Monetary policy challenges during the crisis in a small open dollarised economy: the case of Hungary

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1. Introduction

Inflation targeting as a choice for the monetary policy framework has become widespread in the past two decades, first in the advanced economies and then in the emerging economies as well. It is currently the policy regime of several central and eastern European (CEE) countries, including Hungary.

While the recent financial crisis has not undermined support for inflation targeting frameworks, the passive policy approach of recent decades to manage risks related to financial stability has been called into question. The argument in favour of a passive approach was that in the case of the financial intermediation system, it is generally very difficult to tell what constitutes excesses in terms of either volumes (credit growth, dollarisation) or prices (asset price bubbles, exchange rate misalignments). "Cleaning up" after a bubble bursts by providing the necessary lender-of-last-resort facilities has been regarded as a cost-minimising strategy. Since the crisis, however, a consensus seems to be emerging that a more pro-active application of macroprudential and microeconomic regulatory and supervisory tools is necessary to limit the build-up of imbalances that could threaten financial stability.[1]

In emerging markets, liability dollarisation[2] gives rise to constraints and dilemmas in terms of both inflation targeting and dealing with financial stability risks. Intermediation in foreign currency reduces the efficiency of monetary transmission's interest rate channel, while unhedged currency positions increase the vulnerability of the financial system to exchange rate shocks and decrease the efficiency of the exchange rate channel, the transmission channel that is particularly important in small open economies.

The goal of this paper is to explore this topic using Hungary, a small open dollarised economy, as an illustration. Section 2 discusses the factors that led to a build-up of Hungary's stock of foreign exchange (FX) debt. Section 3 turns to the effects of dollarisation on monetary policy transmission channels and financial stability. Section 4 investigates the short- and long-term policy measures that need to be taken to mitigate the potential costs of shocks in the future and to incentivise economic actors to create a more stable balance sheet structure. Section 5 concludes.

2. Dollarisation in Hungary: nature and causes

The experience of Hungary – and of some other CEE countries – with financial dollarisation is somewhat different from that of Latin American countries and the East Asian crisis economies in previous decades. In Hungary, dollarisation and currency mismatches have

[1] BIS (2008).

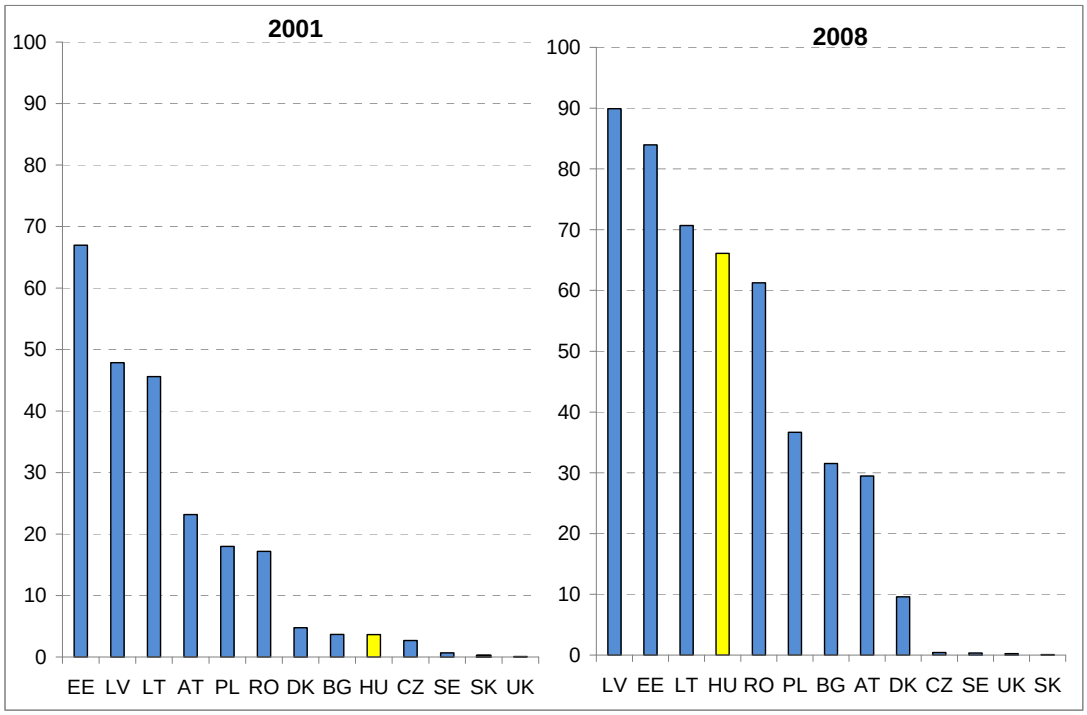
[2] By dollarisation we refer to the use of any non-domestic currency, not only US dollars. In eastern Europe dollarisation in this sense meant mainly the increase of euro and Swiss franc liabilities.

affected household balance sheets to a far greater extent than corporate balance sheets. The impact has been mainly on the liabilities side of balance sheets (liability dollarisation). Households' FX debt has increased dramatically since accession to the European Union and now accounts for nearly 70% of total household liabilities – a level that is considered high even by CEE standards (Graph 1). More importantly, household FX debt represents about 25% of GDP and thus constitutes a significant unhedged FX position, given that the incomes and wealth of households are principally denominated in forints. Corporate FX liabilities, while not insignificant, present less of a threat to financial stability, since the large share of exports in GDP implies a considerable inflow of foreign exchange, providing a natural – although usually only a partial – hedge for exchange rate effects related to FX liabilities.[3]

Graph 1

Share of FX loans in the stock of household debt

In per cent



AT = Austria; BG = Bulgaria; CZ = Czech Republic; DK = Denmark; EE = Estonia; HU = Hungary; LT = Lithuania; LV = Latvia; PL = Poland; RO = Romania; SE = Sweden; SI = Slovenia; SK = Slovakia; UK = United Kingdom

Source: Hudecz et al (2010).

The banking system only appears to have insulated itself from the effects of exchange rate movements by assuming FX liabilities to match the FX loans extended to households. It is still affected by exchange movements through several channels.

First, banks' credit risk is highly correlated with the exchange rate. A depreciation of the forint brings about a revaluation in the (forint) value of loans, thus making them costlier to repay. Since most households receive their income in forints, the risk of default increases when the exchange rate depreciates, lowering the quality of banks' loan portfolios.

[3] For a more detailed treatment see Krekó and Endrész (2010).

Second, since a substantial portion of banks' FX assets are matched by FX swaps, which are mark-to-market margined instruments (unlike FX loans to households), a deterioration in the exchange rate leads to an immediate revaluation of banks' liabilities and margin calls – the obligation to provide cash collateral to the counterparty that supplied the FX liabilities.[4] Such margin calls represent a major FX liquidity requirement in times of stress.

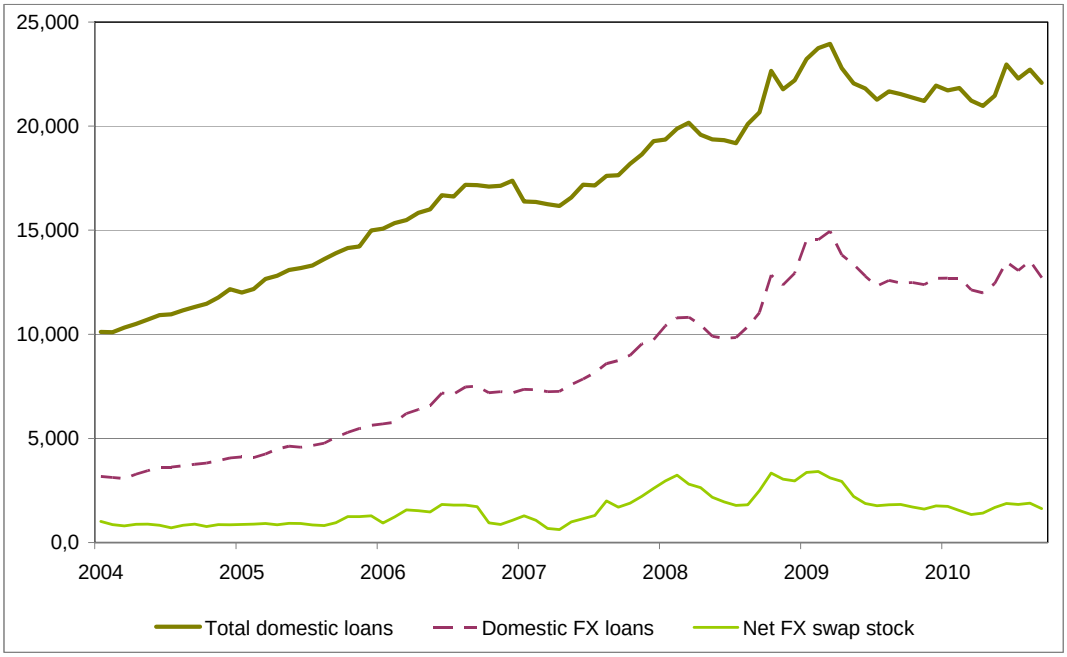
Third, pressures on FX markets and the associated higher costs of long-term FX funding trigger a shift into short-term FX swap instruments, whose frequent renewal requires constant access to FX liquidity.

The literature on financial dollarisation considers several factors as responsible for the build-up of FX balances. One necessary condition for dollarisation is an open capital account and financial integration. This condition was fully satisfied when CEE countries joined the European Union. Most studies find that the primary motive for dollarisation once the capital account is open[5] is the desire of a country's residents to optimise their portfolios' risk-return profile, based on backward-looking information. This involves borrowing in low interest rate currencies that in the past have tended either to be stable or to depreciate. In effect, households enter into a carry trade strategy by opting for low interest rate debt. Interest rate differentials and low exchange rate volatility are therefore key ingredients in (liability) dollarisation, which is confirmed by the experiences of Hungary and other CEE countries.

Graph 2

Banks' FX lending and stock of net FX swaps

In billions of Hungarian forints



Source: Magyar Nemzeti Bank.

[4] FX swaps are only one of the instruments used to hedge the foreign currency exposure that results from FX lending. Banks also borrow FX from parent institutions and the wholesale market, and accept FX deposits. During the recent crisis, however, hedging by creating synthetic forwards through FX swaps was a key factor in increasing sensitivity to exchange rate developments. For a detailed treatment see Páles et al (2011).

[5] Basso et al (2007), Csajbók (2010), Levy-Yeyati (2004).

On average, interest rates have been consistently higher in Hungary than in the advanced economies and in most of the CEE countries. The large interest rate differential is, in part, a result of the relatively high risk premium on forint-denominated assets, which in turn is a consequence of Hungary's high fiscal deficit and excessive government indebtedness. Persistently high inflation has also contributed to the large differential. In CEE countries where interest rates have been lower, FX lending has been far less widespread.

The impact of exchange rate volatility is in line with what one would expect. Liability dollarisation has been highest in countries such as the Baltic states that have fixed exchange rates. Because Hungary had an exchange rate target zone between 2001 and 2008, it engaged in more exchange rate smoothing than the Czech Republic or Poland, which has resulted in a greater degree of dollarisation.[6]

The choice of Swiss franc-denominated loans by the majority of indebted Hungarian households also shows the importance of (backward-looking) expectations regarding interest rate differentials and exchange rate volatility. The lower interest rates carried by these loans had been the main reason that they were more attractive to Hungarian households than loans denominated in Hungarian forints or euros. In addition, the prospect of euro adoption along with the highly stable (until recently) Swiss franc/euro exchange rate seemed to promise tolerable FX risks.[7]

3. Effects on monetary transmission and financial stability

Liability dollarisation in Hungary has weakened monetary transmission through both the interest rate and the exchange rate channels.

Because the majority of new loans issued between 2004 and 2008 were in foreign currency, financial deepening in the domestic currency came to a halt, which affected the interest rate channel. The ratio of domestic monetary aggregates to GDP has remained low by international standards and therefore – even though interest rate pass-through has been relatively strong on assets denominated in Hungarian forints – monetary policy has had a smaller impact on households' consumption and savings decisions.[8] The interest rate channel in Hungary currently functions mainly through its effect on investments.

The weakening of the exchange rate channel, which has traditionally been much more influential in Hungary, has had far more important consequences, especially since the beginning of the financial crisis. Households (and firms) with large FX debts respond to depreciations by reducing spending (as a result of higher interest payments and negative wealth affects), which partly offsets the positive effect on net trade and mitigates the impact on inflation. Calculations by Magyar Nemzeti Bank (MNB) staff show that the traditional direction of the exchange rate channel (depreciation acting as a monetary stimulus) is still valid, but only if financial intermediaries do not react to exchange rate fluctuations.[9]

The contractionary effects of a depreciation may win out over its expansionary impact on net trade, however, if financial intermediaries tighten their lending standards. Stricter lending standards do not pose a problem only for borrowers burdened with debts in foreign currency; they also curtail new investments. The corporate sector can be especially hard hit due to its

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6 Vonnák (2010).

7 For a more detailed discussion of the reasons behind the growth of household FX debt see Király et al (2008).

8 Hudecz et al (2010).

9 Krekó and Endrész (2010).

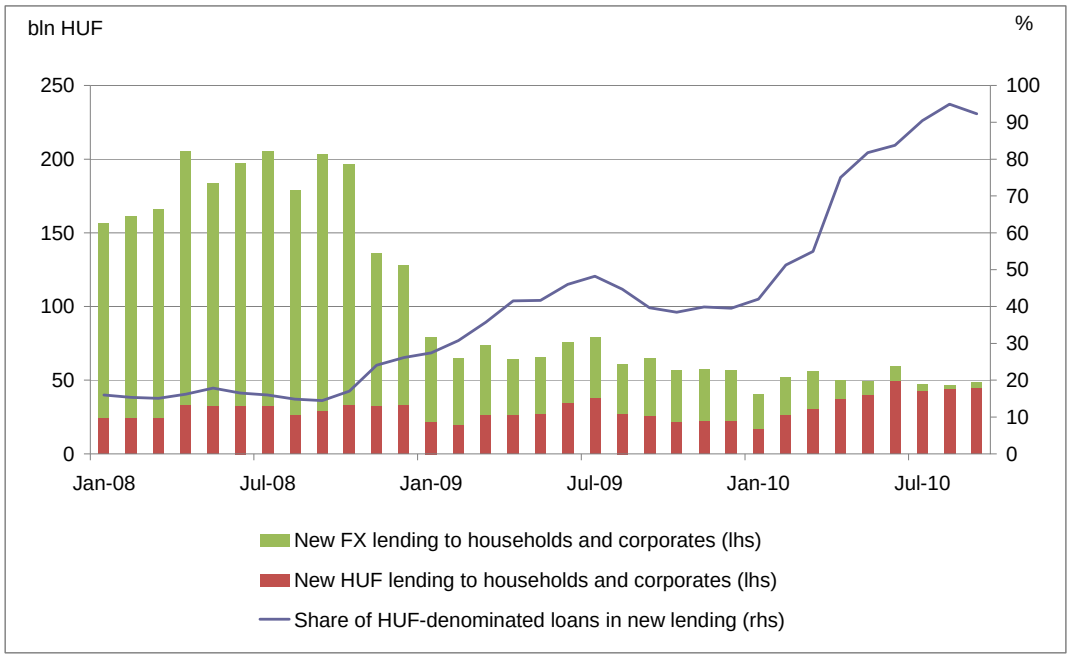
heavy reliance on short-term loans, which, in turn, constitutes a major drag on growth. If financial intermediaries lose access to external funding sources (systemic sudden stops[10]) or start to deleverage in an effort to deal with the impact of exchange rate depreciation, they may decide to ration lending. As described in Section 2, lenders are affected by exchange rate movements because depreciation can lead to a deterioration in portfolio quality and increased FX liquidity needs (margin calls) just when FX markets become highly illiquid.

Although estimates are subject to considerable uncertainty, it is clear that even mid-sized depreciations may cause the sign of the exchange rate's impact on output to revert and lead to contraction. The scale and abruptness of depreciations are especially important factors, as the literature and MNB staff calculations point out,[11] underscoring the non-linearity of the exchange rate's impact. The more abrupt and significant the exchange rate movement, the harder it is for economic actors to adapt, and the greater the consequences for bank portfolios. Extreme movements may trigger fears of systemic events, causing bank lending to dry up, increasing credit and sovereign risk premia, and leading to capital flight. While policymakers would respond promptly to such a full-blown scenario, under fragile financial market conditions negative feedback loops may be set in motion even before critical levels of the exchange rates are reached. Therefore "leaning against the wind" and signalling the possibility of market intervention can help policymakers respond pre-emptively to prevent a precarious situation from spiralling into a crisis.

Graph 3

Increasing share of loans denominated in domestic currency

In billions of Hungarian forints and as a percentage of new bank lending



HUF = Hungarian forints
Source: Hudecz et al (2010).

[10] Systemic sudden stops, which are often discussed in the literature (see for example Calvo et al (2008),) lead to depreciations that have a contractionary effect – at least in the short to medium run – that is stronger than the positive effect they have on a country's competitiveness (Cespedes et al (2004), Krugman (1999)).

[11] Eichengreen et al (2003), Choi and Cook (2004), Krekó and Endrész (2010).

The stress tests conducted by central banks are important in helping the latter gauge the evolution over time of critical nominal exchange rate levels. The tests provide an indication of the effect on banks' balance sheets and portfolio quality, and hence of the likely reactions of banks in terms of their lending activity. As households and banks adjust their portfolios – for example by decreasing the outstanding net amount of foreign currency liabilities – this induces a shift in the critical levels of these exchange rates, a dynamic aspect which has to be considered when evaluating stress tests' results with a lag.

4. Implications for monetary policy in Hungary

Liability dollarisation has both short-term and long-term implications for policy. The former refer to the immediate policy changes Hungary had to implement in order to contain the costs of the recent financial crisis, and include adjustments in both policy targets and policy tools. The latter refer to policy changes that can be implemented over a longer time horizon, when things have gone back to normal.

Short-run constraints and policy responses

An immediate consequence of the financial turmoil was a shift in the focus of Hungary's monetary policy from price stability to financial stability. The policy response to threats to financial stability during the crisis was inconsistent with Hungary's inflation targeting framework, since the crisis was expected to give way to a severe recession and disinflationary pressures, which would necessitate lowering the policy rate. However, the central bank had to proceed with caution, given the likely effects of an abrupt depreciation of the forint and the danger of setting off a self-reinforcing feedback loop in Hungary's dollarised economy. In this environment, policymakers could follow inflation targeting policies only if large and abrupt depreciations of the exchange rate could be avoided. In other words, inflation targeting was constrained by concerns about financial stability.

In October 2008, during the initial phase of the crisis, Hungary raised its key policy rate dramatically, by 300 basis points, as part of efforts supported by the European Union and the IMF to stop capital flight and stabilise the exchange rate after the significant initial depreciation. Monetary policy continued to take financial stability constraints into account even after consolidation had been achieved and financial markets stabilised. The policy rate was decreased very slowly, in light of the fact that maintaining a sufficient interest rate differential was necessary to minimise the risk of a sudden exchange rate depreciation. Gradually, however, the financial system – and, to a lesser extent, households – adjusted by strengthening their balance sheets, as revealed by the stress tests. From the central bank's point of view, this adjustment gradually gave monetary policy more room for manoeuvre, allowing further rate cuts up until early 2010.

Another key aspect of the policy response to the financial crisis was the increased use and importance of unconventional policy tools. In Hungary, as in other countries, the aim of stabilising the financial system by maintaining the functionality of financial markets became an important short-term objective of the central bank. Due to Hungary's integration into European financial markets and increased foreign exchange funding, the liquidity shock in Europe quickly reverberated throughout Hungary. Yet Hungarian financial intermediaries without strategic investors from the euro area had no direct access to the crisis-management tools of the European Central Bank (ECB). This, in turn, required the MNB to create policy instruments that supported liquidity in both the FX and forint markets. MNB started providing EUR/HUF and CHF/EUR swaps to domestic commercial banks, set up a longer-term loan facility and purchased government bonds on the secondary market. These actions were arguably just as important in stabilizing the markets at the outset of the crisis as the 300 basis point increase in the policy rate.

At the same time, policymakers recognised the necessity of raising the level of Hungary's international reserves. At the beginning of the crisis, the low level of the country's foreign reserves relative to the rapidly increasing short-term component of external debt was a factor contributing to the loss of investor confidence in forint-denominated assets. Thus, official lending from global institutions – the IMF and the European Union – was of critical importance, allowing the MNB to increase its international reserves significantly.

Additional pressure was put on international reserves by the central bank's swap facilities, which provide foreign currency liquidity to domestic banks. Various swap and repo agreements with the ECB and the Swiss National Bank allowed MNB to satisfy FX liquidity needs, at least partially, without draining reserves.

The shift in monetary policy's focus from price stability to financial stability meant that excessive and damaging shifts in the exchange rate were to be avoided. In such situations, foreign exchange intervention is always a possibility. The MNB's intervention practice, as always, has been driven by the principle that interest rate policy is the primary tool to influence monetary conditions, and foreign exchange intervention is considered a temporary measure that may alleviate market dysfunctions and extraordinary fluctuations in the exchange rate. However, MNB never ruled out its potential presence on the FX market, thus maintaining a state of "constructive ambiguity", which allowed the use of verbal interventions – the announcement of the Bank's intention to channel FX-denominated transfers from EU funds to the spot market – in situations where market pressure was significant. These verbal interventions, which occurred once in 2009 and once in 2010, had a significant positive impact on exchange rate dynamics in times of stress. All in all, the actual market presence of the central bank was relatively rare, and involved relatively small amounts.

Long-run perspective

Thanks to the lessons learned from the crisis, a return to pre-crisis, "normal" conditions will not mean reverting to pre-crisis policy. The crisis demonstrated that current levels of financial dollarisation in some CEE countries, including Hungary, are excessive and constitute a significant risk to the stability of balance sheets of households and financial intermediaries.

Although there are signs that economic actors now understand the risks involved in FX borrowing and have begun to adjust their portfolios accordingly, policymakers need to find ways to reduce the stock of foreign currency debt. Prudent fiscal policy is one way, since a lower fiscal deficit reduces external funding needs. Also, a sustainable fiscal path moderates the risk premium component of domestic interest rates and thus the interest rate differential.

Most importantly for traditional monetary policy, devotion to strict inflation targeting with a flexible exchange rate regime would also provide important disincentives to borrowing in foreign exchange. Credible inflation targeting could lower inflation expectations and thus the interest rate differential, a key ingredient in dollarisation. Moreover, policies that avoid excessive exchange rate smoothing would make economic actors realise the true magnitude of the risks involved in foreign exchange borrowing.

There are several other methods for addressing and discouraging dollarisation. One is regulation, eg establishing maximum loan-to-value ratios for different currencies and types of debtors. At the extreme there is the possibility of banning foreign currency lending altogether, which is practically the strategy being pursued by the current Hungarian government. However, such methods will require international coordination of regulations and supervision, as demonstrated by the ineffective pre-crisis attempts of Bulgaria, Romania and Croatia to

prevent foreign currency lending, which residents were able to circumvent by borrowing foreign exchange abroad.[12]

There have been discussions in Hungary about converting FX loans into domestic currency. However, debt conversion on a massive scale is probably infeasible. Regardless of the particular technique used, a conversion of FX loans into forints would necessitate swapping the FX funds matching such assets into forints as well, unless the banks are willing to assume the exchange rate risks themselves. Such a massive portfolio shift into forint-denominated assets would be possible only at a considerable discount, which would lead to a large currency depreciation. As a result, someone – the households, the government or the banks – would have to absorb the losses resulting from the revaluation of the loan principal.[13]

The crisis also provided a lesson on the importance of maintaining adequate levels of foreign exchange reserves. It highlighted how important international sources of FX liquidity can be in complementing central bank reserves, either through credit lines or swap facilities. However, it also demonstrated that covering potentially volatile foreign capital inflows by keeping large reserves in anticipation of a possible future reversal of flows is probably not the first-best solution, and that more emphasis should be placed on avoiding the large-scale build-up of such inflows.

5. Conclusion

Financial dollarisation reduces the efficiency of monetary policy and increases risks to financial stability. A large stock of foreign currency debt weakens interest rate and exchange rate transmission channels. In small open economies such as Hungary, the weakening of monetary policy's exchange rate channel is of central importance. The traditional inflationary effect of depreciation – transmitted through the channel of rising import prices and net trade – after a reduction in the policy rate is offset partly by a reduction in residents' spending due to a revaluation of the stock of FX debt.

Moreover, large and abrupt depreciations affect the financial system through deteriorating credit portfolios and increased FX liquidity needs, posing severe risks both for growth (banks cut back lending, effectively freezing investments) and for financial stability (as confidence in both the solvency and the liquidity of the banking system decline). The effect on growth and financial stability increases in a non-linear manner with the scale of exchange rate depreciation.

Monetary policy has to deal with liability dollarisation in both the short and the long run. The potential for self-reinforcing feedback loops to develop as a consequence of large exchange rate shocks and capital flight requires pre-emptive policy measures. Such measures include implementing a cautious interest rate policy that takes financial stability constraints into account, intervening in FX markets verbally and – under extreme circumstances – directly, setting up liquidity-enhancing central bank facilities, and augmenting foreign exchange reserves through international credit and swap lines.

There are signs that domestic economic actors have learned about the risks of FX borrowing and begun to readjust their liability portfolios. As things return to normal, fiscal and monetary policymakers should implement measures that discourage the build-up of excessive foreign currency debt stocks, such as economic disincentives or international coordination of regulation enforced by efficient supervision.

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[12] Rancière et al (2010), Rosenberg and Tirpák (2008).

[13] For estimates of the cost of debt conversion see Balás and Nagy (2010).

In the long run, an inflation targeting framework with a flexible exchange rate may be monetary policy's most effective means of promoting financial stability and preventing liability dollarisation, since interest rate differentials and stable exchange rates are the two key factors in residents' preference for FX borrowing. High interest rate differentials are often a consequence of persistently high inflation, and a credible inflation targeting regime and prudent fiscal policy would reduce spreads. Exchange rate stability is often supported by policy attempts to smooth short-term fluctuations, but smoothing conceals the risks involved in borrowing foreign exchange, unlike a flexible exchange rate regime. During the crisis, policy aimed at assuring financial stability was often at odds with Hungary's inflation targeting framework, but, in the long run, policymakers will also be able to use inflation targeting in support of their financial stability objectives.

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