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Foreign Currency Denominated Loans in the CE-3: Treat or Threat?

Abstract

The increasing share of loans denominated in foreign currency in Eastern European countries has been an outstanding feature in the financial deepening process in the region. Access to foreign interest rates has allowed many local borrowers – including, and at growing proportions, households - to benefit from unprecedentedly low costs of funding. This paper examines the evolution of the availability of foreign currency loans in the Czech Republic, Hungary and Poland, and addresses, mainly from a theoretical perspective, two issues arising from the positive trend observed in the latter two countries. The first issue refers to the potential effects of the availability of low-cost funding on aggregate demand, and consequently on monetary policy targets. Our considerations on this matter suggest that the credit channel is not relevant enough in the transmission of monetary policy rates in any of the three countries for the volume of foreign currency loans to have a significant impact. The second refers to the fact that foreign-currency borrowers often lack matching revenue flows denominated in the corresponding currency, and therefore expose lenders to default risk in case of adverse currency movements. We therefore explore potential risks to the stability of the bank system in light of foreign-currency lending exposure in the three countries, and conclude that risks are not alarming, but do exist for Hungary and, to a lesser extent, Poland.

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Table of Contents

1. Introduction

The majority of the new European Union member states in the Central and Eastern European region (the "CEE") have experienced an impressive increase in bank credit to private sector as a percentage of GDP (referred to as "BCPS ratio") over the last decade. The background for this paper is the evolution of this trend in the Czech Republic, Hungary and Poland (the "CE-3") – not only because they are the three largest economies amongst the new members of the Union, but also because they underwent notably different paths in the development of the credit market from the inception of transition to present times.

An outstanding feature in the financial deepening process in the CEE has been the large share of credit denominated in foreign currency ("FX lending"). Whilst such a feature is common and desirable as a natural hedge when the respective borrowers are concomitantly creditors of payments in foreign currency (such as exporting companies), it is remarkable that foreign-denominated loans have become popular amongst small and medium enterprises ("SMEs") and other non-exporting companies and, more significantly, amongst households.

In this respect, the trends observed in the three countries analysed herein are also remarkably different. For all three countries, in periods in which interest rate differentials were significant, the lower interest rates of loans denominated in euros, Swiss francs and US dollars appealed to families and individuals eager to finance the acquisition of property, cars and other capitalist treats. Whereas this appeal has lost strength in the Czech Republic, it has gained momentum in Poland and Hungary – even in periods in which interest rate differentials lost relevance.

In Hungary and Poland, therefore, the significant share of FX lending in financial institutions' portfolios raises questions as to (i) the role of local interest rates in fine-tuning other national economic variables; and (ii) the risks borne by the lenders in the currency mismatch between borrowers' own income and liabilities.

The focus of this paper is an analysis of the overall credit growth and FX lending trends in the CE-3 and discuss the potentially negative impact that volume, terms and conditions of these

loans, as well as the profile of the borrowers, have on the on the implementation of monetary policy and on the risk profile of the banking system in these countries.

2. The Evolution of Credit to the Private Sector in the CE-3

2.1. The transition: From soft budget constraints to hard core capitalist banking

The growth of financial depth (the ratio of financial stock to GDP) in general, and of credit to the private sector in particular, can be seen as integral features in the process of economic development. There is ample theoretical and empirical support for the tight link between availability of credit and financial-market development on the one hand, and economic growth on the other hand.

The relationship is mutually reinforcing: whilst the availability of credit provides the liquidity needed for investments, asset accumulation and consumption to materialise, economic growth, in turn, implies increased wealth and improved financial standing of borrowers, and therefore a safer context for the supply of credit to expand.

This mutualism can be richly illustrated by BCPS and growth figures for most of the CEE countries[1], especially given the rather low initial levels of credit to the private sector at the inception of the transition process.

Under central planning regimes, absent a "private sector", credit was rather directed to the economic sector (*i.e.*, to state- or socially-owned enterprises) through public banks, and guided by political decisions rather than by repayment-capacity assessments. This context gave rise to continued lending to underperforming enterprises (what is labelled in literature as "soft budget constraints"[2]).

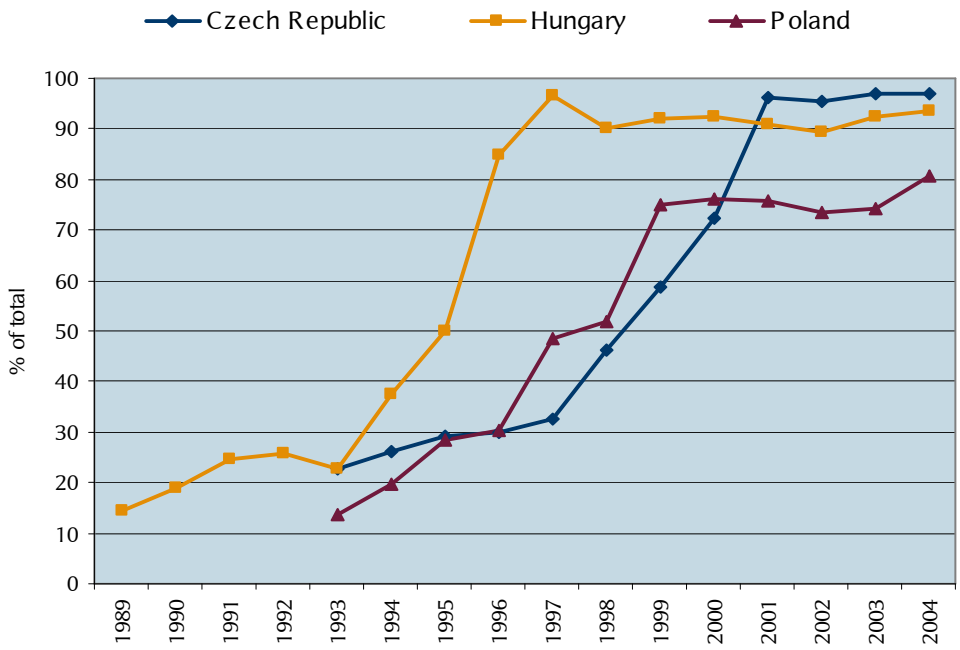
The financing of inefficient state companies lingered on during the first years of transition. The nascent private sector, in turn, had limited access to credit (with the obvious exception of

[1] See IMF (2006b) for an econometric analysis producing a statistically significant positive impact of GDP growth on financial depth for the new CEE member states.
2 Berglöf and Roland (1998), *inter alia*.

parent-funded subsidiaries and affiliates of foreign companies), what explains the rather low BCPS ratios at which most countries abandoned central planning regimes.

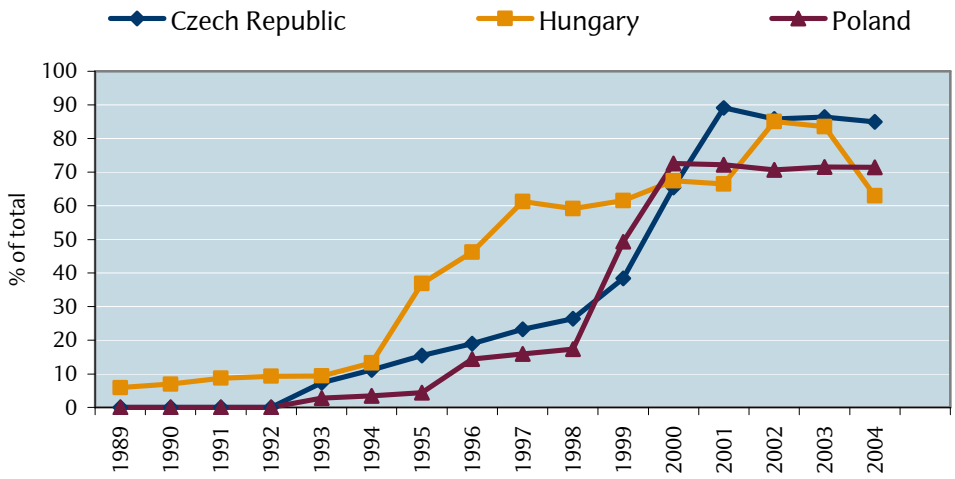
As the transition process gained momentum, the need for a proper, market-oriented banking system became clear. In a sequence of banking system reforms, banks were privatised, bad loans were transferred to the government or to "hospital" banks, and the new private (and often foreign-owned) banks started to make loans to the private sector at commercial terms.

Chart 2.1 (a): **Asset Share of Private Banks**



Source: EBRD

Chart 2.1 (b): **Asset Share of Foreign-Owned Banks**



Source: EBRD

The flourishing of credit supply for the private sector on a commercial basis was a common phenomenon in the CEE in the period that followed.

Based on CEE transition data a series of other indicators of economic development have proved to be correlated with and influential in the evolution of BCPS. For the transition period in the CEE, Cotarelli *et al* (2003) identified the following macro and micro economic sectors as explanatory variables in the determination of direction and pace of BCPS evolution:

I – <u>macroeconomic and structural factors</u>

(i) Evolution of GDP per capita – consistent with the theories of economic development and financial depth mentioned above;

(ii) Bank intermediation - rising deposit-to-GDP ratios provided banks with liquidity to increase credit supply;

(iii) Decline in bank credit to the government sector-to-GDP ratio[3] (the "crowding-in" effect, as the availability of funding for the private sector triggered by a decrease in the proportion of loans granted to the public sector is often referred to);

[3] Backe et al. (2006) provide strong evidence supporting both crowding-in and crowding-out in the CEE, respectively, as banks decreased or increased credit to the public sector.

(iv) Progress of institutions – including market rules, quality of legislation protecting creditors' rights and law enforcement;

(v) Foreign Direct Investment in the non-bank sector (henceforth referred to as "FDI") – a negative correlation: strong FDI (especially credit from parent companies) can be a substitute for bank credit growth

II – <u>microeconomic and bank-specific data</u>

(i) Bank profitability and efficiency, as banks performing better are likely to lend more;

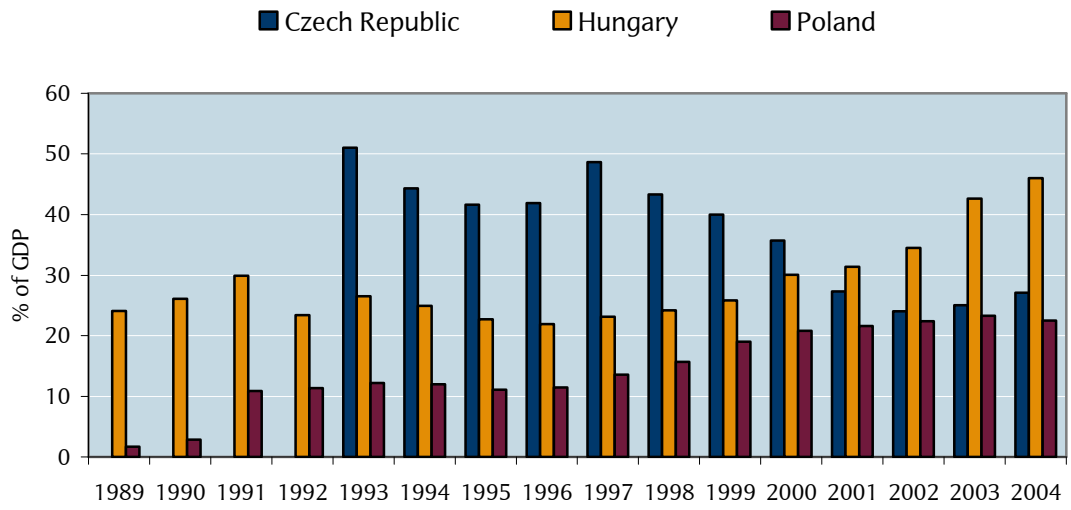
(ii) Privatization/private ownership in the banking sector[4]: the need to increase market penetration is more pronounced in private, commercial institutions, which will put more effort in expanding their borrower base;

(iii) Foreign ownership: foreign-owned banks (a) often have access to cheaper funding from abroad; and (b) can translate parent know-how into improved credit assessment technologies, profitability and efficiency

As the combination and pace of evolution of these elements varied significantly for each of the CE-3 countries, different effects can be observed on the relevant BCPS ratios, as illustrated for the Czech Republic, Hungary and Poland below.

[4] Note, however, a lag from privatization to credit expansion as a rule. Banking consolidation measures have often led to major temporary contractions in credit-to-GDP ratios as nonperforming assets were removed from banks' balance sheets

Chart 2.1 (c): **Domestic Credit to the Private Sector**



Source: EBRD

Both Hungary and Poland began the transition with a rather accelerated growth, but whilst the pace of growth of BCPS in Hungary picked up significantly after a period of stabilization, Poland experienced a more moderate and gradual growth, and current levels remain relatively low.

The Czech Republic, in turn, having entered transition at a high level of credit outstanding as a proportion of GDP relative to the other countries, was an exceptional case of low, and often negative, growth of BCPS.

Each country is analysed in more detail below.

Poland

An "early bird"[5] as far as rapid BCPS growth is concerned, Poland did in fact experience a strong combination of the "macro" and "micro" elements identified.

[5] Cottarelli *et al* (2003) identifies three main trends among the Central and Eastern European countries. The "*early birds*" (Bulgaria, Croatia, Estonia, Hungary, Latvia, Poland and Slovenia) had BCPS ratios growing at an average annual rate in excess of 1.5% of GDP, and all had experienced an increase in bank intermediation and crowding-in. The "*late risers*" (Bosnia and Herzegovina, Lithuania and Serbia and Montenegro) had rates of growth almost as high as those of the *early birds*, but started much later. Finally, Albania, Czech Republic, Macedonia, Romania and Slovakia were the five "*sleeping beauties*", with an initial decline in BCPS ratios, followed by stabilization at low levels but with underlying growth in share of loans to households.

Overall, Poland shows the most stable financial deepening profile amongst the countries analysed, with a substantial growth at a relatively constant pace.

A closer look at the developments in the loan market, however, highlights a shift in both (i) the factors spurring growth and (ii) borrower profile.

As identified by Pruski and Zochowski (2005), a first period of growth in lending in Poland (1996-97) was marked by a significant increase in corporate debt, in a context of rapid economic growth. A nascent consumer loan market also showed the first signs of strength in that period, as conditions in labour market (and consequently on households' financial standing) improved.

A second wave of growth in lending occurred between 1999 and 2000 with the privatisation and consolidation in the banking sector. This period was followed by an economic slowdown, which led to a shift in borrower base: as companies not only refrained from borrowing, but also repaid their outstanding loans, banks turned to the household sector, especially automobile and housing loans. Increased bank efficiency (measured by the cost-to-income ratio) and profitability (as a result of the success in the householder sector) became a significant driver of credit growth in that period[6].

A third wave of strong growth can be identified from 2003 to the present. A series of factors have been contributing to the current growth (in which corporate loans are also picking up): inflation stabilised at low levels, lower domestic interest rates low and access to even lower foreign rates, intensified competition amongst banks.

The increase in household borrowing is even more intense as, in addition to the fore-mentioned factors, a population boom and the expectations of property prices increasing with the accession to the EU have been boosting household demand for credit.

Hungary

Hungary was the first country in Central and Eastern Europe to commit to a banking system reform. Complemented by the implementation of an appropriate legal framework (including a Bankruptcy Act and legislation concerning the enforcement of the right of pledge), the

[6] See Crespo-Cuaresma *et al* (2006).

restructuring and privatization of the Hungarian banking system were well underway by the mid-1990's.

State ownership had fallen to 20 percent of the banking system's share capital by 1997. Hungary practised a liberal licensing policy leading to many foreign banks setting up subsidiaries in the country, in addition to their intense participation in the privatisation process.

The presence of foreign banks was not only a major factor behind the quality and variety of banking products that soon emerged, but also increased competition. The process triggered a fast increase in both the supply of and demand for loans to the private sector.

However, BCPS growth plateaud following completion of the process, as bad loans were cleaned up and private banks took a more cautious approach in selecting their borrowers. Moreover, the strong inflow of foreign direct investments that marked transition in Hungary implied that many firms could borrow directly from their parent companies or from banks abroad, bypassing the local banking system.

Loan volume picked up again after 1998, and during the 2001-2004 period, bank profitability became a significant driver of credit growth.

Credit growth has been the most significant in recent years in Hungary. An expanded housing subsidy scheme (also to blame for the government's increasing deficit) and the wide availability to households of low(er) interest loans denominated in foreign currency are some of the main factors fuelling growth.

Czech Republic

Although the Czech Republic has scored progressively higher in macro elements such as quality of institutions and GDP growth, the evolution of BCPS in the country was predominantly negative, appearing rather counterintuitive at fist sight.

An understanding of a few idiosyncrasies can shed some light on the Czech lethargy in BCSP evolution. Quality of data is one of them: bank data for the early years of transition was not broken down per borrowing sector. As loans to both public and private enterprises were

pooled together, the pro-forma initial levels of credit to the economic sector in the Czech Republic were substantially high.

Because a good share of the loans comprised in the BCPS numerator were legacy bad loans, the writing-off of such loans had a negative impact on total outstanding credit and delayed the growth of the bank loan market.

Another relevant factor explaining the slow growth – or rather, the actual decrease in BCPS in the 1997-2002 period – is the financial crisis initiated in 1997, when the local currency suffered a speculative attack. The strong depreciation and high levels of inflation that followed called for strict credit restrictive measures, which depressed BCPS for the following years.

Finally, the strong growth of foreign investments to the country also contributed to depressing credit growth, in two ways. Firstly, as mentioned above, FDI-funded business are less likely to require additional credit. Secondly, the large inflow of foreign currency has been largely sterilised by the Central Bank by means of increasing the levels of compulsory bank deposits with the institution in order to control the risk of excessive liquidity and inflation.

In spite of the overall sluggishness of BCPS growth over the transition period in the Czech Republic, lending to households (mainly mortgages, and more recently consumer loans) has expanded at rapid rates in recent years, raising concerns about the level of household debt and credit risks.

2.2. Catching up with economic growth?

The fast pace of credit growth in the transition countries has been instigating concerns about excessive lending.

Backe *et al* (2006a) map data from a variety of countries in different levels of development to ascertain a credit growth level corresponding to economic fundamentals at different points in time. The study concludes that none of the three countries has exceeded its equilibrium levels of credit in relation to its GDP. Hungary may have already reached its equilibrium and Poland is not far off it. The Czech Republic, on the other hand, albeit having started the transition

process in a context of excessive credit, has had its credit levels dropped below what the equilibrium figures suggest.

We propose an alternative approach, considering the longer-running character of the financial deepening process (and the common lags between credit growth and economic growth). Considering the relative BCPS and GDP levels currently prevailing in the EMU area as a benchmark, we derive: (i) the number of years necessary for the CE-3 countries to reach EMU GDP per capita levels if the current pace of GDP growth is maintained; and (ii) the compounded average growth rate (CAGR) of BCPS necessary for the CE-3 countries to catch up with EMU financial depth levels.

The CAGR obtained is then compared with actual BCPS/GDP growth rates for the three countries:

Table2.2: **Estimated "Equilibrium" Growth Rate of BCPS to GDP Ratios in the CE-3**

	Czech Republic	*Hungary*	*Poland*
Time to EMU GDP/capita benchmark (years)	12.8	11.7	18.6
Actual BCPS/GDP ratio CAGR	-5.2%	8.4%	8.7%
BCPS/GDP CAGR needed to reach EMU levels	5.0%	8.1%	9.0%

Source: IFS, Eurostat, author's calculations

Having initiated the transition process at a high level of BCPS to GDP, the Czech Republic commanded a much lower growth rate of financial deepening to catch up with EMU countries (5 percent vs. circa 8.5 percent for the other two countries).

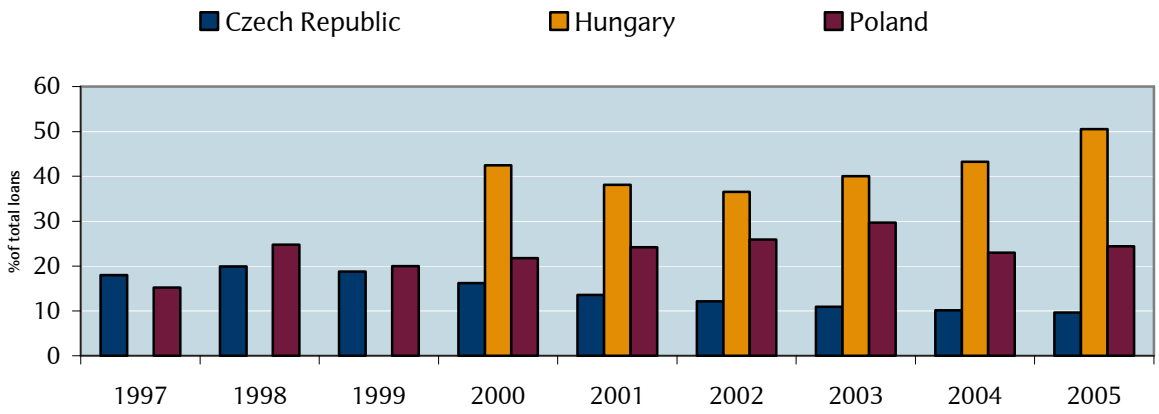
The numbers suggest that the actual rates of financial deepening are in line with or, in the Czech case, way below the acceleration needed to bring them to the same level of financial depth prevailing in the EMU. The risk of an excessive growth, therefore, does not seem to be impending.

2.3. The FX lending boom

A notable feature in the evolution of financial deepening in many of the CEE countries was the share of loans denominated in foreign currency, to which foreign interest rates apply. Because the interest rates applicable to loans denominated in US dollars, euros or Swiss francs were often lower than local rates, the availability of such FX-denominated loans made credit transactions affordable for many borrowers, and can be held accountable for much of the BCPS growth.

FX-denominated loans have also had a relevant role to play in the countries analysed in this paper. However, the development of the share of such loans in the total outstanding loan volume was remarkably different in the three countries, as evidenced in the chart below.

Chart 2.3: **Share of Foreign-Currency Lending in the CE-3**



Source: EBRD

It must be noted that data on the development of FX-lending is scarce. As a matter of fact, it was not until the late nineties (and later yet for Hungary), with the reorganization of the banking sector, that data on the share of FX lending became available for most CEE countries. By this time, levels of credit denominated in foreign currency were already relatively substantial.

The rationale for FX lending during the first decade of transition was mainly rooted on the supply side – and safe for proactive choices of individual banks[7] to refrain from lending in foreign currency to household borrowers, supply has remained highly elastic and accommodating to demand.

At the outset, in light of the uncertainties around local currencies, denominating loans in US dollars or German marks was a much safer bet from the lenders' perspective. Credit risk (*i.e.* the risk that the borrower would not be able to meet its obligations in foreign currencies in the then likely case of depreciation) was properly mitigated by the choice of borrowers: most of them were relatively large companies, either engaged in exporting activities (which served as a natural hedge to the loans) or sophisticated enough to put derivative instruments in place to cover their exposures.

Another factor supporting the share of credit denominated in FX has been the banks' source of funding: most of them can borrow at better conditions abroad (in the case of foreign-owned banks, directly from the parent), and lending domestically in foreign currency at foreign rates allows them to match their own FX exposures.

From the demand-side perspective, the main appeal of foreign-currency denominated loans since the early years was their cost: as country risk and inflation targeting monetary policies (see *Section 3.1.1* below) called for high domestic interest rates, the differential between local and foreign rates was significant, making FX borrowing attractive to both companies and households.

At the same token, because banks were losing corporate customers in the lending business to intercompany loans, their marketing efforts were shifted to the household sector.

Moreover, as the need for other financial services such as insurance, savings and pension plans crystallised amongst the household habits, banks engaged in a fierce competition for the household clientele, and FX-lending was often the bait to treat customers.

[7] Such as Pekao bank in Poland. See Fitch (2006).

2.4. Identifying the FX lending boom drivers for the CE-3

(a) ***currency stability***

Intuitively, it could be assumed that the stability of the local currency vis-à-vis the foreign currency in which the loans are denominated would impact the borrowers' willingness to take on such debt – especially in the cases in which the borrowers' incomes are denominated in local currency, as it is the case for most households.

Surprisingly, however, no correlation was found between stability of local currency and the development of the share of FX lending for any of the three countries.

It must be noted, however, that the local currency of each of the Czech Republic, Hungary and Poland has remained relatively stable throughout the period studied. In Hungary's case, the Central Bank's commitment to a currency peg may have given borrowers enough confidence in the forint against the euro and the Swiss francs – and hence in their ability to meet repayments of foreign currency loans.

(b) ***Interest rate differential***

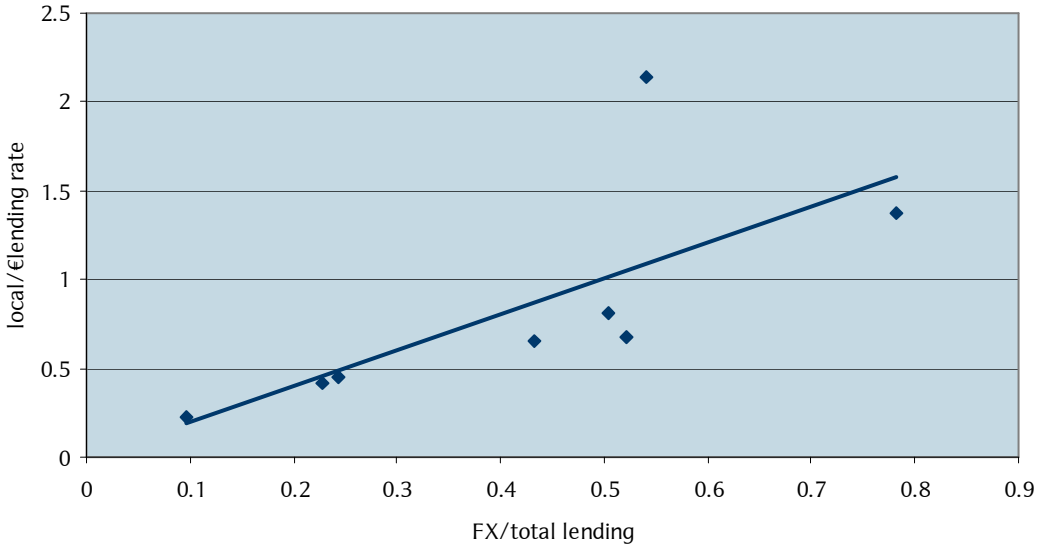
Expert analysis[8] and common sense[9] point to the difference between local and foreign interest rates (i.e., the cheaper cost of borrowing) as the single most important factor behind the growth in FX lending.

A cross-sectional analysis with 2005 data for EE countries for which FX lending data was relevant seems to confirm this hypothesis:

[8] See Standard&Poor's (2006a)

[9] As evidenced in a series of informal interviews carried out by the author with individual residents of Hungary and Poland, where FX borrowing by individuals and households is more significant.

Chart 2.4 (b1): **Correlation of Interest Rate Differentials against €rates and share of FX lending, EE countries**



Source: EBRD
Note: Correlation ratio of 70%; R^2 of 50%.

The explanatory power of interest rate differentials, however, loses strength when it comes to understanding the development of the share of FX over time for the CE-3.

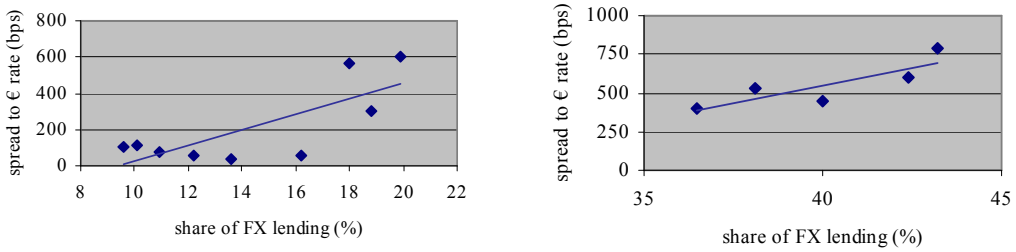
The correlation is strong in Hungary (R^2 =0.9) only if data for 2005 is excluded. It is remarkable how, in that year, in spite of a sharp decrease in spread (from 790 to 380 basis points), the share of FX lending maintained its accelerating rate, increasing from 43.2 percent to 50.5 percent. It is estimated that by March 2006, the share of FX-linked amongst outstanding bank loans had reached 53 percent[10].

In the Czech Republic, in turn, the relationship is more significant, as the high shares of FX lending in the 90ies (mainly to corporate borrowers) correspond to periods of high domestic interest rates. The strong depreciation of the local currency in 1997 kept both borrowers and lenders away from FX-denominated products. Subsequently, local interest rates followed a downward trajectory – and consequently, so did the share of FX loans. The correlation between interest rate differentials, and share of FX lending, however, has been losing strength (as implied in the relatively low R^2 of 0.6): although the record low interest rates in the eurozone

[10] Source: IMF (2006b)

caused spreads between local and euro rates to widen in recent years (to a range of 35 to 115 basis points), local rates were low enough not to trigger shifts to FX loans, and to attract an increasing number of households to the loan market. The share of loans denominated in local currency, therefore, continued on the rise.

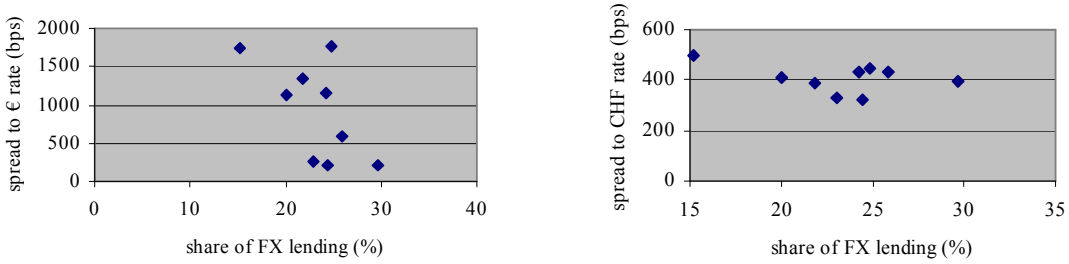
Chart 2.4 (b3): **Correlation of Interest Rate Differentials against €rates and share of FX lending, Czech Republic (left) and Hungary (right)**



Source: IFS and EBRD

In Poland, spreads in local rates to both euro and Swiss rates fail to explain the growth in FX lending: although spreads followed a predominantly decreasing trend, after a short period of contraction, the share of foreign-currency denominated loans picked up again after 2002.

Chart 2.4 (b4): **Correlation of Interest Rate Differentials against foreign rates (€, left; and CHF, right) and share of FX lending in Poland**

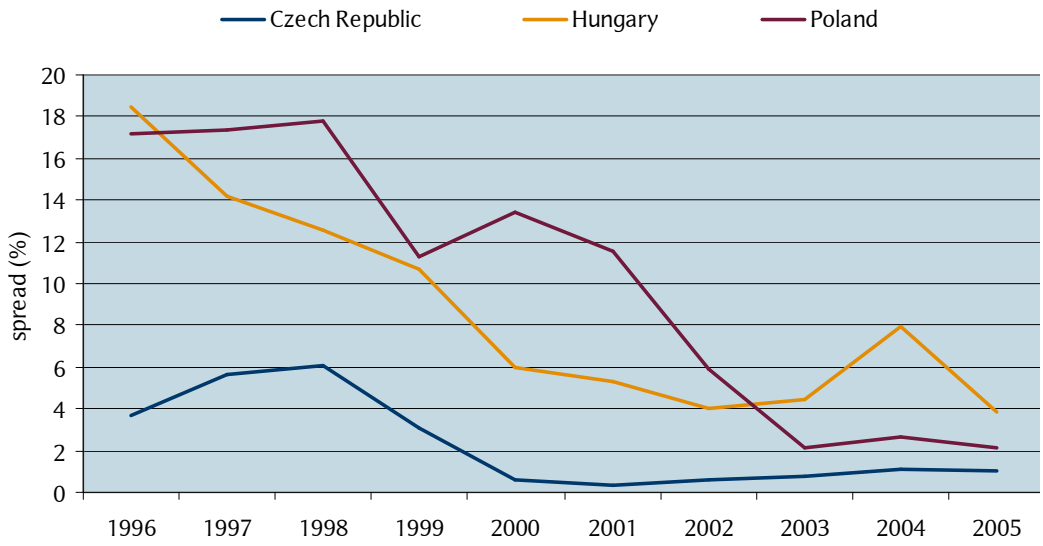


Source: IFS and EBRD

Both Poland and Hungary had experienced a sharp decrease in interest rate differentials by 2005, as a result of stabilizing inflation levels. The share of FX lending carried on growing nevertheless. Preliminary figures for 2006 for Poland indicate that FX lending levels are about to reach 30 percent[11], up for 24.4 percent in 2005).

[11] IMF Article VI consultation, 2006.

Chart 2.4 (b5): **Evolution of Local Lending Rate Spreads over Euro Lending Rates**



Source: IFS

(c) ***borrower profile***

The increased participation of households in the loan market highlighted in the previous section was the main responsible for the renewed demand for FX loans in both countries. As Polish and Hungarian banks diversified their portfolio away from the deleveraging corporate sector, they began to offer the FX-denominated alternative to households.

Although FX lending to households and SMEs is much riskier than it is to corporations (for the former two lack both the matching revenues in foreign currency as a natural hedge on the one hand and the scale and sophistication to engage in derivatives transactions on the other hand), the response of households and SMEs to the offering led banks to embrace the business as they competed for market share in these segments[12].

Albeit smaller than they may have been for Polish corporations in the past, interest rate differentials between these loans and those denominated in local currency were significant enough to trigger the shift. In the mortgage segment, *e.g.*, the differential between dollar and zloty denominated loans was circa 7 percent per annum in 2002.

[12] The success of FX-lending initiatives by some of the Polish banks gave rise to a similar offering by the competition. The monopolistic competition banking environment in most of the CEEs (see Fries *et al* (2006) implied that soon FX lending became the rule in the household segment. The same trend was observed in Hungary.

Although ignorance of the risks involved has been claimed to be affecting households' decisions when borrowing in foreign currency, optimism may also have a role to play. It is possible that the UE accession in 2004 has triggered expectations of currency stability leading to the upcoming adoption of the euro, and therefore to the risks involved in borrowing in a foreign currency being underestimated.

*(d) s**upply-side drivers***

In general terms, banks in Poland and Hungary have been rather accommodating to the growing demand of credit denominated in foreign currency. Still, two main factors can be identified in determining the willingness of banks to cater to such demand:

(i) a sizeable share of foreign liabilities (FX lending can therefore be seen as a natural currency hedge); and

(ii) competition

2.5. Establishing the links

In light of the considerations above, we have analysed the development of the share of FX lending over time[13] for each of the three countries as a function of:

(i) interest rate differentials (as a percentage of the prevailing average euro lending rate);

(ii) absolute average euro lending rate (to take into account that borrowers are sensitive to decreasing rates, regardless of the differential vis-à-vis local rates);

(iii) the share of household borrowing within the FX-loan universe;

(iv) share of foreign liabilities in the banking sector; and

(v) number of foreign banks[14], as a proxy for competition in the industry[15].

[13] First-differences as a percentage of initial share were used to address stationarity issues.

[14] Given the idiosyncrasies of the Czech case (a decreasing rather than increasing share of FX loans), the total number of banks was used instead. The wide availability of FX-loans was not a competition phenomenon in the country, but rather a result of extremely loose lending, which was correlated with a large number of poorly performing banks as incumbents at the inception of transition, and the use of the proxy is therefore also pertinent.

The very small sample sizes for the individual countries made the regression exercise futile: although equation R^2s were often high, the use of five variables in a 5-6 year period analysed reduces the degrees of freedom to suboptimal levels, and observed t values were often higher than critical t values. We chose, therefore, to instead highlight, for each country, the relationship between each candidate explanatory variable and the first-difference of share of FX in total loans as follows:

Table2.5: **Correlation between Selected Variables and Share of FX Lending in the CE-3**

	Czech Republic		Hungary		Poland	
	Pearson	R^2	Pearson	R^2	Pearson	R^2
interest rate differential	0.94	0.88	0.31	0.1	0.48	0.23
€ lending rates	0.02	0	-0.97	0.94	0.54	0.29
share of household borrowing	0.35	0.12	0.79	0.62	-0.23	0.05
share of foreign liabilities in bank sector	0.37	0.13	0.89	0.8	-0.55	0.31
number of (foreign) banks	0.62	0.39	-0.75	0.55	-0.53	0.28

Although the heterogeneity of the results may seem confusing at first sight, it actually sheds light on the different FX-lending paths in each of the countries:

(i) ***The Czech Republic***

Among the countries analysed, the Czech Republic was the only one in which the intuitive assumption that decreasing interest rate differentials would prompt a drop in the share of FX lending was clearly confirmed. The Pearson correlation has the expected sign and a high value, and the R-squared value is also high.

Correlation with changes in euro interest rate can be dismissed, and the relation with both (a) the share of household segment in FX-borrowing and (b) foreign liabilities in the banking sector is relatively small.

Correlation with number of banks again has some significance, reinforcing our hypothesis that the dispersed, poorly regulated banking environment and consequently lax lending practices

[15] Foreign-owned banks have been notoriously more efficient in the EE. A large number of foreign-owned banks in a country indicates that banks are in a "second stage" of growth, trying to increase their profits by gaining market share and share of wallet rather than improving their margins through efficiency gains.

prevailing at the inception of transition were conducive to the prompt availability of lower-cost FX-denominated loans – with a blind eye turned to the risks associated to them.

(ii) ***Hungary***

For Hungary, interest rate differentials have no significant explanatory power – rather, it is the absolute foreign interest rate itself that motivates borrowers to take on debt denominated in foreign currency. Pearson correlation and R-squared are very strong in confirmation of this hypothesis.

The participation of households in the FX-borrowing bonanza also has a strong explanatory power, as does the share of foreign liabilities in the banking sector.

The number of foreign-owned banks, however, weakens the competition argument and reveals another side of foreign-ownership in banking: foreign-owned banks often take more prudential approaches to lending practices, therefore explaining the negative correlation between number of foreign-owned banks and the share of FX-lending.

(iii) ***Poland***

Poland is the most intriguing case amongst the countries analysed. No single variable provides sufficient explanation to the trend of FX-lending observed in the country. Interest rate differentials do have some weight (albeit at a rather low R-squared), and the sign of the relation with euro lending rates is counterintuitive, suggesting that the levels of FX-lending decreased as lending rates got lower (also with a relatively low R-squared, though).

Relationship with the share of households in FX-lending can practically be dismissed.

The higher share of foreign liabilities in the banking sector (the variable with the strongest R-squared for the FX-lending practices in the country) actually had a negative impact on FX-lending, as did the number of foreign banks (again indicating the more prudential stance of foreign-owned banks).

In the Polish case, therefore, the proactive decision of individual, foreign-owned large banks to refrain from widely lending in foreign currency seems to have had a defining role in the FX-lending trend, making the share of FX-lending less of a dependent variable in the country.

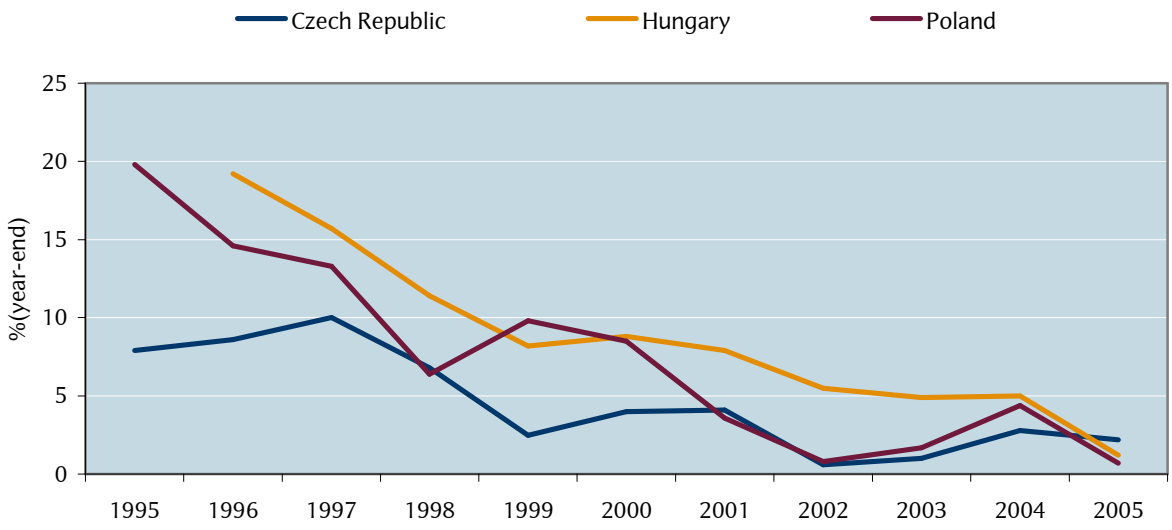
In summary, whether at decreasing (as for the Czech Republic), increasing (in Hungary) or erratic (Poland) paths, the share of FX-lending in the CE-3 has been significant in the availability of credit for the local private sector.

3. Credit growth and price stability

In this section, we examine the potential spill-overs of credit growth deepening in the context of price stabilization.

As the transition process approaches completion, price stabilization can be identified as one of the main economic achievements in the CE-3 countries. As mentioned before, inflation rates in all three countries have stabilised at considerably low levels, as per the illustration below:

Chart 3: **Evolution of Inflation Rates in the CE-3**



Source: Bloomberg

Graduation from transition, however, will not preclude the CE-3 from undergoing the extremes of economic cycles, and the ability to tackle the threat of inflation when it occurs should remain high up on the agenda of the three countries.

3.1. The theory

3.1.1 Credit growth and inflation

In a context of inflationary pressure, a continued growth in credit volumes could be inappropriate. As postulated by the Quantity Theory of Money[16], money supply determines the nominal value of output, and growth in credit levels (absent an output gap buffer) could put upward pressure on prices.

In open economies such as the accession countries, prices of tradables are mainly determined by international markets. In a context of stable exchange rates, therefore, an increase in liquidity should not have an immediate impact in the price of tradables – it would nevertheless probably fuel imports of such tradables, putting pressure on the balance of payments and on the real exchange rate. In free-float regimes, the nominal exchange rate will eventually be impacted, and local price levels (as translated into local currency) will follow.

At the same time, the increased liquidity would prompt inflationary pressure in salaries and non-tradable sectors, and price bubbles for certain assets such as real estate are prone to form[17].

In summary, *ceteris paribus*, an increase in the supply of credit is likely to put upward pressure on prices, therefore posing a threat to price stability.

3.1.2. Monetary policy remedies

Alongside low unemployment and economic growth, price stability is one of the guiding goals of monetary policy. Whilst price stability itself is generally identified as the ultimate target and *raison d'être* of monetary policy, it may conflict with (and therefore must be pondered against)

[16] See Mankiw (2003), citing Milton Friedman: "Inflation is always and everywhere a monetary phenomenom".

[17] See Bernanke. Asset price bubbles should only be addressed by monetary authorities if they trigger general heating of aggregate demand – mainly as a result of the wealth effect. Without the intention to solve the debate on whether or not house price bubbles should be tackled with increases in interest rate, it must be noted that household consumption spending is believed to be driven by disposable lifetime wealth – and because property is part of this wealth, a rise in housing prices boosts wealth, and thus foments consumption spending.

the other two economic goals mentioned[18], and a more holistic approach is therefore required from monetary authorities.

The domain of monetary authorities, however, is restricted to two factors whose direct impact is on price stability alone, namely, money supply and interest rates. If interest rates are understood as a measurement of money supply scarcity[19], the intrinsic and direct relationship between the two factors implies that monetary authorities will choose to act upon either (but not directly on both). Central banks, therefore, will either take as intermediary targets the aggregate money levels (M1, M2, M3); or lending rates (as reflected in government bond yields or interbank lending rates).

The intended ultimate response of economic variables (inflation, output and its components) to a monetary policy shock (*i.e.* a change in interest rate) will depend on the combined effect of three channels of monetary policy transmission: the interest rate channel, the exchange rate channel and the credit channel.

The **interest channel** refers to the immediate and direct effect on consumption and investment upon a change in interest rate (and to the impact on prices as demand for assets, goods and services falls)[20].

This effect can be amplified by the two other channels. The **exchange rate channel** can occur as a result of the impact of foreign capital inflows to/outflows from to the country as a response to the higher/lower nominal fixed returns on money invested in an open economy. An increase in capital inflows due to higher interest rates in a floating exchange rate system, therefore, will lead to an appreciation of local currency. As a result, the country's exports will lose competitiveness, and aggregate demand will be suppressed – and the tightening monetary policy will have reached the desired outcome.

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[18] Restrictive monetary policies targeted at controlling price levels, e.g., can often lead to a retraction in investments and consequently in employment and economic growth.

[19] The more scarce the money supply, the more will lenders require to be compensated to give up their own availabilities, and the more will borrowers be willing to pay to have access to it. The interest rate corresponds to the cost of lending and borrowing.

[20] As discussed before, higher interest rates imply higher borrowing costs and savings returns, which cause firms and households to delay financing (and hence pursuing) investments and consumption and/or to redirect their liquid funds available to interest-paying applications.

Finally, the **credit channel** operates through the impact of interest rates on credit supply: higher interest rates would normally increase banks' cost of borrowing, and hence (i) depress their willingness to lend (ultimately resulting in lower credit volume); and (ii) translate into higher cost for final borrowers (the interest rate pass-through).

3.2. The practice in the CE-3

As new EU member states, the Czech Republic, Hungary and Poland have explicitly committed to the monetary policy goal of price stability[21] . The commitment of these countries to the use of monetary policy targets to attain this goal (in line with the current EU approach), however, is not so clear.

In fairness, the CE-3's experience with monetary policy targets is rather recent. Like most post-socialist regimes, the three countries adopted fixed exchange rate systems as a nominal anchor for price stabilisation purposes. Although the system was indeed effective in significantly reducing inflation levels, the inflow of foreign capital that marked the inception of transition soon resulted in a real exchange rate appreciation and consequently in a significant loss of competitiveness[22].

In order to restore the competitiveness of their exports, the three countries opted for a double shift in their monetary policy framework during the period 1993-2003. Firstly, they gradually moved from fixed to more flexible exchange rate regime to regain competitiveness.

The Czech Republic had introduced a currency peg in 1991, but abandoned it in 1997, after a series of speculative attacks. Poland also started off adopting a currency peg in 1990. By 1991 the system had been relaxed into a crawling peg regime and, by 1995, to a crawling band

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[21] As signatories of the Maastricht Treaty, the CE-3 are subject to the Conversion Criteria. For price stability, the rule is that "the average rate of consumer price inflation over the previous 12 months must not exceed by more than 1.5 percentage points that of, at most, the three best performing member states and this performance should be sustainable". These rules are applicable to all member states (even non-EMU), but on different terms: countries in the convergence programme, such as the CE-3, are not subject to penalties, but rather to recommendations – and are, in any case subject to strict scrutiny.

[22] Moreover, a regime of fixed or semi-fixed exchange rates can be undesirable in that it implies a discrepancy between the official and the real exchange rates, and leaves room for abrupt market-led corrections or speculative attacks, as those experience by both developed (United Kingdom, Sweden in 1992) and developing (Mexico in 1994, Thailand, South Korea and Indonesia in 1997, Argentina in 2000, *inter alia*) countries.

system with wide bands. The bands were further widened until 2000, when the system finally gave way to a free float.

Hungary adopted a crawling band in March 1995 and the fluctuation band has been gradually yet significantly widened since. Currently the forint is allowed to fluctuate against the euro with some flexibility (over the past two years, a 6 percent band) around a central parity.

Parallel to the move to flexible exchange rates, all three countries adopted a regime of monetary policy targets[23] – money supply at first, and subsequently inflation targets – to address price stability.

In practice, however, commitment to these regimes is less straight-forward, especially in Hungary's case. Because the country (as opposed to both the Czech Republic and Poland) has not adopted a free-floating system, it has been severely criticised by international authorities and analysts. According to Standard & Poor's (2006b), "the perceived willingness of the central bank to support the exchange rate is in conflict with its declared inflation-targeting regime".

Much as a result of the relatively week commitment to inflation targeting (and of the reminiscences of fixed exchange rate regimes), current consensus[24] is that the exchange rate channel is by far the main channel of monetary policy transmission in Eastern European countries[25].

A number of empirical studies have assessed the effectiveness of the credit channel in the CE-3, with mixed results.

As far as the response **of credit levels to monetary policy shocks** is concerned, Horvath *et al* (2006) find evidence that an interest rate increase results in a decline of loans in domestic currency in Hungary. However, much of the literature on the response of credit levels to changes in the monetary policy rates in the CE-3 indicates that the effect of such shifts in

[23] A Bank Act instated the inflation target regime in Hungary in July 2001. National Bank of Poland defined monetary targets until 1997, and in 1998 started defining inflation targets.
[24] See Creel and Levasseur (2005).
[25] In contrast with mature markets such as the US, the UK and EMU countries, where the interest rate channel dominates.

interest rates have been muted by other factors influencing credit growth[26] (as discussed *Section 2* above).

Reviewing literature on the subject, Coricelli et al (2006) identify "Trojan horses" affecting banks in their role in the credit channel, and emphasises internal capital markets (i.e., parent bank funding); highly capitalised banking systems; high degree of concentration in the banking sector; maturity structure of loans; relationship banking; government's involvement in the banking sector. Another often mentioned factor is excess liquidity in the banking sectors of the CEE countries - among the CE-3, this factor is more relevant in Hungary and Poland, whereas the Czech central bank keeps higher control of bank liquidity.

The prompt availability of funds to banks implies that, rather than representing an increased cost of bank funding, higher policy rates are actually interpreted as a marginal return on lending, and therefore provide an incentive for banks to increase credit supply[27].

Another strand of literature[28] is based on bank-level data for CEE/CE-3, looks for evidence that certain bank characteristics (namely size, liquidity, capitalization, ownership structure and cost of funds) help determine how banks respond to monetary shocks. Results vary significantly across the studies and are not conclusive.

In spite of the broadly mixed conclusions, there seems to be a certain consensus that both liquidity and strong capitalization have a dilutive impact on banks' reaction to monetary policy tightening (in line with the correlation between these characteristics and growth in BCPS discussed in *Section 2.1*).

On the other hand, foreign-owned banks seem to have a more pronounced reaction to changes in monetary policy (in contrast with the discussion mentioned, but in line with the more prudent stance to market and credit risks which often characterizes foreign-owned banks).

Finally, foreign currency-denominated loans, especially to households, are also found to be insensitive to monetary policy actions[29], as discussed in *Section 3.3* below.

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[26] Crespo-Cuaresma (2006)
[27] See MNB (2006/7) and Creel and Levasseur (2006).
[28] Horvath et al (2005); Schmitz (2004); Juks (2004); Kohler et al (2005)
[29] Horvath et al (2005), Coricelli et al (2006).

Overall, econometric analyses of reactions to monetary policy shocks indicate that the predictability of bank behaviour is extremely limited, and regression analyses show a series of often counterintuitive results: Creel and Levasseur (2005) find a raise rather than a fall in credit levels after an increase in interest rate for the Czech Republic and Hungary. For Poland, after an initial decrease, credit recovers. Wrobel (2001), however, shows that an increase in short-term interest rates in Poland does cause real credit to drop in the short run and to stabilize at a lower level afterwards.

The weakness of the bank channel suggested by econometric studies is further supported by specific events in which traditional monetary policy instruments failed to filter through to the real economy via the credit channel, having thus proved highly ineffective.

Poland's case provides powerful examples: in the country's first wave of credit expansion (1996/97), real interest rates in excess of 10 percent and required reserves of 20 percent were not enough to curtail the growth. In the second surge of lending in the country (1999/2000), growth in lending caused growth in demand, which in turn triggered high levels of inflation and a current account deficit in excess of 8 percent of GDP.

Although real interest rates went as high as 15 percent to address the growth in credit, the National Bank of Poland had to appeal to more drastic measures, directly offering six- and nine-month term deposits to individuals with interest rates higher than market. Banks were therefore forced to offer higher interest on deposits – and to offset that by charging higher interest on loans, which ultimately reduced the growth in lending, with significant losses to the bank system.

The response of credit levels therefore, cannot be assumed to be consistent with monetary policy shocks in the CE-3 based o the countries' recent past.

We now proceed to analyse the **effect of monetary policy shocks on interest rate pass-through**.

Much of literature covering pass-through in the CE-3 is reviewed by Crespo-Cuaresma et al (2006). The table below summarises the findings of the research papers reviewed, showing the

level of pass-through encountered per type of loan for each country, where 100% represents a complete transmission of changes in monetary policy rates to loan rates.

Table3.2: **Literature Review of Interest Rate Pass-through in the CE-3**

		short-term loans		
country	**Type of loan**	**Author**	**time period**	**pass-through**
CZ	ALL	T(2004)	1995:1-2004:2	76%
C	ALL,NEW	T(2004)	1995:1-2004:2	104%
CZ	ALL,<1Y	CER(2004)	1994:1-2002-12	76%
CZ	COR	SK(2004)	2001:1-2003:12	95%
HU	ALL	T(2004)	1995:1-2004:2	109%
HU	COR	SK(2004)	1995:1-2003:12	101%
HU	COR,<1	CER(2004)	1994/1997-2002-12	101%
PL	COR,1Y	CER(2004)	1994:1-2002-12	102%
PL	COR,1Y	WP(2002)	1995-2002	103%
		longer-term loans		
CZ	ALL	T(2004)	1995:1-2004:2	65%
CZ	ALL,NEW	T(2004)	1995:1-2004:2	83%
CZ	ALL,1Y-4Y	CER(2004)	1994:1-2002-12	64%
HU	ALL	T(2004)	1995:1-2004:2	67%
HU	COR	SK(2004)	1995:1-2003:12	111%
HU	COR	HKN(2004)	2001:1-2004:1	98%
HU	COR,panel	HKN(2004)	2001:1-2004:1	95%
HU	COR>1Y	CER(2004)	1994/1997-2002-12	102%
PL	ALL	T(2004)	1995:1-2004:2	85%
PL	COR	SK(2004)	1996:12-2003:12	99%
PL	COR 3Y	CER(2004)	1994:1-2002-12	98%
		consumer loans		
CZ		Kot(2004)	1996:1-2004:1	42%
CZ		SK(2004)	1993:1-2003:12	26%
HU		Kot(2004)	1998:1-2004:4	36%
HU		SK(2004)	1995:1-2003:12	51%
HU		HKN(2004)	2001:1-2004:1	81%
PL		Kot(2004)	1997:1-2004:4	59%
PL		WP(2002)	1997-2002	85%
PL		SK(2004)	1996-12:2003:12	60%

Source: Crespo-Cuaresma et al (2004) for more details on individual papers.

The results show that pass-through is very robust in the CE-3 (albeit less so for consumer loans). However, Crespo-Cuaresma *et al*'s own results[30] show much weaker evidence of pass-through, especially to household loans. It finds that pass-through for corporate lending rates in the majority of Central and Eastern European countries (especially the Czech Republic) is

[30] The stronger relevance of their study lies in that, as opposed to the other papers mentioned, it checks the existence of valid cointegration relationships, and their data sample covers more recent periods (possibly indicating a decrease in pass-through over time)

nearly complete, but much less so for loans to households. Moreover, the study shows that pass-through to lending rates has been declining over time in Hungary and Poland, and no significant relationship at all was found between monetary policy rates and household loan rates in the Czech Republic and new housing loan rates in Hungary.

3.3. FX lending – a threat to monetary policy goals?

In monetary policy regimes guided by inflation targeting, the main tool available to the authorities is the interest rate. One of the conduits for the interest rate to affect aggregate demand and ultimately, inflation, is the credit channel: as higher interest rates translate into higher costs of borrowing, demand for credit decreases and so do overall levels of credit and monetary base.

One of the issues we intended to address in this study is the hypothesis that an increasing proportion of lending denominated in foreign currency in the bank loan market of Hungary and Poland could lead to a potential weakening of the credit channel by allowing a bypass of the monetary policy rates.

The hypothesis was based on the premise that the effectiveness of the credit channel could be negatively affected by high levels of foreign currency lending for the following reasons:

(a) ***substitution effect***:

If borrowers have the option to switch to a different – and cheaper – borrowing cost base, however, the tightening monetary policy tactics will not have the desired effect.

As discussed in the previous section, volumes of FX lending have indeed increased in the CE-3 (most notably in Hungary and Poland) when the interest rate differential between local and foreign interest rates increases.

(b) ***wealth effect***:

FX-denominated loans present an additional risk to tightening monetary policies in a context of appreciation of local currency (such as experienced by the CE-3 in recent/current years): if the local currency appreciates, payment of interest and repayment of principal will require a

smaller proportion of the borrower's income in local currency[31]. As a consequence, disposable income increases, amplifying the effects of credit expansion.

The analysis suggests, however, that the weakening effect of FX-lending on the credit channel may be irrelevant in light of the prevalence of the exchange channel in the transmission of monetary policy measures as discussed in *Section 3.2*.

The rapid transition to open economy – and more recently, with the accession to the EU, the free transit of goods, labour and capital - can be partly to blame for the prevalence of the exchange rate channel.

With the free trade in the EU, prices of tradables are set the European market rather than by local supply and demand[32] . At the same token, local aggregate demand has not been putting pressure on labour costs. Although the local "labour slack" is actually diminishing, migration is providing a continuous supply of incremental labour at stable costs.

Finally, the easy access to foreign capital by a significant share of the productive sector (especially the multinational firms) has decreased its reliance on the local banking system.

The credit channel is therefore weakened not only because it does not always respond to monetary shocks with changes in credit availability and lending/savings rates.

Therefore, both due to its still weak penetration in production and consumption financing, and to its often counterintuitive reactions to monetary shocks (as explored in *Section 3.2*), the local banking sectors have contributed to a weak credit channel.

Although FX lending may already be playing a role in weakening the credit channel, the issue of high levels of FX lending in CEE (and in Hungary and Poland for the purposes of this study) is not deemed a present threat due to the very fact that the credit channel itself is not currently perceived as essential to the implementation of monetary policy.

[31] Consistent with the wealth effect described in the previous note.

[32] Coricelli et al (2006) point out that the credit channel may indeed be more important for the non-tradable sector

However, the ongoing financial deepening phenomenon indicates the potential for the credit channel to gain importance, especially with respect to impact of monetary policy on household borrowing, and consequently on consumer and housing prices[33].

For Hungary and Poland, for as long as the countries retain their local currencies (rather than joining the EMU), a deepening in bank credit to the private sector in a highly FX-denominated loan base could have the following implications under different **extreme currency rate scenarios**:

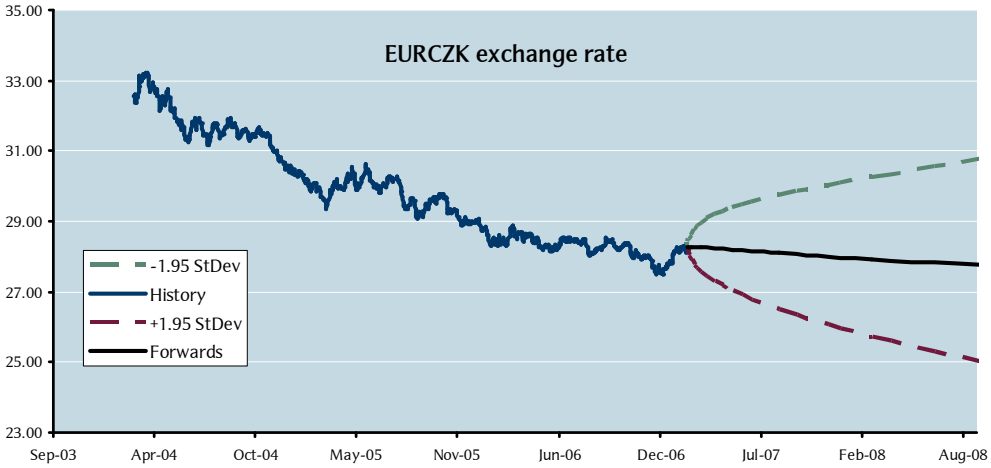
A) Strengthening of local currency: a strengthening of the forint or of the zloty would imply that Hungarian and Polish borrowers (respectively) with outstanding loans denominated in Euros, Swiss Francs or Dollars would need to apply a smaller share of their income into the repayment of their loans. The resulting incremental disposable income may trigger an increase in aggregate demand. Under these circumstances, however, the strengthening of the currency itself is likely to be enough to counteract potential inflationary pressure on tradables. Non-tradables and real estate prices, on the other hand, are likely to be objects of price bubbles.

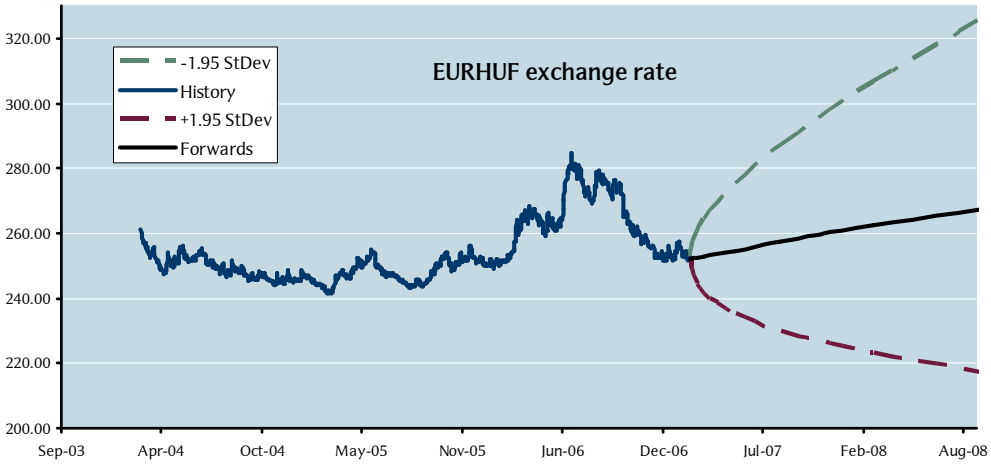
B) Weakening of local currency: in the context of weakening local currencies, relevant Central Banks are likely to increase local interest rates in order to attract foreign currency, thereby restoring the value of the local currency to levels deemed appropriate. From the bank lending perspective, this contractionary policy would be further hardened by the fact that FX-borrowers would have to apply more of their income in the repayment of loans in a depreciation context, and the effect on local aggregate demand may be excessive.

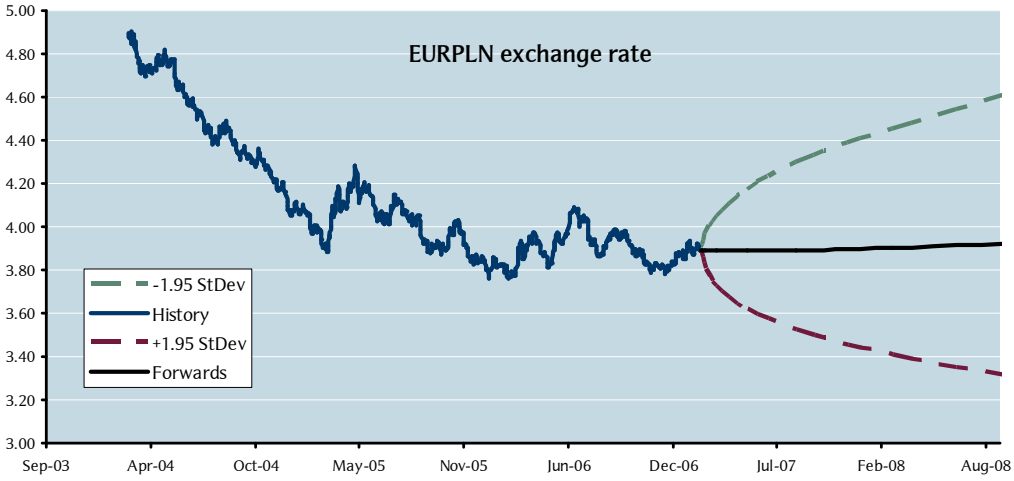
Although the exchange rates in the three countries have been relatively stable, the possibility of crises can not be dismissed. The blip experienced by Hungary in 2006 is a good reminder of the risks. Overall, the past and forward volatility don't seem to present significant risks for any of the countries.

[33] See note 12 on the wealth effect.

Charts 3.3: Past Performance and Market Expectations of the Czech Koruna, the Hungarian Forint and the Polish Zloty against the Euro







Given the progressive strengthening of monetary institutions, it is fair to assume that monetary policy authorities would then respond with the imposition of limits to FX lending – the impact of which, however, would be limited to new loans).

Expectations of joining the EMU (and therefore of having monetary policy dictated by the ECB) may have limited central authorities' willingness to think long term in anticipation of the role of credit in affecting aggregate demand, especially in light of the current (relatively) benign stability environment. Extensions in the timeframe for EMU accession, however, suggest the convenience of tackling these issues sooner rather than later, for later could be too late to stick to EMU plans.

In summary, although a more cautionary stance would be advisable to prevent an eventual mismatch between a tighter monetary policy and an unduly benign credit environment[34], current levels of FX-lending cannot be seen as a threat to price stability at present.

In turn, the impact of a growing FX lending trend on the stability of the banking system are understood to be more clear and present, as discussed in the following section.

4. Credit growth and bank system stability

4.1 Defining the risks

Banking sectors in the CE-3 have undergone significant transformation since the inception of transition, including a complete overhaul of the regulatory framework, bank consolidation schemes and sweeping privatization - mainly to foreign owners. Consequently, the governance of banks has improved to a great extent, and the performance and health of banking sectors

[34] It can be argued that the risk of misalignment between bank rates and price levels which may face accession countries with large shares of loans denominated in foreign currency is no worse than that met by some of the current EMU such as Ireland, Portugal, Spain and Greece. In these countries, inflation levels would call for interest rates higher than those determined by the ECB in recent periods (whose duty is to respond to price levels as the affect the majority of the EMU members). However, it must be borne in mind that it is precisely the ability to maintain economic stability what separates accession countries from current EMU members, and the risks to the former are indeed more pressing.

have advanced substantially, as demonstrated by standard prudential indicators on capitalization, asset quality, profitability and liquidity[35].

Most prudential/health measures put in place by banks and other financial institutions (either voluntarily or by imposition of regulatory authorities) address certain risks that could not only affect the probability and even solvency of an individual institution, but also spread to others, therefore impacting the entire system.

The major risks facing financial institutions can be roughly classified as market risks and credit risks. Market risks refer to the conditions extrinsic to banks' counterparties, such as changes in inflation, exchange and interest rates. Credit risks, in turn, refer to the banks' counterparties' abilities to perform and comply with their obligations[36].

On the market risk front, FX lending will imply a direct exposure for banks if the assets (*i.e.* the loans) are not matched by liabilities denominated in the same currency, and subject to the same interest rates. For most banks in the CE-3 the exposure to this kind of risk is actually rather limited. Firstly, the bank sector is dominated by relatively large banks, most of which foreign-owned, which either or both: (i) can get funding abroad (often from the parent institutions), thus incurring liabilities in foreign currency at foreign interest rates; or/and (ii) are sophisticated enough to hedge their (remaining) exposure with the use of derivative instruments or otherwise.

The main risk facing CE-3 banks engaged in FX lending, therefore, is credit-related[37], to the extent that changes in the foreign exchange rate can affect the borrower's ability to repay their loans. The risk is more limited if the borrowers are large companies, which will either be protected by a natural hedge if they are engaged in export operations, or be able to afford to hedge their exposures using derivatives. Small and medium enterprises ("SMEs") and

[35] See Fries *et al* (2006).

[36] Note that the two risks are interconnected, mainly in that counterparty risk can be affected by economic conditions or market risks.

[37] On the "pure" credit risk front (i.e, in the assessment of creditworthiness of borrowers irrespective of currency of loans), CE-3 banks are doing progressively well. Banks are using information collected by the Credit Information Bureau to large extents, and most of them have developed their own credit risk assessment systems, which have been used and perfected for several years now.

households, on the other hand, lack both the natural hedge of cashflows in foreign currency and the sophistication to overlay derivatives to their exposure.

Moreover, many households are unknowingly exposed to greater FX risk through an increase in the borrowing currency interest rates (when floating interest rates apply, as it is often the case) or an appreciation of the borrowing currency[38]. This in turn has the potential for greater household defaults, as retail customers might experience unexpected difficulties in meeting loan instalments.

The severity of the credit risks associated to foreign currency-denominated lending is a function of the size of the exposure (i.e., the volumes of FX lending), the nature of the borrowers and the volatility of the local currency vis-à-vis the currency in which the loans are denominated.

4.2 FX-lending related systemic risks in the CE-3

Based on the above-mentioned criteria, rating agencies have been looking at risks arising from FX-loans in their assessment of the banking sectors in the CEE. Standard & Poor's[39] *Banking System Foreign Currency Lending Risk Assessment in a Stress Scenario* finds that the risks are high for Hungary, medium for Poland and low for the Czech Republic, with medium and high risks implying stresses in asset quality and financial performance if the current buoyant economic and favourable interest and currency rate environments were to disappear.

S&P highlights that the materiality and magnitude of these risks are not great enough at this stage (accordingly, no rating actions in any of the banks reviewed by the agency in these countries were adopted). But a severe scenario of strong currency depreciation, or an economic recession, could change the picture dramatically.

Czech Republic

The relatively low (and declining) levels of FX lending in the Czech banking system are not at all alarming from a credit risk perspective. Moreover, the currency has been stable over recent years. Although the recent increases in lending volume to households are raising concerns over

[38] Standard & Poor's (2006a).
[39] *Ibidem.*

the health of the banking system, these loans are almost entirely denominated in local currency.

At year-end 2005, FX borrowing in the system was 10% of total loans, predominately to enterprises. Both enterprises and households in the Czech Republic have continually reduced their foreign currency borrowings[40].

According to the IMF' Financial System Stability Assessment (FSSA)[41], results of extensive stress tests carried out for market risk, credit risk, scenario analysis, indirect foreign exchange risk and contagion , suggest that the banking system is basically stable. Credit risk remains the most important source of risk for the Czech banking system, although a recent shift to interest rake risk has been found.

Incremental risks arising from FX-denominated loans are not a concern in the Czech Republic.

The results of the regression analysed in the previous section indicate that FX-denominated lending is not likely to increase vis-à-vis current differentials between euro and koruna rates – which actually turned negative by late 2006, as the koruna rates reached the lowest level in the entire European Union.

FX-lending does not, therefore, pose any risk to bank stability in the Czech Republic.

Poland

As discussed above, Polish banks generally have significant exposure to FX lending, particularly in Swiss francs. As the risks were first detected, banking authorities started giving enough attention to the issue and were preparing regulatory intervention to slow future FX lending growth rates (with the caveat that only the risks in newly disbursed loans would be addressed, and the potential problems in the existing loan portfolio would remain).

However, a recent restructuring of the regulatory authorities in the country (see *Box 5* below) is likely to jeopardise the early efforts to address the FX lending issue.

Still, many Polish banks are proactively abiding to a more prudential stance to FX lending. In fact, some of Poland's larger banks have simply avoided engaging in the FX lending business

[40] Standard & Poor's (2006a)
[41] IMF (2006)

altogether[42]. Much of the more aggressive bank lending activities and practices, however, occur through non-bank financial affiliates[43]. Overall, foreign currency lending is expected to continue its rise – current trends indicate an increase of about 5 percentage points a year[44].

The econometrical analysis carried out in *Section 2.5* suggests that the trend of decreasing spreads between local and foreign interest rates is unlikely to cause a decrease in the share of FX lending on its own.

If anything, only a proactively prudential approach by risk-conscious foreign-owned banks could curb the FX-lending spree. Although some banks are already adopting such approach, increasing competition amongst banks may tempt them to keep up the FX-lending practices.

Although the ratio of non-performing loans has been steady (at c. 2.5 percent, the share of loans in banks "watch list" has increased lately – and SMEs seem to bear most of the responsibility for the increase.

Officially, however, the risks are not alarming. The IMF's FSSA for Poland indicates strong resilience to shocks in Poland's banking system, although indirect exchange risks associated with foreign currency mortgage lending were flagged.

Hungary

Out of the countries surveyed by Standard & Poor's, Hungary is considered the one facing the most banking risk from FX lending practices – a result of the combination of the high degree of FX lending in banks' balance sheets and the potential for currency volatility given domestic political and economical issues.

The current economic environment has been extremely favourable to the loan market (especially in the household segment): good growth, expected decline in unemployment and increasing real wages boosted consumer confidence and increased consumption, housing subsidies supporting demand for mortgages, falling forint rates and Swiss franc and euro loan rates remaining low. As a result, the trend in FX lending accelerated in the past two years. At year-end 2005, 47.5 percent of all corporate lending and 30 percent of the household lending

[42] See example of bank Pekao mentioned previously.
[43] IMF Article VI Consultation, 2006
[44] Standard& Poor's (2006a).

were denominated in FX (the latter up from 5 percent in 2003). A high and increasing proportion of these loans are directed to the retail sector, whose financial knowledge is "highly unsophisticated"[45].

This scenario is in line with the results of the regressions discussed in *Section 2.5*. The high demand for FX-denominated loans by the household sector, triggered mainly by the very existence of a spread between local and foreign rates, is likely to continue – especially as the government cuts back on subsidised, local-currency housing loans.

According to Standard & Poor's (2006a), the magnitude of a financial crisis in Hungary, whether linked to fundamental issues or speculative/volatile moves from financial markets, would be amplified by the direct impact of currency devaluation in individuals with FX mortgage loans.

Forint volatility has been exacerbated in 2006 as a result of a deterioration of the government's capacity to remedy to fiscal imbalances.

The IMF's 2005 FSAP update and the authorities' April 2006 Financial Stability Report have both tried to estimate the default risk, but the magnitude is not known with any precision. Still, the banking sector at present would be able to withstand losses thanks to declining operating costs, strong profitability and a solid capital adequacy ratio at around 11 percent - but these buffers could prove insufficient depending on the extent to which a strong depreciation deteriorates borrowers' credit quality.

5. Concluding thoughts

In *Section 2*, we have investigated the growth of credit to the private sector in the CE-3, and the role that foreign-currency denominated loans had to play in the financial deepening process in these countries.

We conclude that the level of credit to GDP has developed hand-in-hand with the presence of FX-lending. The Czech Republic, an exception to the rule in the CEE (in that the BCPS ratio has actually decreased rather than increased over the past 10 years), is one of the very few

[45] Standard&Poor's (2006b).

countries to have gone through a drop in the share of FX in total lending. Both Hungary and Poland, in turn, have experienced a strong growth in BCPS – and an impressive, and sometimes alarming, growth in the share of FX lending.

We refer to the wide availability of loans denominated in foreign currency in Hungary and Poland as a "treat" to credit-takers in that it allowed many new borrowers, especially in the household sector, to have access to affordable financing to property, paid studies, and consumption in general.

In *Section 3* we explored the links between lending rates and inflation to assess whether a potential asymmetry between policy rates and FX-lending rates could have a negative/counteracting impact on a monetary policy system based on inflation targeting in the three countries.

We conclude that, at current BCPS ratios, the credit channel is too weak for the share of FX lending to have a significant impact on aggregate demand and spending. Moreover, the gap between local and foreign rates has been decreasing significantly, diminishing the risk of a strongly counteracting impact of the availability of FX-lending on policy rates.

However, while the "threat hypothesis" can be dismissed for the time being for all three countries, a strong change in the exchange rate (especially in the case of a depreciation), can have its impact potentialized the significant share of FX lending in Poland and, more significantly, in Hungary.

Finally, in section 4 we analyse the effects of FX lending on the stability of the banking system, considering the incremental credit risks incurred by banks when lending in foreign currency to local-currency earning borrowers.

Again, given the low levels of FX-lending, the Czech Republic cannot be considered under threat. The risks in Poland are more significant, but have been addressed both by proposals of regulatory measures and by proactive positioning by foreign-owned banks. In Hungary, however, the risks are more alarming, and remain largely unaddressed.

Box 5. Monetary and regulatory authorities' stance: signs of political risk?

To the extent that growing levels of FX lending may now or in the future represent risks to the transmission of monetary policy and/or the health of the banking systems, they are bound to be subject to increased scrutiny, and potentially to the imposition of limitations, by regulatory authorities.

The years of transition saw an impressive improvement in CE-3 regulatory authorities' willingness and ability to address risks to the good functioning of the banking system and to strengthen the system's role in the implementation of monetary policy.

As a result, "bad habits" such as soft budget constraints, governments' over-reliance on seignorage, monopolistic behaviour and excessive risk-taking gradually gave way to a more competitive, efficient and profitable banking system, which largely abides to capital adequacy and other prudential rules consistent with those observed in mature markets.

In the Czech Republic, the Central Bank has long been in charge of monetary policy and is highly regarded as an independent authority. The prudential supervisory framework, however, is undergoing significant changes – it was not until recently that the supervision of banking, insurance, and securities supervision was integrated under the Czech National Bank, and it has been suggested that ensuring that supervision remains proactive, risk-based, and forward-looking should be a priority for the Czech Republic[46].

Although the Czech Republic ranks well in a series of bank health measures[47], it is understood that there is room for refining prudential regulations further, for example, by differentiating provisioning or capital requirements across banks by the degree of risk they face, and encouraging best practices in stress testing by banks. No specific measures are needed in the FX lending front though, given the low share of foreign-currency denominated loans to the private sector in the Czech banking system.

Poland's Central Bank also ranks highly in the independence criterion as far as monetary policy is concerned. On the prudential/supervisory front, the NBP has a track record of solidity in its approach to systemic risk. Accordingly, it started to show signs of concern about the increasing levels of FX lending (especially with the increased proportion of retail FX indebtedness). A number of proactive measures were planned to counteract the mounting exposure to FX lending: the legal environment was to become more burdensome, with accrued information duties towards the customers, and risk management and control were also to become tighter,

[46] As per the IMF's Article VI consultation, November 2006: "Supervision of rapidly growing institutions and cooperation with foreign supervisors need to be strengthened."

[47] The Czech Republic has the lowest level (15-30%) of gross problematic assets (percentage of credit to the private sector in risk of default in a stress scenario) in Central Europe, together with Slovenia and Hungary (Standard & Poor's (2006b)).

with closer monitoring and imposed procedures. In order to tackle FX loans directly, the prudent treatment of FX mortgage loans was to become less favourable, with the imposition of caps on lending volumes, restrictive underwriting criteria and/or heavier risk-weighting.

Some measures began to be implemented: capital charges for housing loans were increased, and guidance to strengthen risk management practices and risk disclosure was issued.

However, much of the new regulatory framework has been put on hold as the regulatory authority itself undergoes changes, as a new law created a separate institution for the regulation and supervision of financial services in the country.

Such changes are giving rise to a heated debate on the independence of the regulatory authorities. The appointment of the new Financial Supervisory Commission is believed to be much more open to political interference than the Central Bank (as out of the commission's seven members, six are appointed by either the prime minister or the president[48]), and is meeting strong resistance from the IMF[49] and the European Union. The independence of the Commission, and its commitment to the European capital requirements directive, which forces European banks to adopt the new Basel II capital adequacy ratios, are being questioned[50]. If the fears are justified, the creation of new commission may dampen efforts to increased prudence controls mentioned above.

In Hungary, political interference is stronger in monetary policy. In 2004, the government enlarged the central bank's monetary council – a move widely seen as an effort to tone down the central bank's tightening policy towards interest rates. The hikes in interest rates have been justified - rather emphatically - by the central bank as necessary to prevent the depreciation of the forint (for which the government's overspending would be to blame). The government's interference then triggered a health warning for the European Central Bank to respect the independence of the Hungarian institution[51]. The Central Bank's continuing austere approach to interest rates (from June to October 2006, e.g., rates were increased five times in the context of anti-government rioting), however, seem to indicate that the independence of the institution has not been harmed.

On the prudential front, the Hungarian banking system can be considered rather strong. Regulation and supervision of Hungarian banks and other financial institutions is a joint responsibility of the Hungarian Financial Supervisory Authority (HFSA) and the National Bank of Hungary. Loan underwriting and monitoring standards have progressed considerably (not only as a result of stricter regulation, but also supported by the transfer of know-how from

[48] When the commission was created and as this study is written, the twin brothers Jarslaw and Lech Kaczynski occupy the positions of prime minister and president, respectively.

[49] "The agency's independence is not guaranteed in the law, and the appointment and dismissal procedures for its management risk politicizing its operations". IMF Article VI Consultation, 2006

[50] Financial Times, October 20, 2006. *Poland approves bank law shake-up*

[51] Financial Times, July 12, 2004. *Hungary's central bank governor accused of political interference*

strategic Western European shareholders), and the quality of regulations and prudential supervision compares favourably with Central and Eastern European peers[52], now approaching that of the EMU countries.

In 2005, the regulation of retail loans was one of the HFSA's key priorities. The issue of the impressive growth in FX lending, and the proportion of loans to unhedged SMEs and households therein, however, remains unaddressed. Standard & Poor's expects regulatory measures to restrict foreign currency lending growth to be implemented soon.

Ultimately, market discipline and regulatory preferences come form political will. The speed and consistency with which the CE-3 developed strong regulatory and supervisory frameworks in line with EU standards suggests that the relevant authorities would not hesitate to implement all necessary measures to prevent FX lending from representing a risk to the implementation of monetary policy and/or to the soundness of the banking system.

The apparent inertia that nonetheless seems to be prevailing at the moment may well be due to the fact that FX lending is not a threat yet.

Still, any doubts around the authorities' political will would add to a more general concern that, since joining the EU in May 2004, central European politicians no longer feel the need to be on best behaviour[53].

So whether or not clear and present, the risk arising from growing levels of FX lending would better be treated as such. A proactive approach by monetary and supervisory authorities would be a welcome sign that in the absence of anchors, a strong steering is in place to insure a smooth sailing going forward.

6. Limitations and Suggestions for Further Research

Much of the analysis undertaken in this paper was based on the figures available to determine the share of loans denominated in foreign currency in the Czech Republic, Hungary and Poland. The data, however, showed insufficient for a robust analysis for a number of reasons. Firstly, data was available for a short period (smaller than 10 years), and only year-end figures were available. Sample sizes therefore, were too small. Given idiosyncrasies of the countries analysed, aggregating samples would not have helped.

Secondly, no discrimination was available for other relevant variables relating to these loans such as breakdown between new and outstanding loans, types of borrower (corporate, SMEs

[52] Standard & Poors (2006b).
[53] Financial times, July 12, 2006. *Why reform fatigue has hit the east*

and households) and corresponding creditworthiness, existence of matching revenues in foreign currency, type of lenders, lenders' internal policies regarding FX loans, etc. Although we have attempted to understand general drivers of both the supply and the demand based on the scarce information available, and believe that it was possible to draw some interesting considerations, our assessment was for from conclusive. Detailed information on FX loans (based e.g. on the criteria described above) would have allowed a more robust econometrical analysis.

Because a thorough understanding of the drivers of FX lending was impaired, it was also challenging to estimate future developments in FX lending trends, and therefore to assess whether those trends can become a threat or if, for example, they may evolve to treats to preferred, highly-creditworthy borrowers with whom banks want to enhance relationships.

It must be noted, still, that even a clear understanding of FX lending drivers and a robust estimate for future developments would not suffice to assess how big a threat they can represent.

On the aggregate demand and price stability front, the absence of comparable examples made our approach to the "threat" hypothesis rather theoretical. It is true that the availability of loans in euros or other hard currency has been a constant in the period preceding and concomitant to the accession process, but never before has it happened to the extent that the CEE region is experiencing. Moreover, even for countries which have experienced an increase in FX loans, albeit to a smaller extent, such as Ireland, it was not long until they actually joined the EMU and local borrowers had secured access to income in euros – whilst for the CEE countries in general, and for the CE-3 in particular, the EMU accession schedule keeps being stretched.

Although it can be claimed that the current acc empirical evidence supporting or dismissing the hypothesis considered (i.e., that the availability of loans with interest rates inconsistent with monetary policy rates could impair the goals

Finally, on the prudential risk front, the lack of access to bank-specific data (in addition to the criteria mentioned, information on proactive measures taken by banks to assess individual borrower risk and/or to hedge such risks, e.g. would have been extremely valuable) again

prevented us from a deeper assessment of the "threats". We relied, therefore, on the assessment undertaken by specialist agencies such as the International Monetary Fund and rating agencies such as Standard & Poor's and Fitch, to draw our conclusions on the existing risks.

We propose, therefore, a review of the questions addressed in this study and of the methods undertaken, if and once additional and more detailed information become available.

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