# Retail credit expansion and external finance in Hungary: lessons from the recent past (1998–2007)

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## Introduction

***Rapid credit growth is a concern in many European countries.*** In recent years, credit to the private sector has been growing very rapidly from a very low initial level in a number of central, eastern and southeastern European countries. This credit expansion has been largely a result of increased mortgage loans to households, denominated in foreign currency in some countries. On the one hand, rapid credit growth can be justified by the very low initial level of intermediation and the convergence towards levels observed in developed EU countries. On the other, both empirical and theoretical arguments imply that too rapid credit growth, or a credit boom, can have serious macroeconomic consequences, especially if accompanied by sizeable external imbalances, which can also be observed in the region. Undoubtedly, the risk of having excess credit expansion mainly denominated in foreign currency has become a key issue for policy discussion.

***A credit boom can be identified in several countries.*** Using econometric techniques, a number of papers have found that current credit growth in the region cannot be fully justified by rapid economic growth, declining real interest rates, inflation or other fundamentals. According to a World Bank survey (2007), a credit boom was identified by Backé et al (2005) in Estonia, Latvia, Croatia and Bulgaria; by Boissay et al (2006) in Bulgaria, Latvia and to a lesser extent Lithuania, Estonia, Hungary and Croatia; by Kiss et al (2006) in Estonia and Latvia; and by Duenwald et al (2005) in Bulgaria and Romania.

***Credit booms can lead to asset price bubbles and growing external debt.*** Regarding the possible consequences, the IMF (2004), Schellekens et al (2007) and the World Bank (2007) found that credit booms often lead to large current account deficits and external debt. Investment and consumption booms led by a credit boom can boost imports, resulting in large current account deficits. At the same time, strong foreign capital inflows constitute an important source of domestic credit growth, which can, in turn, finance increasing current account deficits. Thus, credit booms and high external debt may reinforce each other's adverse effects. The consequences of a credit boom are clearly visible in Bulgaria, Romania, Croatia and the Baltic countries. Spectacular economic expansion in southeastern Europe and the Baltic states has come at the cost of asset price inflation[1] and a current account deficit of more than 10% of GDP.

***Credit growth in Hungary has had unique features.*** Hungary has shown dynamics similar to those of other countries in the region, as rapid credit growth has contributed to the development of a large current account deficit. However, there has been a major difference between Hungary and its neighbours: in Hungary, strong household investment and consumption alone have boosted the private sector's external financing needs, while the corporate sector has shown low investment activity. Another difference is that weak fiscal discipline has created large fiscal and current account deficits, as well as alarming debt dynamics in recent years. Finally, credit expansion has been mainly denominated in foreign

[1] Égert and Mihaljek (2007) suggested that Bulgaria, Estonia and Lithuania might experience potential overshooting in house prices.

currency in Hungary, which has caused serious mismatches in the economy. The main causes of foreign currency lending have been carry trades and intense competition in the credit market, as well as the high foreign ownership in the banking system. Rapid credit growth, coupled with the twin deficit problem, declining competitiveness and the mismatches in the economy, has posed risk ultimately for Hungary's endeavours to keep its economy on a fast "catch-up" growth path vis-à-vis the European Union.

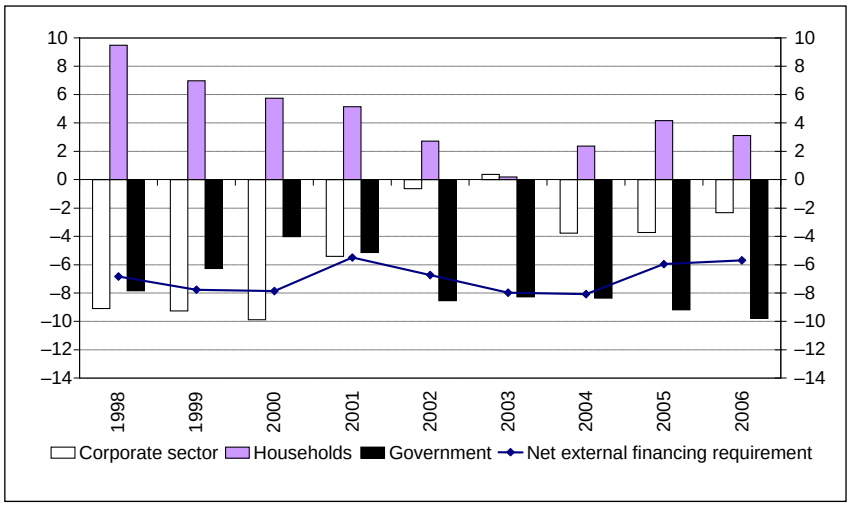
This paper aims to describe the causes and consequences of retail credit expansion. Accordingly, the structure of the study is as follows: Section 1 presents major trends in external financing needs and financing structure; Section 2 briefly summarises the main tendencies of credit expansion in Hungary; Section 3 investigates the issue of who bears the exchange rate risk; and Section 4 concludes.

## 1. External financing: needs and structure

***Loose fiscal policy significantly increased the external financing needs of the government.*** Whereas the 1995 consolidation gradually improved the government's financial position, the cyclical loosening starting from 2001 significantly worsened it, and by 2006 the public sector's financing needs were approaching 10% of GDP (Chart 1). Meanwhile, the corporate and household sectors were following quite different financing paths, due to a consumption/investment shift.

Chart 1

**Net financing capacity by sector (as a percentage of GDP)**



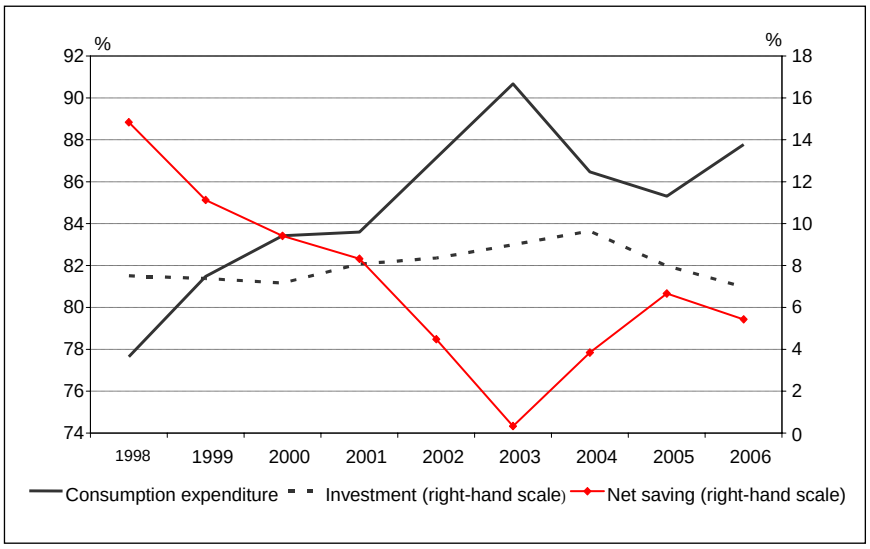

Source: Magyar Nemzeti Bank (the central bank of Hungary).

***Household saving dropped while liquidity constraints eased.*** The strong decrease in the corporate sector's borrowing requirement was not reflected in any improvement in the external balance, as at the same time household saving fell dramatically (Chart 2). As a result of a structural change in the consumption/saving behaviour of households, that sector's net saving declined from 10% to around 3% of GDP over the past 10 years. This change was due to several factors. First, with the nominal and real convergence of wealth and wages, households were eager to increase their consumption (the "catch-up effect"). Second, borrowing conditions eased and credit supply rose. In 2001, the government introduced a subsidised housing loan scheme (widely available, domestic currency denominated mortgage loans at below market interest rates and with caps), paving the way

for fast credit growth. Despite the tightening of the subsidised loan scheme, household demand for cheap credit remained high, and demand shifted towards foreign currency denominated housing and consumer loans, with general purpose mortgage loans gaining ground from 2004.

Chart 2

**Household consumption, investment and net saving as a ratio of disposable income**




Source: Magyar Nemzeti Bank.

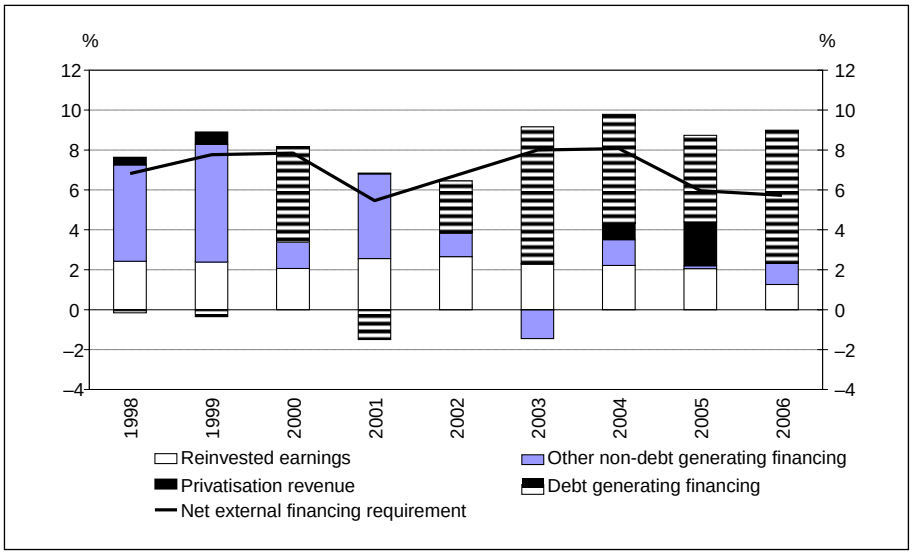
***A slowdown in investment reduced the financing needs of the corporate sector.*** While the borrowing needs of the public sector showed a rather stable, cyclical pattern over the past decade, the saving behaviour of the private sector changed significantly. Following the corporate sector's dynamic fixed asset accumulation in the second half of the 1990s, the sector's net borrowing requirement increased to 10% of GDP by the end of the century. Weakening external demand in 2000–01 put a brake on investment activity. Despite the recovery in foreign demand and export performance in 2002–03, corporate sector investment remained sluggish, with firms' financing needs stabilising at a relatively low level of around 3% of GDP (Chart 1).

***Strong FDI inflows financed corporate investment.*** In the second half of the 1990s, privatisation, the reassuring growth outlook and anticipated EU accession attracted a large amount of foreign direct investment (FDI). Apart from privatisation proceeds, there was a strong correlation between net FDI inflows and the financial position of the corporate sector. High fixed asset accumulation, which entailed an increase in firms' financing requirement, was mirrored by a rise in FDI inflows of similar magnitude.

***Financing structures moved towards debt-type instruments.*** At the end of the 1990s, the intensive privatisation period came to an end, and in subsequent years corporate investment activity slowed, leading to a substantial decrease in FDI inflows. In the last three to four years, the declining role of non-debt generating financing (ie net FDI and portfolio equity inflows) has also been amplified by an increase in the foreign direct investment and foreign portfolio equity holdings of Hungarian financial and non-financial companies. As a result, since 2003, debt generating inflows have covered the greater part of the external financing requirement (Chart 3).

Chart 3

**The financing structure of external borrowing requirements**



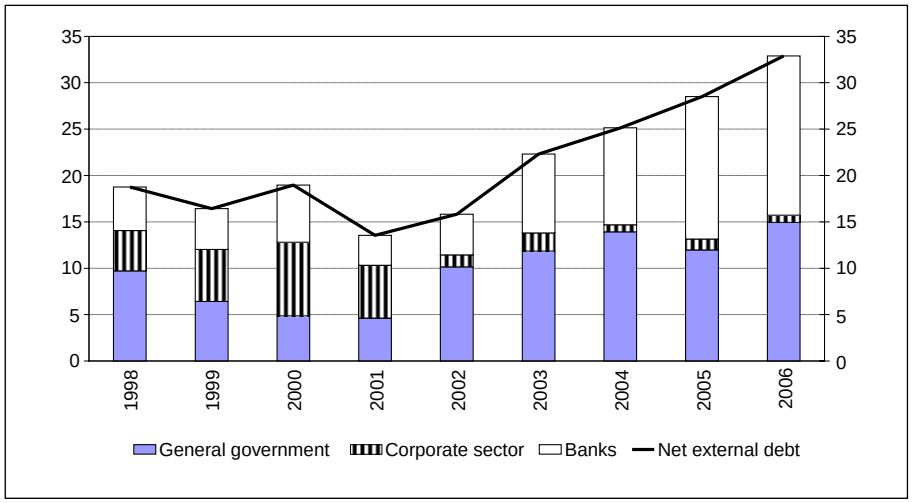

The substantial difference between net external financing requirements and the sum of net financing stems from the fact that, from 2004, the item "Net errors and omissions" in the balance of payments statistics has increased considerably, reaching 3.3% of GDP in 2006.

Source: Magyar Nemzeti Bank.

***A high current account deficit and a slowdown in FDI accelerated debt growth.*** While net non-debt generating inflows have decreased almost continuously over the past three years, external equilibrium has shown only a minor improvement. The high public deficit and the growing indebtedness of the household sector have been accompanied by an increase in debt financing. As the private sector borrows primarily from the domestic banking sector, banks' external debt has increased. At the same time, the general government external debt position has also deteriorated, contributing to a sharp rise in total external debt (Chart 4).

Chart 4

**External debt dynamics and sectoral breakdown (as a percentage of GDP)**




Source: Magyar Nemzeti Bank.

***Weak fundamentals led to a high risk premium.*** The combination of loose fiscal policy, high and repeatedly overshot budget deficit targets, a high current account deficit and its unfavourable financing structure, and growing external debt contributed to a rise in the required risk premium. Since 2000, Hungarian short-term (three-month interbank) interest rates have surpassed euro rates by 600 and Swiss franc rates by 760 basis points on average. The interest rate differential was even higher in 2003–04, the period when household foreign currency borrowing picked up strongly.

Summarising the macro trends, we can say that external financing needs were mainly generated by an expansionary fiscal policy, while the slowdown in corporate investment mitigated this effect and the rapid increase in consumption fostered it. As a consequence, the structure of external finance shifted from FDI towards external debt.

## 2. Retail credit expansion in Hungary

Hungary experienced a rapid increase in private sector indebtedness, which was typical in central and eastern Europe. Within the private sector, and in the household sector in particular, borrowing has been rising continuously over the last decade.

***Households faced liquidity constraints and postponed spending before 1998.*** In Hungary, household borrowing activity was insignificant during the 1990s, with loan portfolios showing a steady decline relative to GDP. Credit institutions did not regard households as their target market and did not offer household credit products. In the second half of the 1990s, the outlook for household income improved in the wake of economic consolidation, while there was a degree of household impatience due to a period of deferred consumption, resulting in substantial excess demand. Significant liquidity constraints, ie strictness on the supply side, were the main obstacle to growth in household indebtedness. Credit supply reacted with a delay to the improving creditworthiness of households; however, from 1998 there was a dynamic increase in consumer lending by banks and non-bank financial intermediaries alike. Car loans denominated in foreign currency comprised the greatest part of the consumer credit market.

***Improvements in economic and legal conditions encouraged household borrowing.*** High and volatile inflation and interest rates, low real incomes, and insufficient legal background hindered the evolution of mortgage loans, and there was no market for new housing loans for several years. From 1997, the gradual decrease in long-term yields and the inflation rate, associated with the establishment of a legal framework, created the necessary conditions for a functioning mortgage market by the end of the decade. The government's interest rate subsidy scheme for housing loans, introduced in 2001, was the first main driver of mortgage lending. From 2001, Hungarian forint-denominated subsidised housing loans increased rapidly, and consumer lending also continued to accelerate, led by car loans.

***Foreign currency lending increased rapidly.*** Since 2004, foreign currency denominated mortgage lending has dominated, in the form of both housing finance and home equity withdrawals. In December 2003, the government tightened the conditions of the house purchase subsidy scheme. Accordingly, the amount of government subsidy, subject to market rates and granted for purchasing new and used homes, was reduced. As a consequence, the cost of borrowing increased for customers, with a simultaneous decline in the banking sector's margin. These factors led to a new situation in the mortgage loan market, which directed the attention of both borrowers and lenders to foreign currency based products. The increase in foreign currency denominated loans had three main driving forces.

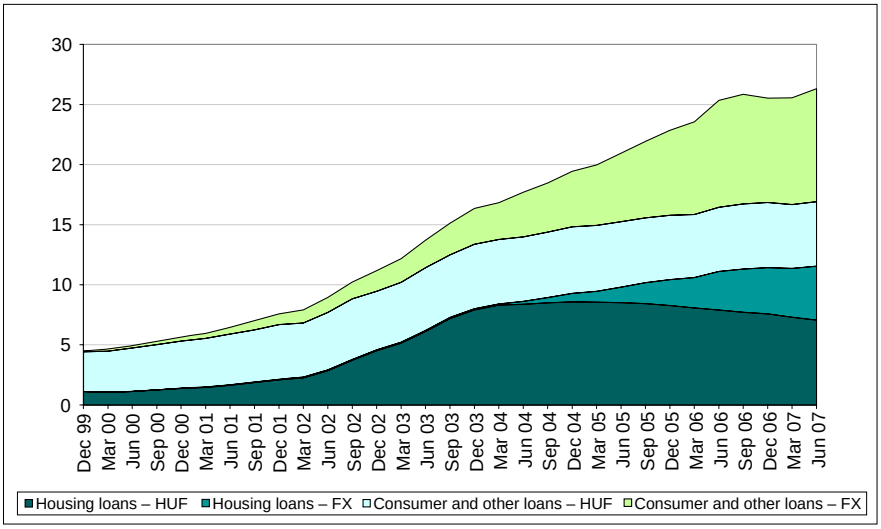
(1) ***"Catch-up effect".*** As a result of the nominal and real convergence of wealth and wages, households were ready to increase their spending. The favourable growth outlook and improving prospects for household disposable income, as well as low foreign interest rates, made it easier for households to finance their expenditure and service their debt.

(2) ***"Carry trades".*** The high forint risk premium and low historical exchange rate volatility made foreign currency denominated loans attractive. Due to the high premium on Hungarian assets, the difference between local and foreign currency denominated loans in terms of nominal costs was significant. In addition, although the Hungarian monetary policy regime had no explicit exchange rate target, the official intervention band, together with the inflation targets, resulted in a rather stable exchange rate. This meant that local borrowers rationally expected to gain on the interest rate differential ("carry trade"), without paying for it in terms of either higher exchange rate volatility or an exchange rate loss.

(3) ***Hungarian banks were willing and able to meet credit demand.*** The majority owners of almost all systemically important Hungarian banks are foreign financial institutions; moreover, most of them are EU (euro area) resident financial holdings with widespread presence in central, eastern and southeastern Europe. These parent institutions typically employ a "search for yield" strategy, as they want to maximise their net income in each market and always seek to exploit the more profitable markets and segments, even if these segments also involve higher risk. In their efforts to gain market share and increase profits, they do not hesitate to provide foreign currency lending.

Chart 5

**Growth and composition of household loans in Hungary (as a percentage of GDP)**




Sources: Magyar Nemzeti Bank; national accounts.

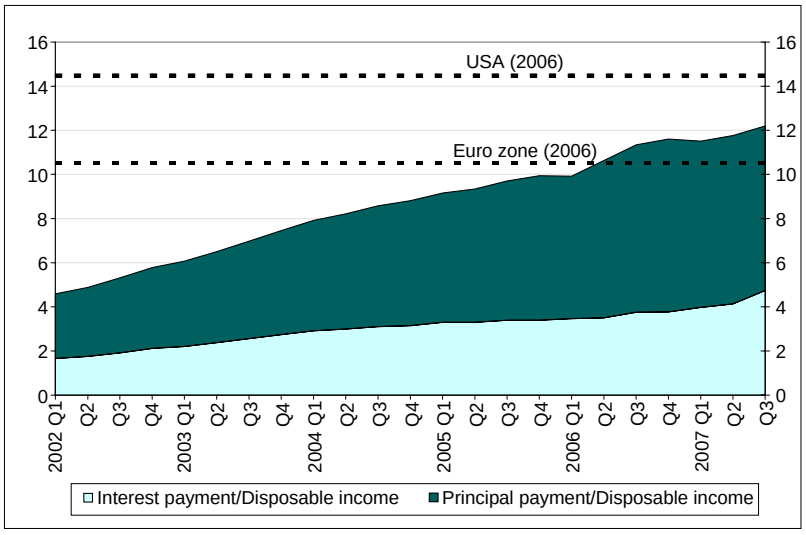
***Household indebtedness increased at a fast rate.*** In 2004, foreign currency housing loans started to grow, followed by general purpose mortgages and other consumer loans. This surge in home equity withdrawal was also supported by the relatively high proportion of home ownership of the housing stock and households' consumption-smoothing behaviour. With the increase in foreign currency loans and housing mortgages within the overall loan portfolio, there was a significant change in portfolio composition. By 2007, half the entire household portfolio and 80% of newly granted loans were comprised of foreign currency loans (typically in Swiss francs), and the lion's share was secured by mortgages. The household credit to GDP ratio exceeded 25% in June 2007 (Chart 5).

Foreign currency mortgage lending has several important consequences from a financial stability perspective. The most important is that it causes three kinds of mismatches to emerge in the different sectors of the economy: overindebtedness, and currency and maturity mismatches.

(1) ***Overindebtedness.*** The most important feature of overindebtedness involves the sustainability of a rapid increase in household sector indebtedness. As the results of a Magyar Nemzeti Bank study show,[2] the level of indebtedness proxied by the credit to GDP ratio is still moderate in Hungary, but it grew significantly faster than the equilibrium pace after 2002, and the dynamics accelerated further in 2006. This, in turn, may pose financial stability risks. In addition, the debt service burden of households reached the euro zone average (Chart 6). The debt service burden can be explained by, on the one hand, fast indebtedness and, on the other, high forint interest rates, the still relatively large share of shorter-term credits and low disposable income levels. Although the rate of growth in indebtedness is high, it still has scope for further growth if average maturity is extended, preferential conditions are offered, and the share of foreign currency denominated loans continues to grow.

Chart 6

**Debt service of households as a percentage of disposable income**




Source: Magyar Nemzeti Bank.

(2) ***Currency mismatch.*** The increase in indebtedness also entails a currency mismatch through external financing in foreign exchange. In the event of a shock, the high stock of foreign currency denominated loans can be a source of vulnerability, particularly in the household sector. When a currency depreciates sharply, borrowers experience large balance sheet losses. Investment and consumption decelerate, and financial institutions can be wiped out if any debtor burdened by large net foreign currency liabilities becomes insolvent.

(3) ***Maturity mismatch.*** Growth in foreign currency mortgage lending increases imbalances in the asset-liability structure of the banking sector. The growth in long-term mortgage loans, coupled with the change in the funding structure (a decrease in the share of stable household deposits and an increase in the importance of more volatile external and market funding), increases rollover risk. The reliance on funds from parent financial institutions is high, which raises the question of how the parents would allocate funds among

[2] Kiss et al (2006).

their various subsidiaries in liquidity stress situations. This leaves banks exposed to the risk that customer or counterparty behaviour will alter suddenly and radically (the risk of a "run on the bank"). This, in turn, may lead to reputational risk and contagion risk.

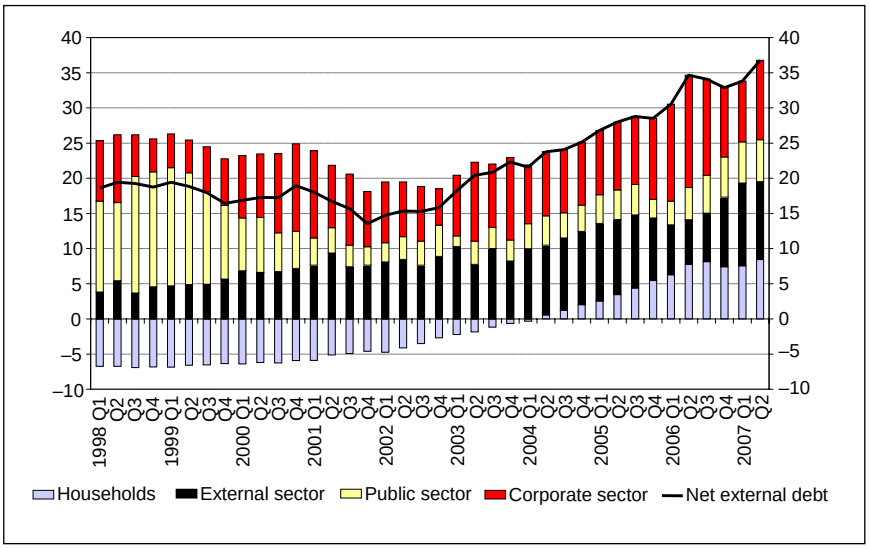
## 3. Who bears the exchange rate risk?

The boom in foreign currency denominated lending had an impact on the denomination structure of the Hungarian foreign exchange market. Net external debt equals the net exchange rate exposure of all sectors.[3] Therefore, the rise in foreign debt means an increase in the open foreign exchange position of one or more sectors. The sectors' different objectives and risk profiles determine their market selection and behaviour, as well as their contribution to the determination of the foreign exchange market equilibrium.

Non-residents took over the public sector's currency exposure. As the public sector turned towards domestic financing in 1999–2000, foreign investors increased their forint exposure through buying large amounts of domestic currency denominated assets, mainly government bonds, without hedging their currency exposure. By 2001–02, the non-resident sector's long forint position amounted to half of total net external debt (Chart 7). However, non-residents' forint exposure did not keep pace with the growth in external debt, which accelerated from 2003. The increase in non-residents' domestic currency exposure was just enough to keep their exposure to GDP ratio stable. This means that, despite the favourable global investment sentiment of the last couple of years, the Hungarian risk premium (the highest in the region) was not high enough for non-residents to further increase their domestic currency exposure. It can be assumed that a higher premium (weaker exchange rate, higher nominal interest rates) would have occurred had the domestic sectors not taken on increased forint exposure.

Chart 7

**Net external debt and foreign exchange exposure by sector (as a percentage of GDP)**




Source: Magyar Nemzeti Bank.

[3] On the assumption that non-residents' equity holdings do not represent a foreign exchange exposure, as equities represent a claim on real assets.

***Foreign investors can quickly change their currency position.*** Foreign investors are heterogeneous with respect to their investment time horizon and risk tolerance; nevertheless, they have the same single objective – to make a profit on their investment. They are capable of taking on large foreign exchange exposure over a short period (as evidenced, for example, during the speculative attack in early 2003, when foreigners bought forints for more than EUR 5 billion in two days, or when they sold Hungarian currency worth EUR 5.5 billion in July–August 2007). In calm periods, they have shown negative feedback behaviour on the spot market, but during periods of volatility they have followed positive feedback strategies, exacerbating exchange rate fluctuations. Foreign investors are active on both the spot and the swap markets (taking forward positions by combining these two markets, as the liquidity of the swap market is much greater than that of the forward), and actively use derivative instruments (mostly options) as well. Foreigners are supposed to be price-setters on the market, and hence the change in their required return is reflected in the exchange rate.

***The private sector is taking on increasing currency risk.*** As non-residents were not willing to take on large additional forint exposure after 2001–02, residents stepped in. Domestic households and the domestic corporate sector generated significant domestic currency demand through foreign currency denominated borrowing. Foreign currency corporate borrowing has a long history, but foreign currency denominated household and corporate loans have become widespread only since 2002–03. The corporate sector holds a significant part of total forint currency risk, but its exposure has lagged behind the rapid increase in external debt. Anecdotal evidence suggests that, while in the past foreign currency corporate borrowing partially reduced the corporate sector's currency risk, as it matched its existing or expected foreign currency position (ie hedged natural exposure), in the last couple of years borrowing flows have shifted towards companies (especially small and medium-sized enterprises) with no natural exposure.

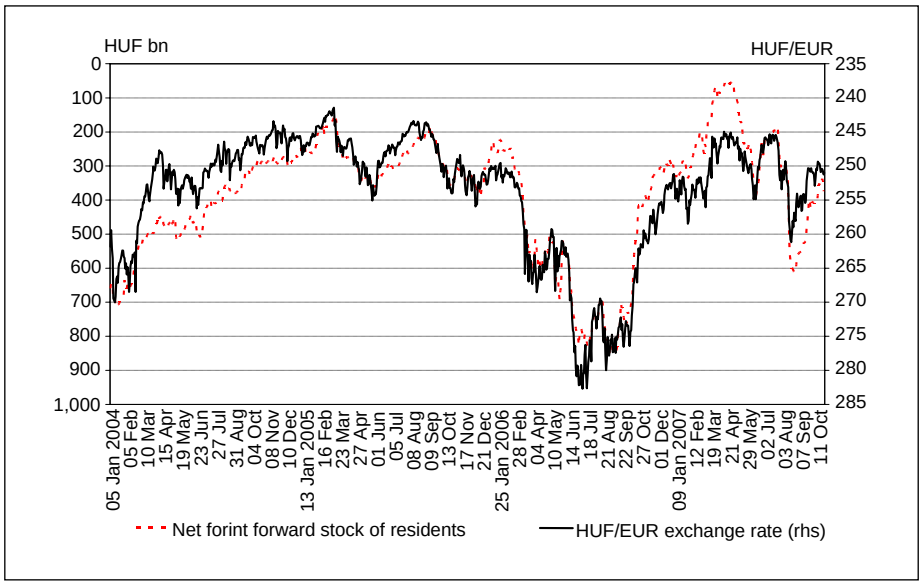
***The corporate sector is displaying different behaviours on the spot and on the forward foreign exchange markets.*** The corporate sector's truly exchange rate-sensitive activity is concentrated on the forward foreign exchange market. Here we find primarily companies willing to hedge their natural foreign exchange exposure from net exports and/or profit from a high interest rate differential or exchange rate movements. The carry trade feature of the forward market makes it impossible to separate hedging from speculative activity. There is clear evidence from bank transaction data that companies are highly exchange rate-sensitive on this market. They opened long forint forward positions as the exchange rate weakened, and closed positions when the forint appreciated (the corporate sector never took short forint positions on aggregate). As companies have a high degree of discretion over taking on exposure, they are supposed to be price-setters; their exchange rate expectations are therefore important components of the exchange rate determination process. If they expected a large depreciation, they would step in only if a much weaker exchange rate is negotiated, and vice versa. It is thus unsurprising to see the strong co-movement of the corporate sector's forward stock and the exchange rate (Chart 8). Companies can take on large foreign currency exposure; their negative feedback behaviour usually counterbalances the larger swings in foreign investors' positions, thereby smoothing the exchange rate movements. Looking back, this strategy seems to have been highly profitable. The reason is that the EUR/HUF exchange rate has fluctuated within a relatively narrow range in the last couple of years, returning to levels of around 250 after each period of appreciation or depreciation. Foreigners and domestic individuals rarely enter the forward foreign exchange market.

***Corporate sector spot market trading is primarily linked to foreign trade***, as evidenced by the strong correlation between monthly net trade data and spot market transaction volume. The seasonality of these transactions suggests that companies are not particularly sensitive to exchange rate changes; they may be price takers. However, anecdotal information from commercial banks suggests that exchange rate movements strongly

influence the timing of the drawdown of corporate credit lines. This means that some exchange rate sensitivity may appear on the spot market.

Chart 8

**Net forint forward stock of residents and the exchange rate**




Source: Magyar Nemzeti Bank.

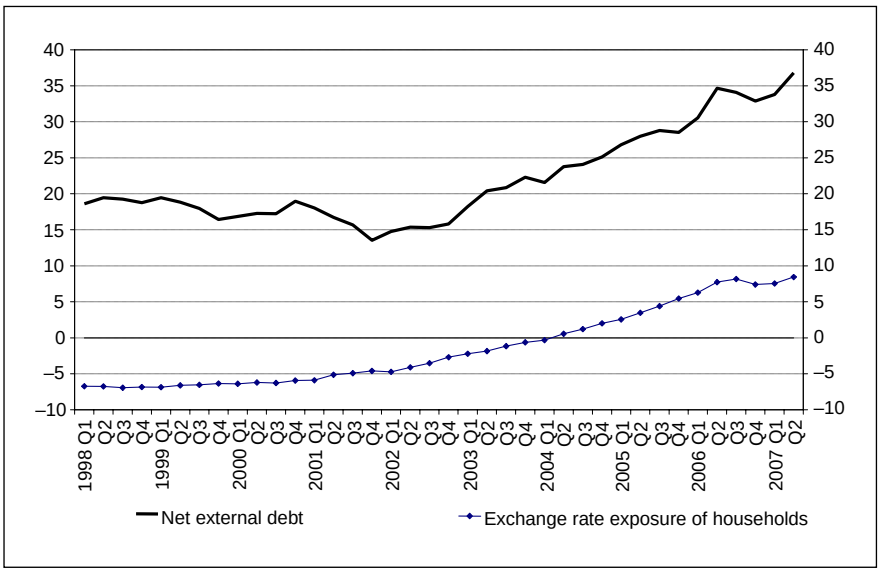
***Households' currency exposure has been growing steadily.*** Households' foreign exchange risk exposure has changed considerably in the past decade. In the late 1990s, households had a large stock of foreign currency deposits, built up earlier to hedge against high inflation and exchange rate depreciation (the latter having been facilitated by the crawling peg exchange rate regime). They therefore held a net short forint position. After reducing their forint-denominated savings, households tapped their foreign currency deposits to finance increasing consumption. Foreign currency borrowing accelerated the change in their currency position, and by the beginning of 2004 households on aggregate moved to a long forint position (Chart 9). Between 2001 and 2007, households' exchange rate exposure changed by almost 10% of GDP, as they assumed the majority of the foreign exchange exposure arising from the growth in external debt. In fact, they are the real foreign currency risk-takers.

***Households' structural demand for foreign currency denominated loans provides broad-based support for the exchange rate.*** Households' consumption and investment are denominated predominantly in local currency. Therefore, their growing foreign currency indebtedness signifies increasing foreign exchange exposure and continuous demand for local currency. The rather steady rate of increase indicates that their forint demand has little or no sensitivity to changes in the spot exchange rate. This can be explained either by their acceptance or ignorance of foreign exchange risks, or by their limited ability to determine the precise timing of loan-granting. As households take a huge foreign exchange risk exposure over a longer time horizon, they have an important role in exchange rate determination. They might not smooth out sudden shifts in other sectors' forint demand, but in the long run they support the exchange rate. It can be assumed that, without the large and steady demand for local currency on the part of households, the increase in the required premium due to the fundamental imbalances would have resulted in foreign exchange market equilibrium at a significantly weaker exchange rate. It should be mentioned, however, that there has been no great or prolonged depreciation of the domestic currency since foreign currency borrowing

picked up; the resilience of household borrowing to large exchange rate shocks has therefore not been tested.

Chart 9

**Total net external debt and the foreign exchange exposure of households (as a percentage of GDP)**




Source: Magyar Nemzeti Bank.

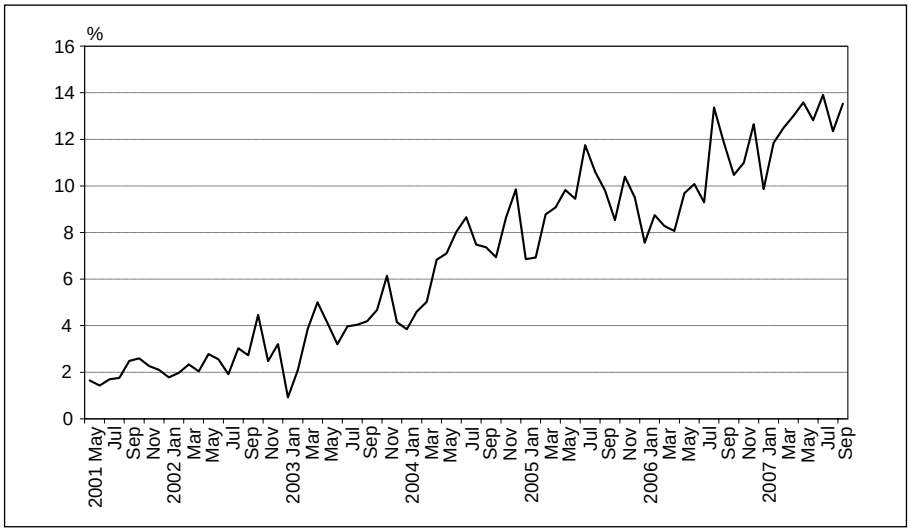
***Hungarian banks aim to limit their total balance sheet foreign exchange exposure***, in compliance with banking regulations. The banks counterbalance the growth of foreign currency denominated assets on their balance sheets by (i) obtaining external funds from the parent bank, (ii) raising finance directly on the market, or (iii) changing the foreign position on domestic funds through foreign exchange swaps. While keeping their total foreign currency position close to zero, banks transfer the exchange rate risk to the other sectors. Data show that there is a strong correlation between the transactions of the Hungarian interbank market and those of foreigners (the "hot potato effect") – that is, banks try to hedge their exposure with other banks until the banking system finally finds an external (domestic non-bank or foreign) partner to close it. Apart from a short period in 2006, the total foreign exchange exposure of the banking system as a whole has remained well below EUR 1 billion.

***Credit growth has changed the denomination structure of the foreign exchange market as well.*** The growth of Swiss franc-denominated loans to households and the corporate sector significantly increased the volume of franc-related transactions on the Hungarian spot foreign exchange market. Structural changes in foreign trade or investment flows cannot explain this increase (from around 2% in 2001 to 13% of total spot market turnover by mid-2007; Chart 10). A rather similar denomination shift occurred in the swap market.

A new product has just emerged on the retail market: yen-denominated mortgage-backed consumption loans. The future effect of the volatile currency involved may modify the "equilibrium" structure described above.

Chart 10

**Ratio of CHF-based[1] turnover on the Hungarian spot foreign exchange market**




[1] HUF/CHF, EUR/CHF and USD/CHF turnover as a ratio of total Hungarian spot foreign exchange market turnover. Calculations based on reports by Hungarian resident credit institutions.

## 4. Conclusion

At the end of the 1990s, Hungary was on an equilibrium growth path, with strong FDI inflows financing corporate sector investment activity, and household saving covering the public sector's financing needs. In 2001–03, a structural break occurred. Corporate investment and FDI inflows slowed down, the budget deficit increased rapidly, and household saving continued to decline, while consumption accelerated. The banking sector was eager to ease households' liquidity constraint, but the fundamental imbalances resulted in a high forint risk premium, which pushed both credit demand and credit supply towards foreign currency denominated loans. As external balances showed no improvement and debt generating inflows dominated external financing, total external debt increased steadily. The greater part of the resulting foreign exchange exposure was assumed by households, whose forint demand supported the exchange rate. Households thus entered a carry trade position, taking on exchange rate risk, which was historically low due to the monetary policy regime. Even though households are supposed to be price takers, they played a key role in establishing foreign exchange market equilibrium, as they replaced those price-setting foreign investors who would have required a much higher risk premium to accept the large additional forint exposure. While increased foreign currency borrowing facilitated consumption growth, it also increased households' foreign currency exposure and created overindebtedness and currency and maturity mismatches in the Hungarian banking sector.

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