanding the market position – thus resulted in a strong increase in liquidity risks. As a consequence of an LDR considered high even by international standards, the banking system became increasingly reliant on international funds. International interbank funds are typically short-term and a less stable form of financing than retail deposits. All of this entails high renewal risk (“maturity mismatch”). Moreover, as far as maturity mismatch is concerned, heavy reliance on the FX swap market also poses a key risk factor. In the event of disruption in the international interbank market and the FX swap market, liquidity tensions may arise. Moreover, if a bank is unable to renew its FX swap deals, then the foreign currency should be purchased on the spot market, which can in turn lead to substantial exchange rate fluctuations and a widening in the on-balance sheet net open position (on-balance sheet “currency mismatch”).

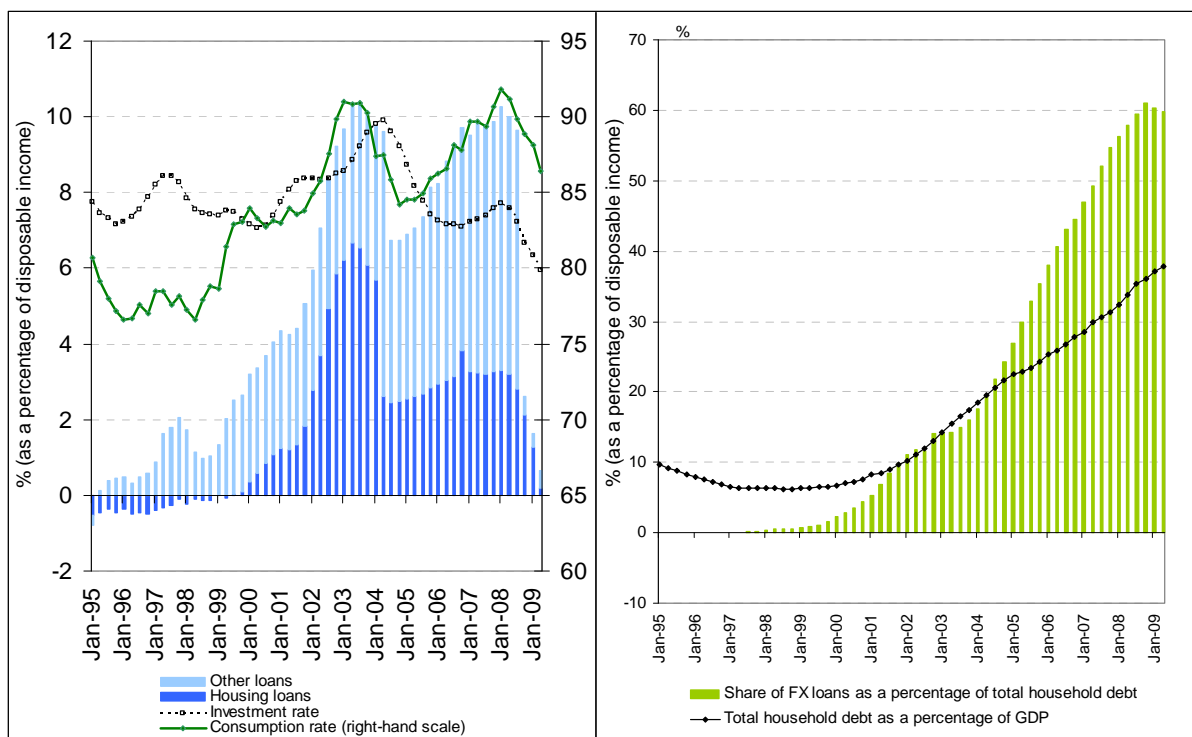
Although local banks’ LDR was substantially lower than that of foreign banks, their renewal risk was nevertheless higher. On the one hand, foreign banks had access to parent banks’ funding, which had a stabilising effect due to the owners’ long-term commitment. On the other hand, when the crisis unfolded, local banks had higher FX swap market exposures

than foreign banks. Finally, the small liquid assets portfolio also increased the liquidity risks of local banks.

Due to the risk-based competition of banks prior to the crisis, not only liquidity risks but also *substantial credit risks* accumulated, primarily on the retail market.

Chart 16

**The correlation between retail lending and the main real economic aggregates characterising households and the developments in retail loan volumes**



Source: MNB.

Over recent years, the fact that retail customers' borrowings in FX had lax credit conditions and that exchange rates seemed relatively stable (concealing the actual exchange rate risks) significantly contributed to the indebtedness of households ("retail capital mismatch"<sup>12</sup>). Excessive indebtedness is also reflected by the fact that the repayment burden of Hungarian households amounted to 13% of their disposable income, while the consumption rate was above 90% in 2008 (Chart 16). Both values exceeded the average for the euro area, while the ratio of retail loans to GDP (40%) remained well below average. The high indebtedness ensuing from a lower household income path and a lower household savings ratio clearly indicates an increasing credit risk.

Credit risk is also generated by passing on exchange rate risks (retail "currency mismatch"). While in 2004, the household sector did not have any net open exchange rate positions, by the end of 2008 the sector's GDP-proportionate net position reached 20%. As a result of this open position, a substantial exchange rate depreciation would considerably deteriorate the portfolio of commercial banks, quickly turning the exchange rate risk of customers into a credit risk of banks.

<sup>12</sup> IMF (2003): *The Balance Sheet Approach and its Applications at the Fund*.

Over the last decade, the credit risks of both foreign and local banks increased substantially. Nonetheless, the credit risk level of local banks can be regarded as relatively lower, as suggested by the lower rate of loans in default for over 90 days.<sup>13</sup>

## II. Adjustment during the crisis

As we have seen, the Hungarian banking system generated an outstandingly high profit level over the past 10 years. This high profitability was sustained at the cost of assuming both increasing credit risk necessitated by risk-based competition and increasing liquidity risk in order to fund such growth. These risks materialised as a consequence of the financial and subsequent economic crisis, and it has since become obvious that such high profitability cannot be sustained over the long term.

The period following the outbreak of the crisis can be split into two clearly distinct phases: liquidity risk emerged in the first phase (final quarter of 2008) to be followed by credit risk in the second phase (2009–10).

Although funding costs had been increasing in Hungary since August 2007 at the outbreak of the international financial crisis and it had become increasingly difficult to obtain long-term funding, the liquidity crisis only really began in Hungary in the post-Lehman era, ie following the events of October 2008. As a result of the dramatic narrowing of financing opportunities, the financial crisis threatened Hungary with a balance of payments crisis ensuing from the substantial public and private sector indebtedness. As a consequence of the country's significant need for international funding and the related extreme vulnerability, the exchange rate depreciated substantially as a result of the crisis, and key financial markets (mainly government securities, FX swap and interbank markets) dried up.

A number of steps were taken in order to manage the liquidity crisis. To protect itself against an exchange rate attack, the central bank raised its base rate by 300 basis points while also deciding to take on a number of measures aimed at expanding liquidity and stabilising the market: it operated the swap market, assumed the role of lender of last resort both in HUF and EUR, expanded the scope of acceptable collateral, announced HUF and FX credit tenders, cut its mandatory reserve rate and ensured that money markets remained operational. In order to ensure state financing and to replenish its diminished FX reserves, within three weeks the state reached an agreement with the International Monetary Fund (IMF) and with the European Union on a EUR 20 billion loan package. All of this contributed significantly to foreign investors' increased confidence.

The second wave of the crisis came in March 2009. During that period, it was not purely a country-specific but rather a region-specific problem that emerged, prompting foreign investors to quickly sell their assets. Due to the substantial contraction of regional economies and the high proportion of FX lending, the banking system's credit losses increased sharply, which in turn increased the threat of financial instability. Due to uncertainties surrounding the state of the banking systems, the currency exchange rate of several countries depreciated substantially, while in the Baltic countries the likelihood of abandoning the currency board and the pegged exchange rate system posed a real threat. This resulted not only in a loss of investor confidence, but also shook the confidence of households which manifested itself in the rapid, temporary outflow of deposits from the banking system. Confidence in central and eastern European countries was restored thanks to improving global economic prospects,

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<sup>13</sup> Local banks' regional expansion clearly increases lending risk. However, in this study, we focus mainly on the domestic operations of banks, as they show a different picture on a group level in connection with the foreign banks present in Hungary.

the successful foreign currency bond issuances of regional states and the better-than-expected shock absorbing capacity of the banking systems.

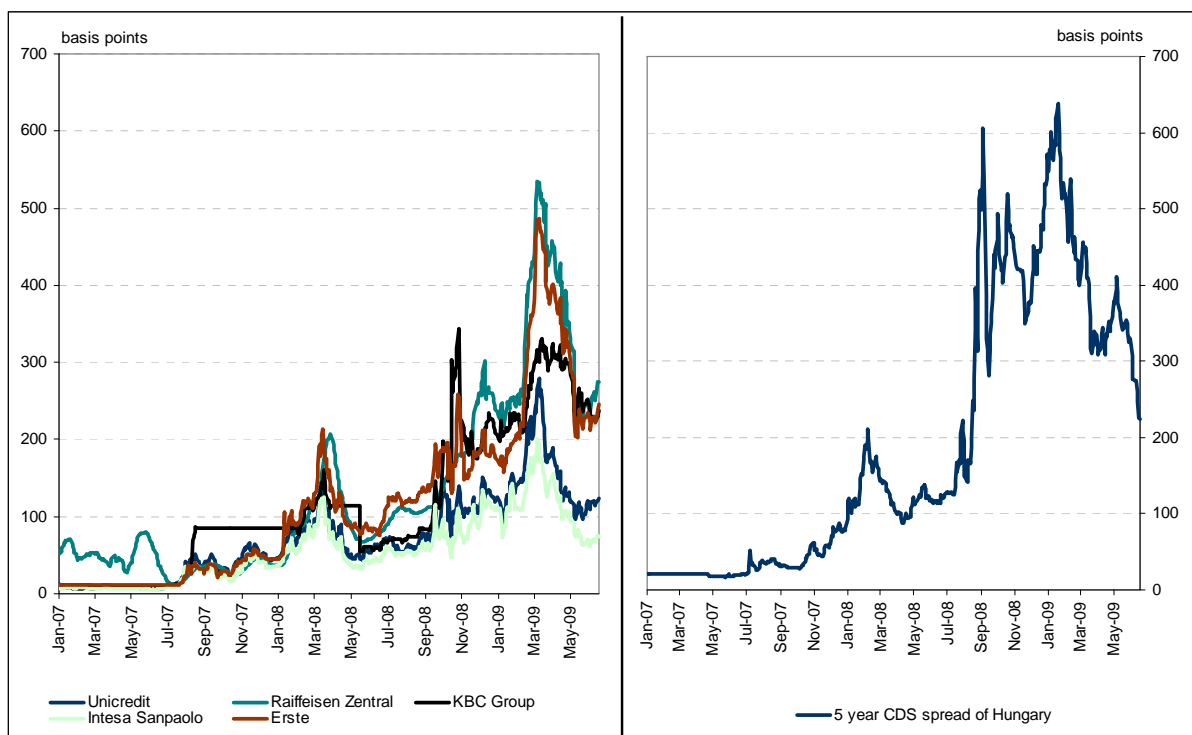
Between April and December 2009, confidence in the region and hence in Hungary, gradually improved, credit default swap (CDS) spreads decreased significantly, and money markets stabilised. The greatest challenge for the banking system was the continued balance sheet adjustment and the absorption of credit losses triggered by the deteriorating macroeconomic environment.

## II.1. Liquidity – during the crisis

In the period following the collapse of Lehman Brothers, nearly all investors fled from markets deemed to be risky. Due to the international money market turmoil and the high vulnerability stemming from the country's substantial external financing requirements, domestic CDS premia and government security yields increased significantly. Important domestic markets dried up (Chart 17). The interbank, FX, swap and government security markets experienced severe disruption. Besides state financing, the financing of the banking system was also threatened. The most important liquidity problem was how the Hungarian banking system, characterised by high FX claims, would secure adequate FX liquidity. It wasn't the price that mattered anymore, but rather the volume, due to the fact that interbank limits set very low – often at zero – price offers which had no significance.

Chart 17

### CDS premia on certain foreign banks with a prominent role in Hungary and Hungary's five-year CDS premium

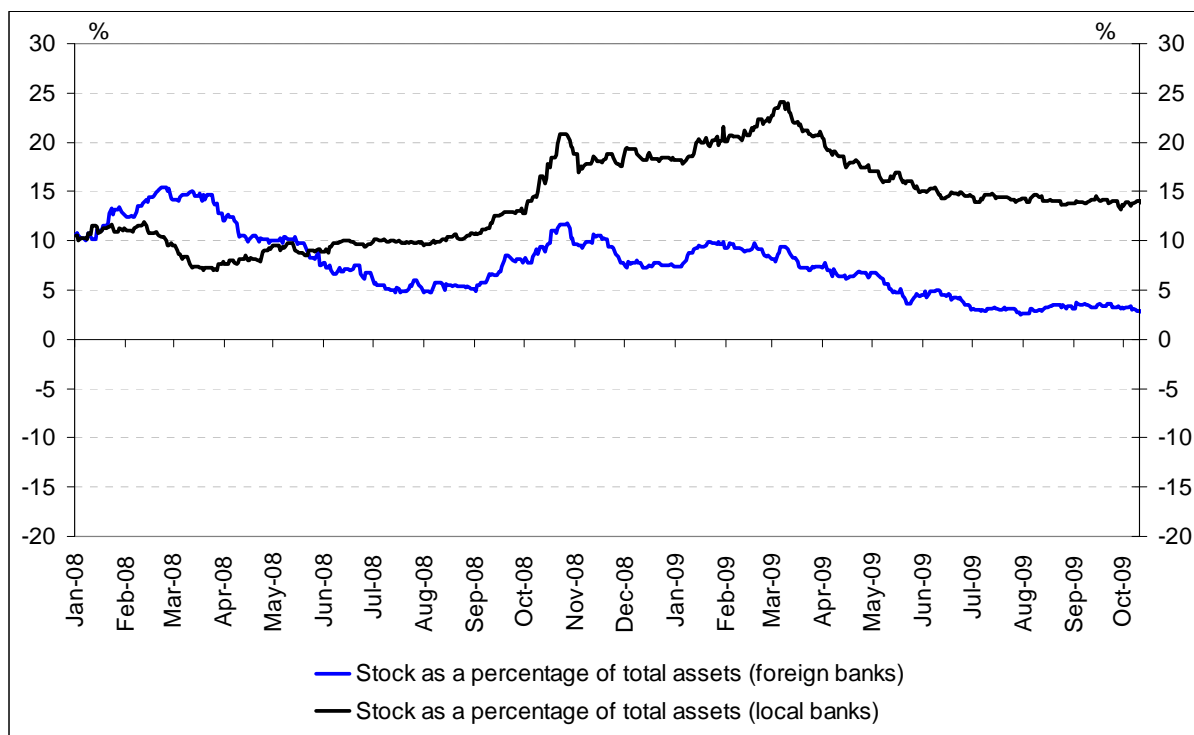


Sources: Bloomberg, Reuters, Thomson Datastream.

The international financial package, the liquidity provisioning measures of the central bank and the intervention of foreign parent banks played a key role in solving the problem. Without any parent banks to fall back on, local banks relied increasingly on central bank and state bailout packages. On the one hand, the rolling over of a substantial FX-swap stock became

difficult due to the drying up of the market and in turn due to narrowing partner limits (Chart 18). On the other hand, the rolling over of the increasing FX-swap stock required ever greater HUF liquidity, made almost impossible by the dwindling liquidity of the interbank market. Consequently, local banks were only able to obtain the required FX liquidity from the central bank. This was technically achieved by transforming the HUF liquidity provided by the central bank into FX liquidity through FX swaps which were also provided by the central bank.

Chart 18  
**Daily developments in the FX swap stock as a percentage of the balance sheet total**

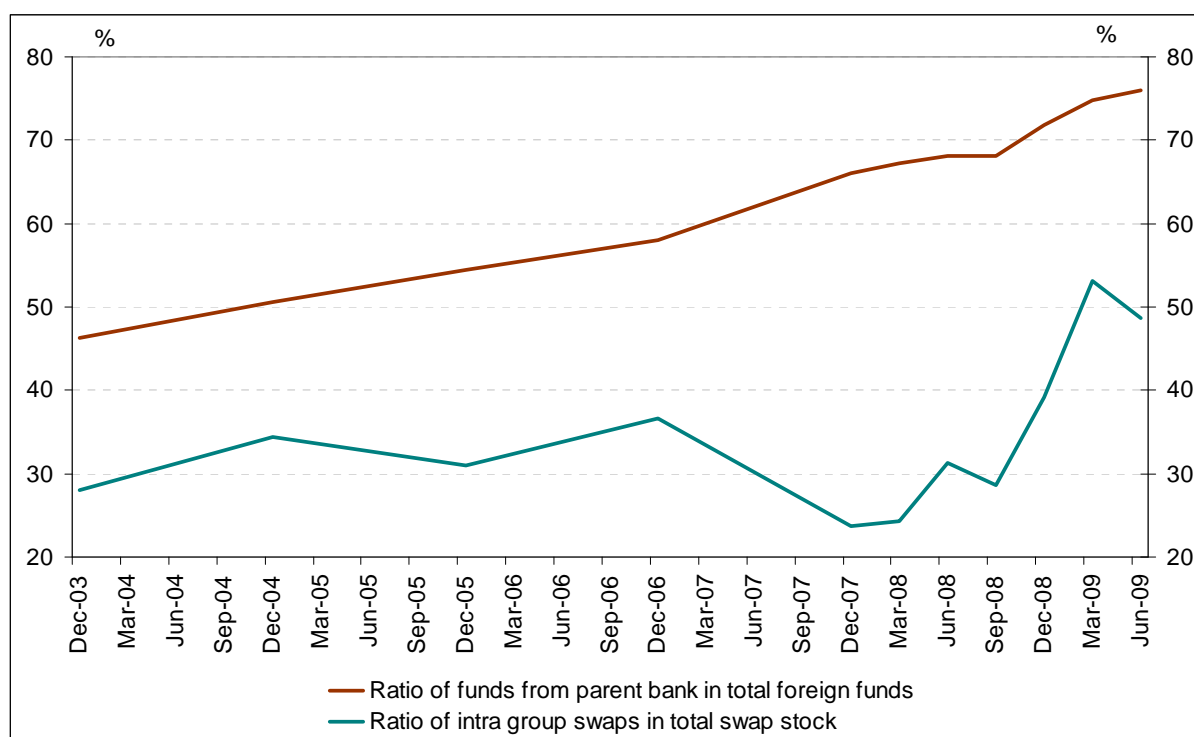


Source: MNB.

The FX liquidity position of foreign banks also deteriorated substantially, although parent banks assumed a key role in managing this problem (Chart 19). As markets for FX liquidity dried up, the subsidiaries of foreign banks operating in Hungary increasingly relied on their parent institutions for the necessary funding. In the final quarter of 2008, parent banks increased the funding of their subsidiaries by nearly EUR 3 billion in order to make them more resistant to the liquidity crisis. The role of parent banks also became more dominant on the FX swap market in ensuring FX liquidity.

Chart 19

## Developments in the ratio of parent bank funds



Source: MNB.

Rapid, large-scale action by the banks also contributed to the alleviation of the liquidity crisis. As a result of the financial crisis and the economic recession, the real economic sector scaled back its indebtedness and, consequently, the banking system's leverage, more precisely, the loan-to-deposit ratio, also decreased. The liquidity crisis, however, accelerated the scale and speed of deleveraging. Banks themselves recognised that the earlier credit expansion was unsustainable, and thus the era of risk-based competition came to an end. Initially, liquidity considerations – followed by a deterioration in portfolios – led to a drastic drop in risk appetite, which was reflected in a low willingness to lend. Decreasing the LDR and the reliance on foreign funds and FX swaps became a priority, which curbed the lending appetite of banks, making the operation of the banking system procyclical. Although the number of new household loans also dropped significantly, it was primarily in corporate lending where the adjustment was most apparent. On the one hand, as corporate loans have shorter terms, the adjustment may be initially reflected in the loan segment with shorter maturities. On the other hand, corporate loans have lower profit margins than household loans. Finally, compared to retail mortgage loans, corporate loans have a higher risk weighting and therefore represent a greater burden on capital.

As part of their adjustment strategy, market competition switched over from the asset side to the liability side. From the end of 2008, all major Hungarian banks began aggressive FX and HUF deposit-taking campaigns. As a result of fiercer deposit market competition, the banking system increased the propensity to save but at the same time drew a large amount of funds away from other forms of saving, primarily investment fund and cash-type savings instruments. Moreover, the state refinanced maturing HUF government securities (primarily from the IMF loan) in the first half of 2009. The liquidity released (investments in HUF government bonds) also flowed into the banking system in the form of deposits. All in all, both the asset and liability sides contributed to a decreasing LDR, with the deposit side nevertheless playing a more prominent role.

Regarding the pace and composition of the balance sheet adjustment, there are strong differences between the two banking groups. Banks in foreign ownership primarily decreased their activity on the loan side in the area of corporate lending. Competition for retail deposits contributed to an even larger extent to improving the LDR than loan side adjustment. As a consequence of competition, foreign banks increased their share of household deposits and thus the market share of local banks fell further.

The adjustment process of local banks differed from that of their foreign counterparts. Thanks to much lower initial levels, the LDR of local banks decreased less in absolute value and the structure of the decrease also differed. The adjustment for this group was mostly achieved through the inflow of deposits – mainly corporate and other funds (primarily originating from money market funds). In the case of local banks, the corporate loan portfolio did not decrease, while the household loan portfolio decreased only to a slight extent.

Parallel to the fall in the LDR, the reliance of the Hungarian banking system on foreign funding gradually declined in 2009. In the case of foreign banks, the volume of foreign funds decreased, while the rate of parent bank funding increased. Without parent banks to rely on, local banks replaced renewable foreign funds with state loans.

Adjustment to the liquidity crisis did not only lead to a lower LDR. As the adjustment primarily affected FX-based products both on the loan and deposit sides, the on-balance sheet open FX position of banks, and consequently their reliance on the swap market, also decreased. The fall in the swap stock was most apparent at local banks. By the end of 2009 – in large part thanks to the successful intervention by the central bank – the Hungarian swap market had stabilised; therefore, in parallel with the easing of liquidity tensions, interoperability between currencies also improved gradually.

Both foreign and local banks accumulated sufficient liquidity reserves to buffer themselves against possible future shocks. The ratio of liquid assets to the balance sheet total had increased by over 10% by the end of 2008.

From both a macroeconomic and financial stability perspective, it was essential to reduce liquidity and financing risks. The fact that banks adjusted excessively to liquidity risks presented a risk in itself. When liquidity risks materialised, cooperation between the government, the central bank and parent banks restrained an excessively rapid adjustment, thereby making it possible to avoid and mitigate financial acceleration and preventing the more than justified deepening of the recession.

## **II.2. Solvency in the spotlight**

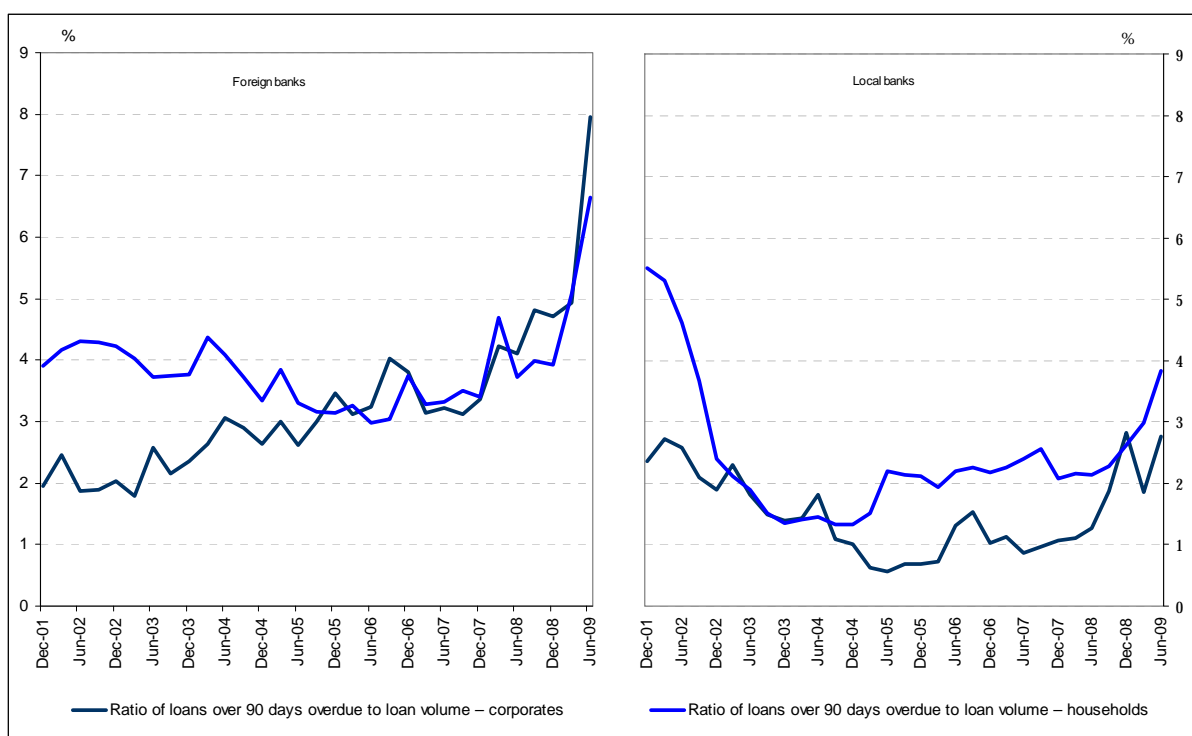
By the beginning of 2009, liquidity tensions in the global financial system seemed to ease, while the adjustment process led to a deep global economic recession. Due to its high trade integration, Hungary “imported” the recession affecting developed countries, but the rapid, forced adjustment referred to in the previous section led to a more severe economic contraction than in other countries, due to the decreased leverage of all economic agents.

In this radically changed financial and macroeconomic environment, many previously creditworthy firms suddenly found themselves cut off from funding and, furthermore, the narrowing of their main outlet markets led to a fall in demand for their products. The corporate loan portfolio thus began to deteriorate substantially for both banking groups. The extent of this deterioration in a relative sense was similar for both foreign-owned and local banks, but its level differed greatly. While for local banks, the ratio of corporate loans over 90 days overdue was around 3%, this figure stood at almost 8% at the end of H1 2009 for foreign banks.

The household loan portfolio also began deteriorating rapidly in 2009. The proportion of non-performing or overdue loans first increased in March 2009. Due to increased loan interest rates and substantial depreciation, households – with no natural hedging against exchange

rate risks – were less and less able to repay their loans (Chart 20). Following the stabilisation of the financial markets, the portfolio quality was undermined by the labour market adjustment of companies, taking the form of real wage cuts and increasing unemployment. The discrepancy between the portfolio deterioration of the two banking groups was significant. The non-performing loan ratio of local banks was 4%, much lower than the 7% of foreign banks in mid-2009. This is only partially explained by the fact that a large portion of the non-performing loans of the local banking group was sold to their own debt collection financial corporations.

Chart 20  
**Ratio of loans over 90 days overdue to loan volume  
among firms and households**



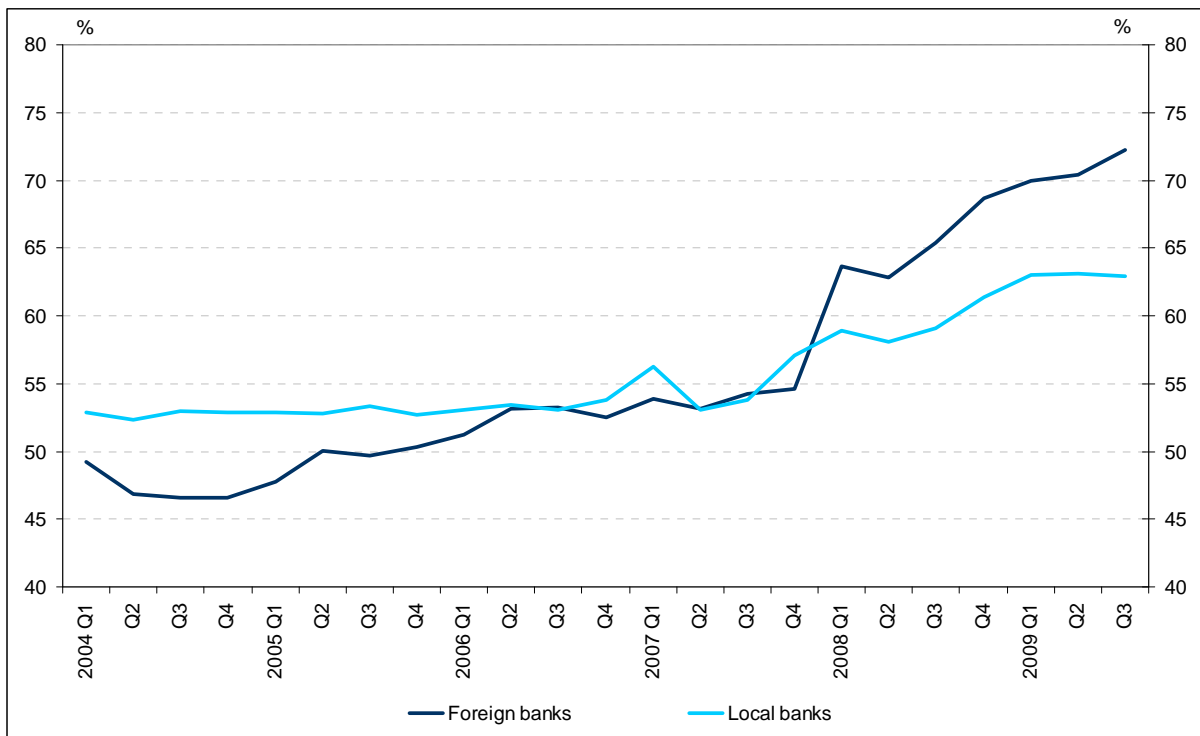
Source: MNB.

One of the reasons for the discrepancy is that the loan-to-value (LTV) of local banks' household loan portfolios is lower: in 2009, the average LTV of local banks was under 65%, while that of foreign banks exceeded 70% (Chart 21). The other factor is that local banks are less active in the home equity mortgage market: while local banks hold one third of the total market share for household real estate-backed loans, their share is less than 20% in the case of home equity mortgage loans.



Chart 21

**Developments in the average LTV of the household loan portfolio**

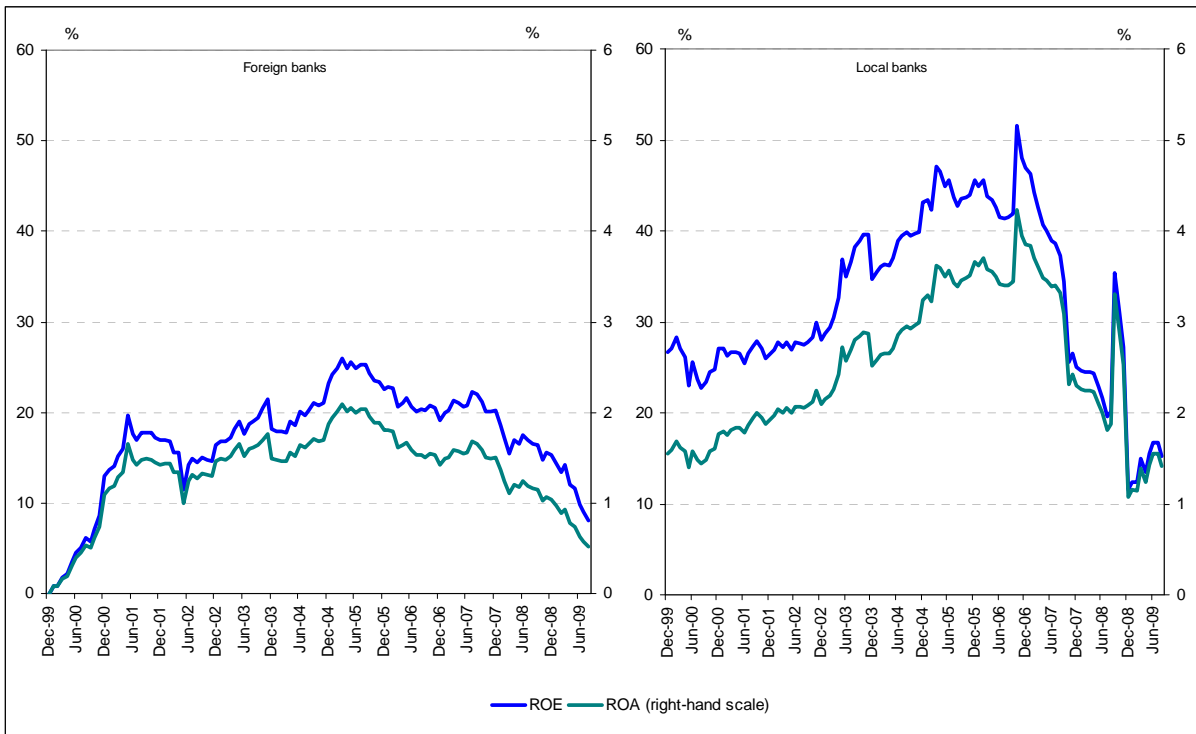


Source: MNB.

The crisis reduced the banking system’s profitability primarily through credit contraction, narrowing interest margins due to higher financing costs, and loan losses and lost interest revenues stemming from deteriorating loan portfolios. The crisis began to affect profitability in 2008, with the banking system performing worse than in the previous quarter due to increased provisions. Despite this, both local and foreign-owned financial institutions closed with remarkably good results in an international comparison. Overall, foreign subsidiaries significantly outperformed the banking systems of their parent banks’ countries, because while 2008 was a year of banks breaking even or experiencing losses in western Europe, in Hungary banks continued to post a significant profit. In several cases, foreign bank groups owed all of their profit to their subsidiaries in central and eastern Europe (Chart 22).

Chart 22

**Developments in profitability indicators (12-month rolling result)**



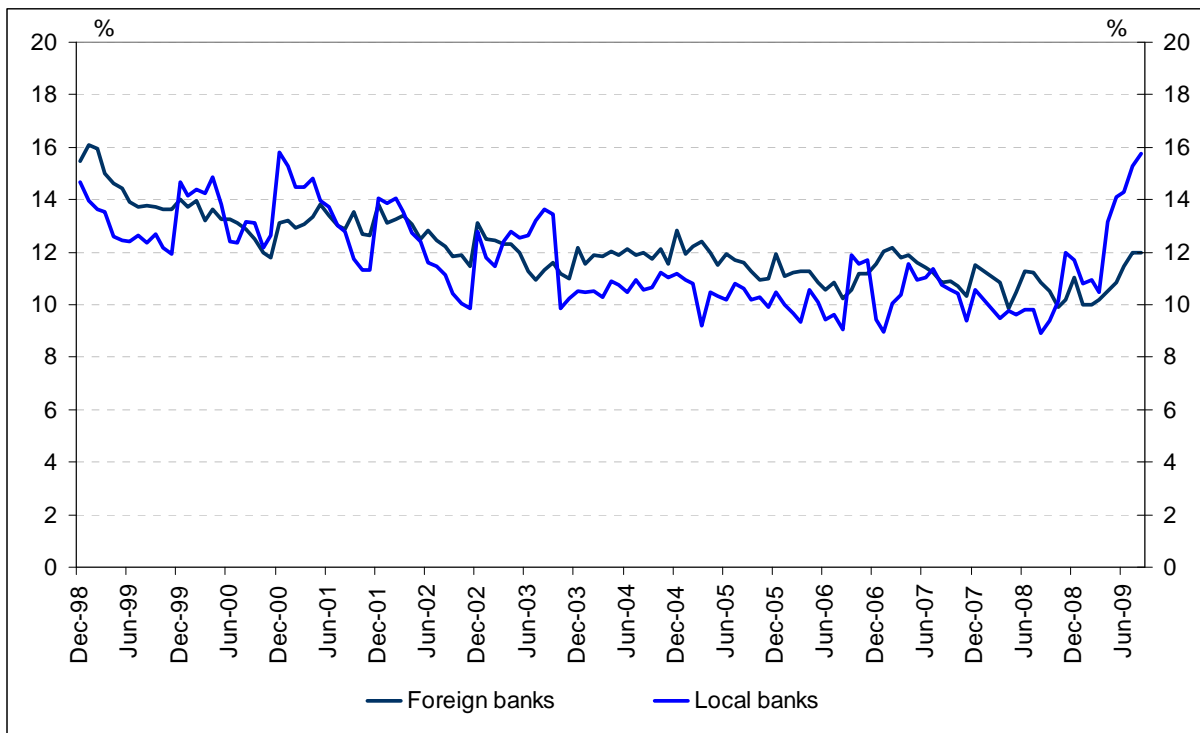
Note: The large shifts observed in the case of local banks (eg in 2006 or 2008) are due to one-off events.

Source: MNB.

Due to the losses expected as a result of the crisis, the capital position of institutions became a central issue everywhere, including in the Hungarian banking system. Not only was the capital adequacy indicator high overall in the Hungarian banking sector, but the partial reinvestment of 2008 profits and reduction in risk-weighted assets (RWA) due to the forced adjustment led to an improvement in this indicator during the crisis. This improvement primarily involved local banks, mainly due to their presence on the stock market and the higher capital adequacy expectations of investors (Chart 23).

Chart 23

**Developments in the capital adequacy ratio**



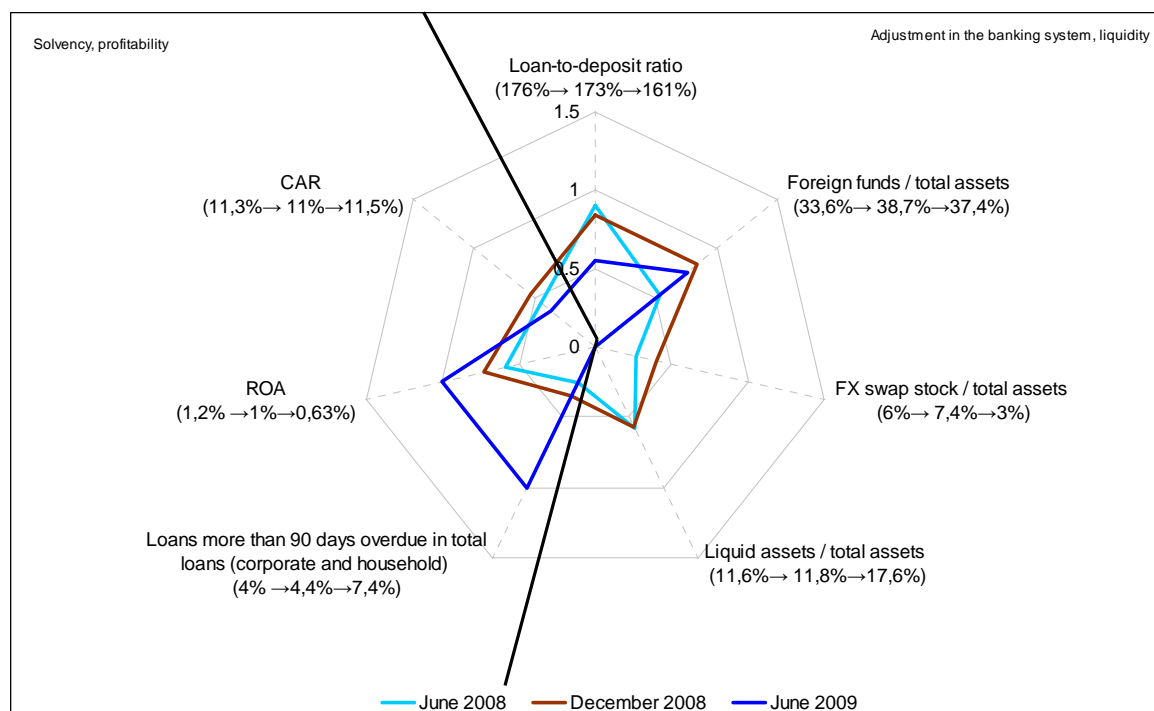
Source: MNB.

**Conclusions**

Prior to the 2008 crisis, Hungarian banks realised outstandingly high profits. The main source of bank income was rapid credit growth and wide interest margins. In addition to the strong demand for credit from households due to their positive income expectations, fast credit growth was also the result of strong loan supply pressure from banks. Competition between banks intensified and the increasing competition did not result in decreasing prices. Cost-based competition was reflected in higher advertising spending and network building, while risk-based competition was reflected in the sales of increasingly risky products to increasingly risky customers. Interest margins remained high for an extended period precisely because of the weak price-based competition.

All of this led to the accumulation of ever increasing risks, which came at the price of sustaining high profitability. Rapid credit growth significantly pushed up financing risks, reflected in an elevated loan-to-deposit ratio and a strong reliance on foreign funding and the FX swap market. At the same time, banks' credit risks also increased due to the high level of indebtedness of households and mounting exchange rate exposure. Both foreign and local banks assumed substantial liquidity and credit risks. When comparing foreign and local banks, however, the latter had higher liquidity risks, while the former had higher credit risks.

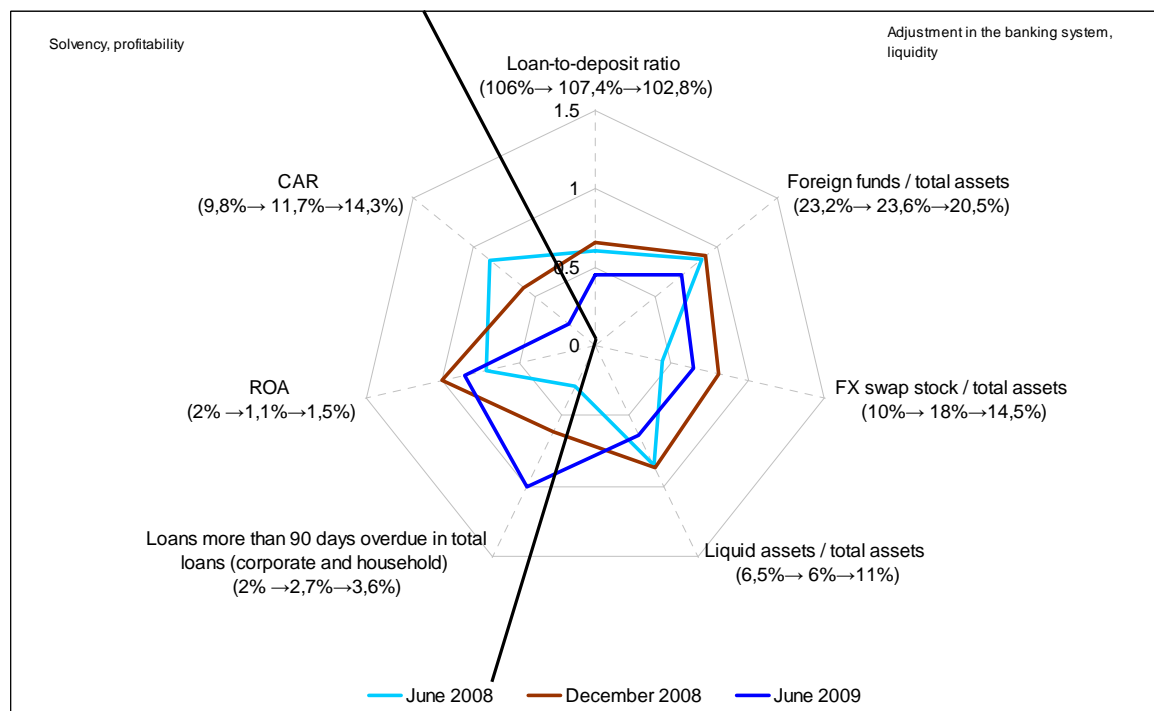
Chart 24  
Foreign banks' main risk indicators



Note: Values falling further from the centre of the web indicate an increase in risks.

Source: MNB.

Chart 25  
Local banks' main risk indicators



Note: Values falling further from the centre of the web indicate an increase in risks.

Source: MNB.

Following the onset of the crisis in Hungary in October 2008, these risks materialised. Due to the liquidity crisis, banks had to rely on substantial external assistance, albeit temporarily. In the case of local banks, this was provided by the central banks and the state, while in the case of foreign banks, it was provided by parent banks. The materialisation of financing risks forced all banks to adjust to the situation and restrain their activities. The sharp economic slump – exacerbated by the adjustment of the Hungarian private sector and the banking system – led to the materialisation of credit risks, while lending losses started growing – at a faster pace at foreign banks than at local banks (Charts 24 and 25).

The crisis showed that the higher the level of risk, the higher the real economic cost to the banking system to adjust to the shock. The 2008 financial crisis hit the Hungarian banking system, which had significant liquidity and credit risks, and Hungarian banks thus reacted with strong procyclical behaviour to the changed financial and macroeconomic environment. All of this, in conjunction with similarly procyclical fiscal and monetary policy, contributed to the Hungarian economy entering a deeper recession in 2009 than the rest of the region. In order to prevent or alleviate banks' procyclical behaviour, these risks must be reduced and new types of risks must be prevented from developing. The Hungarian banking system should not be allowed to once again become the source of risks which exacerbate the negative effects of an external shock.

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