

# Foreign Currency Lending in Central, Eastern and Southeastern Europe: the Case of Austrian Banks

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*This paper describes the exposure of Austrian banks to foreign currency loans in Central, Eastern and Southeastern Europe and the CIS and elaborates on its risks to banking sector stability. Austrian banks' foreign currency loan exposure more than doubled between 2005 and 2009, their regional subsidiaries' foreign currency loan exposure continued to be higher than the market average in this period. Our findings confirm the key importance of funding risks and do not contradict the assumption of a nonlinear relationship with regard to credit risk. However, a simple comparison of risk indicators does not unambiguously indicate an overall higher credit risk in the foreign currency loan portfolio. Most recent data suggest that Austrian banks' foreign currency loan exposure is declining. Policymakers are now called upon to use the momentum and strike a balance between restricting foreign currency lending to foster a more sustainable growth path and avoiding negative procyclical effects.*

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## 1 Introduction

A striking feature of economic convergence in Central, Eastern and Southeastern Europe (CESEE) and the Commonwealth of Independent States (CIS) has been the massive extension of credit to the private sector, which entailed a high share of loans<sup>2</sup> denominated in foreign currency. Austrian banks – with a market share of some 15% in the region – have played a major role in this process. In some countries, notably in Baltic and Balkan states, the share of foreign currency loans to nonbanks has reached levels well above 70%. However, excessive foreign currency lending is not a new phenomenon to emerging economies. In the mid-1990s, similar developments could be observed in countries as diverse as Argentina, Peru, Uruguay and Turkey. The relevant literature gives various explanations for foreign currency lending in emerging economies, ranging from demand- and

supply-side factors to macroeconomic and institutional reasons.

Most authors cite the absolute differential between interest rates on foreign and local currency loans as a key driver of demand. Moreover, stable (or even appreciating) local currencies and strong wage growth increase the perceived attractiveness of foreign currency loans. In this context, Dübel and Walley (2010) mention the “tilt effect” as a special characteristic of mortgage lending. They argue that the loan-to-value and the debt service-to-income ratios of local currency mortgage loans change rapidly during periods of high inflation since standard mortgage product payments remain constant but wages rise at least partially in line with inflation. In consequence, local currency mortgage loans may be expensive at the outset but become more affordable as inflation rises. Borrowers thus face a higher repayment burden in the

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<sup>2</sup> In our paper, the term “loan” refers to loans (excluding securities) to nonbanks only. Similarly, “deposits” always refer to deposits of nonbanks. Exceptions are explicitly stated.

early years of such a mortgage, which makes it seem less attractive at the time of the decision to take out a loan. Therefore, many borrowers opt for foreign currency loans instead. Another motivation to take out foreign currency loans may be that borrowers have asset portfolios or expected future income in foreign currency (e.g. from work abroad, exports, remittances or holdings of foreign financial assets), which they may use to hedge against (or take advantage of) currency risks.

An informed decision on the ideal currency denomination of a loan requires a high level of financial literacy. Given the low level of credit intermediation in most CESEE and CIS markets, banks argued that unhedged foreign currency borrowers were typically individuals with high net worth or higher education. However, the sheer extent of the lending boom in some countries, the prevalence of foreign currency consumer loans and stiff competition between banks for market share (and weak consumer protection legislation in some countries) have raised doubts about this line of argument. Furthermore, foreign banks (or their local subsidiaries) may have spurred foreign currency lending in order to capitalize on their competitive advantage in this area (especially funding) and better risk management due to previous experience with such products.

Another strand of the literature stresses the importance of macroeco-

nomie or institutional factors. In some countries, for instance, high de-facto deposit euroization (or deposit dollarization<sup>3</sup>) has not encouraged the development of local currency capital markets. The major reasons for deposit euroization are mistrust in local institutions, hysteresis effects<sup>4</sup> as well as expectations with respect to the volatility of future inflation and exchange rates. On the supply side, loan dollarization can be attributed to a lack of local savings in combination with easy access to foreign funds and exchange rate-oriented monetary policies, especially in anticipation of euro adoption. In consequence, banks have often preferred to lend in foreign currency in order to avoid currency mismatches and funding risks (Brown et al., 2009; Basso et al., 2007; Luca and Petrova, 2008; Rosenberg and Tirpák, 2008; Haiss et al., 2009; Arclean and Calvo-Gonzalez, 2006), and, in addition, have been more comfortable with loan pricing in foreign currency given the absence of long-term local currency reference rates. Bokor and Pellényi (2005) also mention fiscal policies, e.g. taxes and subsidies, and banking regulation, e.g. capital requirements for foreign currency loans, as the drivers of the supply of and the demand for foreign currency lending (e.g. Hungary).

On the demand side, some evidence suggests that interest rate differentials may play a key role. Borrowers who have assets and/or income in foreign

<sup>3</sup> *In line with de Nicoló et al. (2003, p. 5), by referring to residents' use of foreign currency deposits, we refer to a mix of payment dollarization (foreign currency demand deposits) and financial dollarization (foreign currency term deposits). De Nicoló et al. (2003, p. 5) distinguish between three generic types of dollarization: payment dollarization (also known as currency substitution) referring to residents' use of foreign currency in cash, demand deposits, or central bank reserves for transaction purposes; financial dollarization (also known as asset substitution), which consists of residents' holdings of financial assets or liabilities in foreign currency; and real dollarization, which refers to indexing, formally or de facto, of local prices and wages to the U.S. dollar (euro). In turn, financial dollarization may be domestic (i.e. associated with claims of residents, including against the government), or external (i.e. associated with the claims of nonresidents against residents).*

<sup>4</sup> *Hysteresis here refers to the continued use of foreign currency deposits due to past experience of high inflation or hyperinflation.*

currency may wish to close their own open foreign currency position by taking out a foreign currency loan. Unhedged borrowers, in turn, may wish to take out foreign currency loans if the local currency is expected to appreciate. With respect to regulatory policies, Rosenberg and Tirpák (2008) found that the success of past measures to curb foreign currency borrowing in CESEE and the CIS had been limited, and the role of foreign banks remains disputed.

There is remarkably little cross-country research on the empirical facts of foreign currency lending despite the importance of the issue for CESEE and the CIS. Moreover, prevailing empirical research has focused on aggregate country data – with the notable exception of Brown et al. (2009) – and neglected cross-border lending. To our knowledge, there exists no up-to-date study examining bank-specific data even though the global financial crisis and its repercussions have underlined the risks of foreign currency lending. Whereas for consumers, foreign currency loans entail mainly exchange rate risks, they affect banks' overall risk profile, involving indirect credit risk, concentration risk, funding risk, exchange rate risk, operational risk, legal risk, reputational risk or socio-political risk. The major threat to banking sector stability are concentration risks since foreign currency lending exposes otherwise heterogeneous borrowers to the same risk factor (i.e. the exchange rate) and therefore undermines diversification. Moreover, foreign currency lending increases the dependence of banks on the proper functioning of international financial markets to hedge against exchange rate risks, and thus induces contagion risks. The risks to stability will be compounded further if a large number of banks follow similar strategies

(e.g. Austrian banks in CESEE and the CIS).

This paper addresses the various aspects of foreign currency lending in CESEE and the CIS from a banking sector stability perspective with a focus on the credit, funding and earnings risk positions which had been built up in the period before the crisis hit CESEE and the CIS. We draw on a database that contains data on Austrian banks' direct cross-border foreign currency lending and indirect foreign currency lending via subsidiaries. The period covered by the data allows us to elaborate on the dynamics of foreign currency lending in the run-up to and during the crisis.

The paper is structured as follows: Section 2 gives an overview of the data. In section 3 we describe the development of Austrian banks' foreign currency loan portfolios and their current exposure. Section 4 complements this assessment by an analysis of the risk implications, both from a theoretical as well as an empirical perspective. Finally, we conclude and propose directions for future work in section 5.

## 2 Data and Method

We analyze two categories of foreign currency loans – direct and indirect foreign currency loans – drawing on data from the supervisory and monetary statistics of the Oesterreichische Nationalbank (OeNB).

For the former, data for cross-border direct loans of Austrian banks are taken from the monthly monetary statistics and the OeNB's Central Credit Register (Großkreditevidenz, GKE). In the monthly monetary statistics, each bank reports its loans broken down by currencies and sectors (mainly households and nonfinancial corporations; for countries outside the EU, a clear differentiation between sectors is not possible). The GKE provides credit risk

data, which, however, cannot be disaggregated by currency. Therefore, the comparability of the quality of banks' foreign currency loans with that of local currency loans is limited. Furthermore, the GKE contains only loans over EUR 350,000, meaning there is a bias towards corporate loans.

Data for indirect loans granted by Austrian subsidiaries abroad is not readily available as part of any standard reporting package. Instead, the OeNB has collected data in biannual surveys from the six largest Austrian banking groups since 2005. This allows us to draw conclusions and make comparisons concerning the behavior of individual banks and their respective foreign currency portfolios in CESEE and the CIS<sup>5</sup> and concerning subregional<sup>6</sup> as well as country-specific patterns.

In 2009, the OeNB increased the frequency of reporting to a quarterly basis and has since refined the survey to reflect the increased risks associated with foreign currency lending. Initially, the survey required banks to report for each country and subsidiary the volumes of foreign and local currency loans and the respective values for collateral and loan loss provisions. The survey was later extended to include more detailed information on nonperforming loans, restructuring, collateral and risk provisioning as well as qualitative questions concerning natural hedges and bullet loans, and leasing contracts. Many topical questions, e.g. regarding loan-to-value ratios or natural hedges, were dealt with on a one-off basis. As it stands, the survey now requires banks

to split their loan portfolios into currencies, sectors and (purpose) subsectors (consumer, mortgage), including a breakdown by newly granted loans and remaining maturities. For reasons of data protection, specific country data are omitted wherever only one or two banks have subsidiaries. Some data were available for the first quarter of 2010, but generally, December 2009 is the primary point in time of analysis.

Our main hypotheses are rather heterogeneous and therefore require a differentiated methodical approach. Our assumptions are: First, Austrian banks' growth model in CESEE relies to a larger extent on foreign currency loans than that of local banks due to the former's competitive advantage in funding and home market experience in this area; second, foreign currency loans entail a higher credit risk or at least the existence of a nonlinear relationship between market and credit risk; third, foreign currency loans undermine banks' funding not only in the short but also in the medium term; and fourth, foreign currency lending may be driven by higher profitability due to the mispricing of country risk. Given these assumptions, we have to investigate not only long-term but also short-term developments (e.g. liquidity risk). Furthermore, we have to rely extensively on qualitative techniques since the quality of our data sample (providing, e.g., only a small number of cross-sections or short time series) allows only simple quantitative methods. The purely descriptive and illustrative analysis of our micro dataset is supple-

<sup>5</sup> Note that our sample of CESEE and CIS countries includes Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Kazakhstan, Latvia, FYR Macedonia, Montenegro, Poland, Romania, Serbia, Russia, Slovakia, Slovenia and Ukraine.

<sup>6</sup> The subregions under investigation are the aggregates NMS-2004, NMS-2007, SEE and CIS. NMS-2004 includes the Czech Republic, Hungary, Latvia, Poland, Slovakia and Slovenia; NMS-2007 includes Bulgaria and Romania. SEE includes Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro and Serbia. CIS includes Belarus, Kazakhstan, Russia and Ukraine.

mented with consistency checks based on publicly available data (especially for market comparisons on the country level), relevant but private information (about, e.g., ECB tenders) and case studies. Simple regressions are performed for events (i.e. cross-sections only), and some correlations are illustrated in scatter plots.

### 3 Development of Foreign Currency Lending of Austrian Banks in CESEE and the CIS

In the 1980s and increasingly – following the fall of the Iron Curtain – during the 1990s, Austrian banks expanded to neighboring CESEE and the CIS countries. Among the other EU countries whose banks hold large stakes in CESEE and CIS in terms of their exposure as measured by the BIS only French banks have engaged in an equally long-lasting and intact expansion.

The expansion depicted in chart 1 has essentially been twofold: Austrian banks have granted loans both directly to companies in CESEE and the CIS as

well as indirectly, by establishing (green-field investments) or acquiring banks in CESEE and the CIS and granting loans through these subsidiaries. Austrian banks' foreign currency loan exposure can now be split into three categories: (1) indirect loans granted to customers in CESEE and the CIS by Austrian subsidiaries in the region (volume as at December 2009: EUR 79 billion); (2) direct loans granted to CESEE and the CIS customers from Austria (volume as at December 2009: approximately EUR 41 billion); and (3) foreign currency leasing contracts, which represent the smallest group by far (as at December 2009: EUR 6 billion) and can be regarded as (a close relative of) loans.

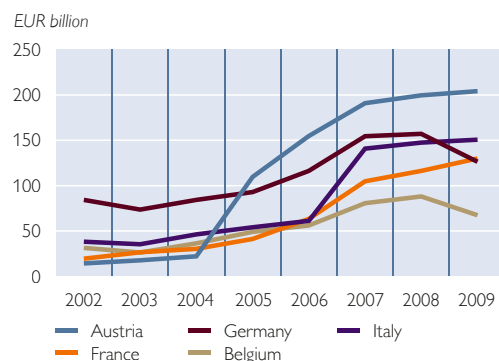
#### 3.1 Loans Granted by Austrian Banks' Subsidiaries in CESEE and the CIS

As illustrated in chart 2,<sup>7</sup> Austrian banks and their subsidiaries saw their businesses and respective foreign currency loan portfolios more than double – from EUR 31 billion to almost EUR 79 billion – between the end of 2005 and year-end 2009. This increase is partly due to organic growth but also the result of various acquisitions of banks in CESEE and the CIS.

In December 2008, however, with the financial crisis gaining momentum, foreign currency loans peaked at EUR 78.9 billion. After a slight decline by 2.3% year on year in 2009, Austrian regional subsidiaries' foreign currency loan exposure stood at EUR 77.3 billion as at the fourth quarter of 2009. However, given that the foreign currency loan ratio did not decline overall, the absolute decline in foreign currency lending should be understood in the context of a general lending market

Chart 1

#### Selected EU Countries' Asset Exposure<sup>1</sup> to CESEE and the CIS



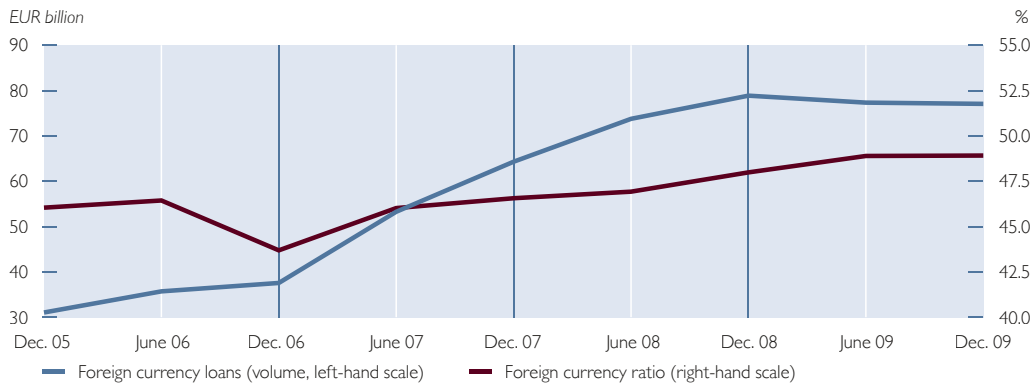
Source: BIS.

<sup>1</sup> Exposure not adjusted for mergers and acquisitions (e.g. Hypo Group Alpe Adria or Bank Austria).

<sup>7</sup> Countries which introduced the euro during the observation period have been adjusted retrospectively i.e. the euro is treated as home currency in Slovenia and Slovakia before its actual introduction in these countries.

Chart 2

### Share<sup>1</sup> and Volume of Foreign Currency Loans in the Portfolios of Austrian Banks' Subsidiaries in CESEE and the CIS



Source: OeNB.

<sup>1</sup> The foreign currency ratio is the share of foreign currency loans in the total loan volume.

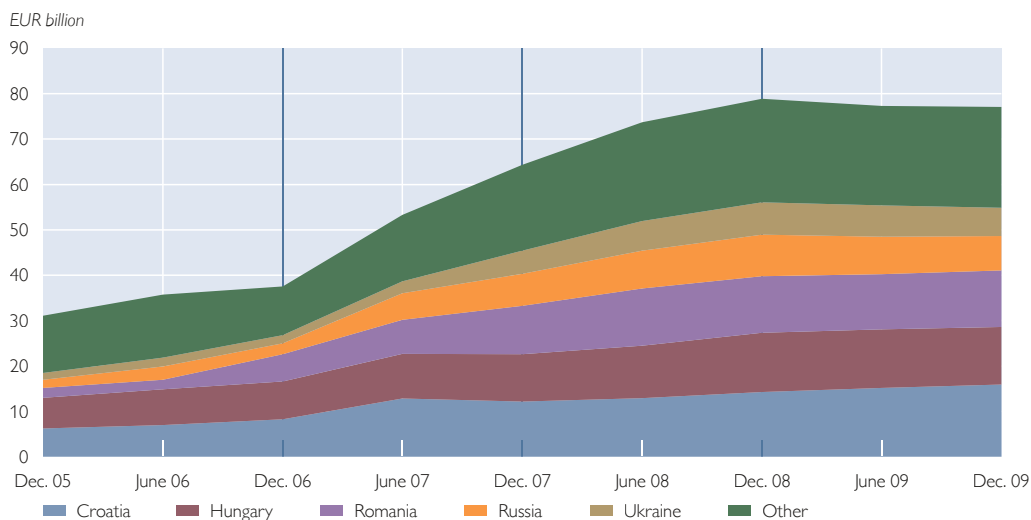
downturn in CESEE and the CIS rather than a shift to local currency loans. The foreign currency share remained practically unchanged at 48.9% between the second and the fourth quarters of 2009 and was almost equal for households (EUR 31 billion) and nonfinancial corporations (EUR 46 billion).

Besides the growth of foreign currency loans over the past five years, the

exposure became increasingly concentrated in Croatia (EUR 16 billion), Hungary (EUR 13 billion), Romania (EUR 12 billion), Russia (EUR 8 billion) and Ukraine (EUR 6 billion); in these countries, 71% of foreign currency loans (as at the fourth quarter of 2009) have been granted by Austrian regional subsidiaries. Also, the country profiles of individual banks must be taken into

Chart 3

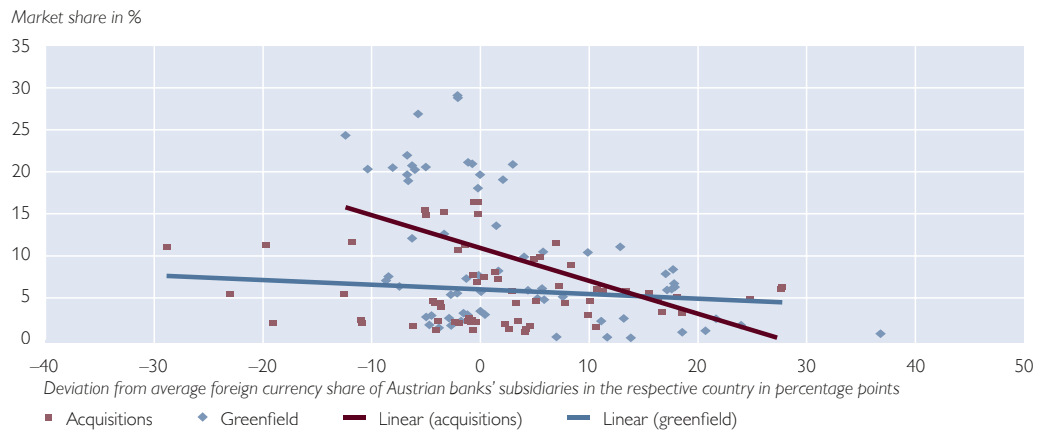
### Foreign Currency Loan Growth by Country



Source: OeNB.

Chart 4

### Relation between the Market Share of Austrian Banks' Subsidiaries and the Foreign Currency Share in Their Loan Portfolios<sup>1</sup>



Source: OeNB.

<sup>1</sup> Squares and diamonds represent individual subsidiaries (data from December 2007, 2008 and 2009 respectively).

account. At all large banking groups, there is one country that accounts for at least a 20% share of their respective foreign currency loan portfolios; at several banks, this share was even as high as 40%.

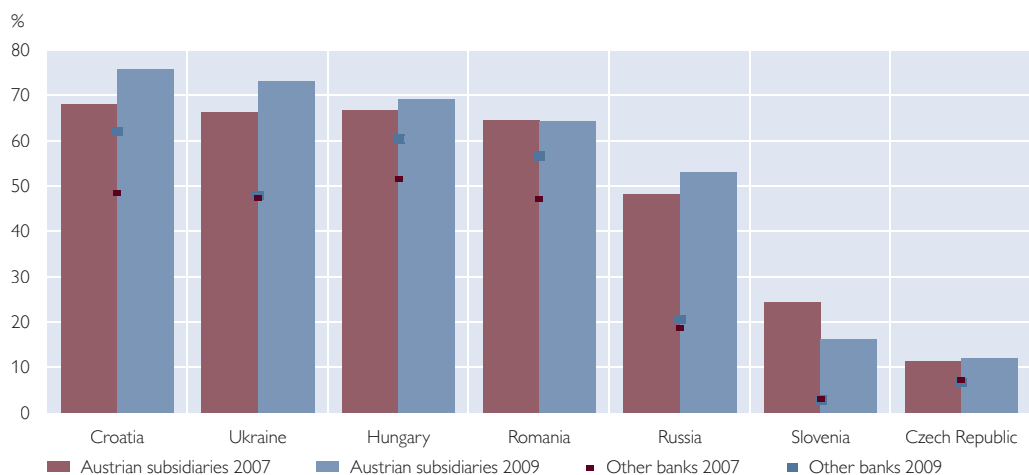
Looking at indirect loans, we see that Austrian subsidiaries with smaller market shares (especially those that have been acquired) tend to have a foreign currency loan share above the

country average. This could be attributed either to initial difficulties attracting deposits in local currency or a more aggressive push for market share.

A comparison of loan portfolios of Austrian banks with those of their local competitors shows that in almost all CESEE and CIS countries, Austrian banks still have higher ratios of foreign currency loans than their local competitors, which may be because the former

Chart 5

### Foreign Currency Loan Share – Austrian Banks versus Competitors



Source: OeNB.

have benefitted from advantageous funding. Over time, this relative position has been rather constant, with neither Austrian banks pulling away, nor competitors closing the gap in all markets.

The trends since the outbreak of the financial and economic crisis have been rather inhomogeneous. In some countries, e.g. Hungary, Romania and – to some extent – Croatia, competitors' foreign currency loan shares have actually approached those of Austrian banks from year-end 2007 to year-end 2009. In the dollarized CIS countries Ukraine or Russia, on the other hand, the share of foreign currency loans in the portfolios of Austrian subsidiaries has continued to be significantly larger than this share in their local competitors' portfolios.

### 3.2 Cross-Border Loans Granted by Austrian Banks

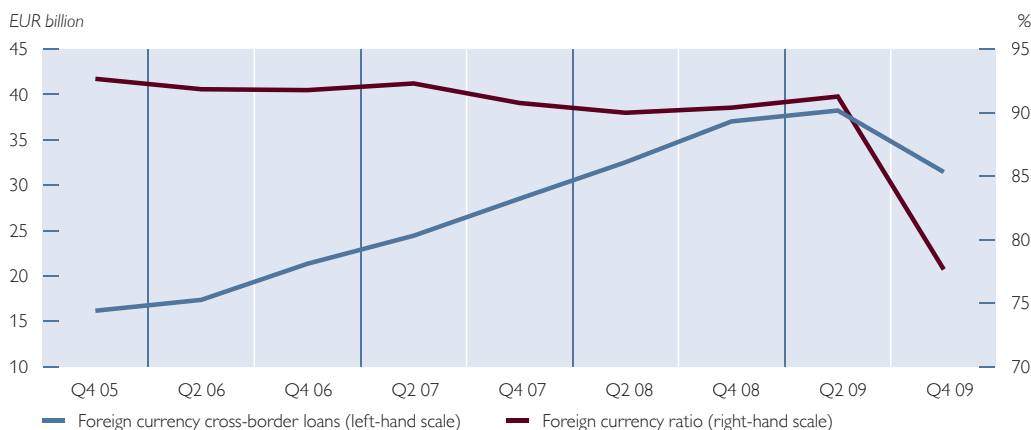
Over the past decade, the growth of cross-border (i.e. direct) foreign cur-

rency loans (to nonbanks) broadly corresponded to that of indirect loans. Cross-border loans to nonbanks are essentially loans to corporations, the share of loans to households is well below 1% (as data from the GKE show). After expanding from EUR 16.2 billion in December 2005 to EUR 38.2 billion in June 2009, cross-border foreign currency loans contracted by 5.9% to stand at EUR 36.8 billion at the end of 2009. The foreign currency loan ratio for cross-border loans changed only moderately, declining very slowly from 92.7% to 90.9% over the same time period.<sup>8</sup>

Comparing the foreign currency share of direct loans with that of indirect loans reveals no visible (negative or positive) correlation, neither at the individual bank level, nor at the country level over time. One explanation is that the composition of the portfolios and correspondingly, the motives of lenders and borrowers differ greatly.

Chart 6

#### Growth of Foreign Currency Cross-Border Loans



Source: OeNB.

<sup>8</sup> Euro loans to Slovenian and Slovakian customers are treated as foreign currency loans throughout the whole time span shown in chart 6 (irrespective of the adoption of the euro as the national currency), since it was our intention to illustrate primarily that there was no change in the foreign currency share over time that had been caused by banks' policies. The "real" foreign currency loan exposure at end-2009 is EUR 31.5 billion, representing a 77.6% share in cross-border loans.



#### 4 Risks of Foreign Currency Lending in Emerging Markets

In general, an assessment of the credit risk of private sector borrowers in emerging markets suffers from severe limitations such as short histories or poor quality or nonavailability of data. Under these circumstances, foreign-owned parent banks tend to rely more on local expertise and collateral than on cash flow analyses and credit assessments when lending in emerging markets. Local managers of subsidiaries in growth markets, in turn, face ambitious budgetary targets set by foreign-owned parent headquarters, which entices them to underreport credit risk (Dubravko, 2008).<sup>9</sup> Regarding the effectiveness of risk mitigation techniques, many emerging markets carry higher legal risks, like weaker bankruptcy procedures and higher costs of bankruptcy proceedings (Dubravko, 2008, and PricewaterhouseCoopers, 2010), which impinge on the realization of collateral.<sup>10</sup>

Foreign currency lending in emerging markets involves additional layers of credit risk. Currency weakening through depreciation in emerging economies is usually more extreme and disorderly than the depreciation of major market currencies. In addition, an increase in foreign currency interest rates, a rise in the funding costs for the parent bank resulting in a pass-through to loan rates, or, in the case of hedged borrowers, a slump in foreign currency income due to a weakening of demand by main trading partners or lower remittances from abroad – all these factors could

increase the payment burden of the borrower. Due to a lack of hedging instruments, willing counterparties or liquid markets, banks in turn could be less able to hedge against credit risk in their emerging market loan books in crisis times. Other risks, like foreign currency funding risk, arise primarily due to deposit gaps in the respective currency and the corresponding need for friction-free access to wholesale funding. Earnings risk stems mainly from lower net interest income resulting from higher funding costs.

With regard to indicators showing the occurrence of credit risk, conventional, but not yet internationally standardized, measures like nonperforming loan (NPL) ratios and loan loss provision (LLP) ratios can often be used as lagged indicators only. Drawing conclusions from these indicators about credit risk is subject to another caveat: Country-specific precedents show that banks may try to conceal rising credit risk by restructuring problem loans or off-balance-sheet measures, which help temporarily keep NPL ratios and LLP ratios low (IMF, 2010). Market-based indicators of rising credit risk like the five-year senior sovereign CDS spreads representing country risk, which can be regarded as the floor for credit risk spreads of local customers (except possibly for large, internationally active corporations), had already not boded well from 2008 onwards. Sound risk management requires not only the consideration of some kind of country risk premiums in the lending process but also in the calculation of intra-

<sup>9</sup> Regarding Austrian parent banks, an informal remark from an Austrian banker with strong CESEE and CIS expertise, qualifying loan loss provisioning in subsidiaries of Austrian parent banks in CESEE and the CIS as “a residual” vis-à-vis budgeted profits as at mid 2009, confirms the picture.

<sup>10</sup> Legal risk arose e.g. in Ukraine, when parliament adopted a law imposing a moratorium on the repossession of citizens’ private residential buildings that had been used as collateral for loans on May 21, 2009. The law was then vetoed by the president, however.

group fund transfer prices, at least to reflect money market realities and account for political risks (e.g. currency controls or regulatory changes). However, the pass-through of country risk premiums to external prices depends on banks' market power and competitive strategies, which ultimately entail earnings risk. In what follows, we will analyze both the credit, funding and earnings risk dimension of Austrian banks' foreign currency lending in CESEE and the CIS in more detail.

#### 4.1 Credit risk

##### 4.1.1 Credit Risk Indicators for Indirect and Direct Lending by Austrian Banks in CESEE and the CIS

OeNB survey data on indirect lending indicate a steep rise in loan loss provisions for foreign currency loans between year-end 2008 and year-end 2009, mainly driven by a substantial worsening of loan quality in the CIS due to a strong economic contraction and marked currency depreciation (chart 7). While the foreign currency LLP ratio for all indirect lending in CESEE and the CIS hovered at quite low levels until the end of 2008, it more than doubled in 2009 to reach 4.9%, the same level as the local currency LLP ratio. On a subregional level, the local currency LLP ratios in the NMS-2004, the NMS-2007 and SEE continued above foreign currency LLP ratios, with the exemption of CIS.<sup>11</sup> Nevertheless, the yearly increase in the foreign currency LLP ratio beyond the level of the local

currency LLP ratio (except for SEE) points to a relative increase in foreign currency loan risk. Previously higher local currency LLP ratio levels can be attributed to a relatively higher local currency repayment burden due to higher local currency loan rates or the potentially tighter credit standards for foreign currency borrowers.

The main driver behind the swift rise of foreign currency LLP ratios was the stepped-up need for loan loss provisioning in U.S. dollars in the CIS following the marked contraction of the Russian and Ukrainian economies in 2009 and the weakening of local currencies. Currency depreciation also affected Kazakhstan, which, however, continued to grow, albeit at a slower pace.<sup>12</sup>

A customer segment-based view shows that the foreign currency NPL ratio and LLP ratio for households were lower than those for corporates in CESEE and the CIS as at end-2009. On a subregional basis, the situation was the opposite in the CIS and the NMS-2007, where the coverage of corporate foreign currency NPLs by loan loss provisions was lower than in the case of households.

Regarding nonperforming loans, we saw a rise of foreign currency NPL ratios by 39% to 10.5% of all foreign currency loans and a more moderate increase of local currency NPL ratios – by 33% to 9% of all local currency loans – for the aggregate CESEE and the CIS in the second half of 2009. The

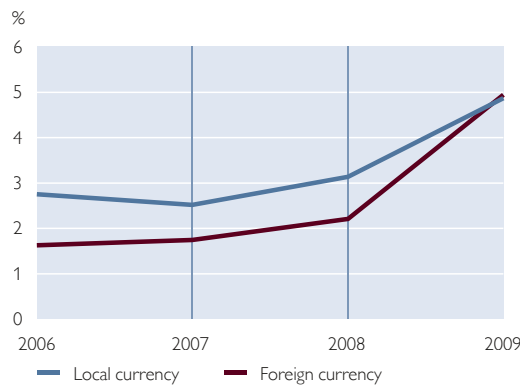
<sup>11</sup> *The share of mortgage loans in total foreign currency loans to households is higher compared with local currency loans, which may exert a dampening effect on foreign currency LLP ratios due to a higher extent of collateralization. In the CIS, the share of corporates prevails over the “mortgage effect.”*

<sup>12</sup> *The predominance of corporate borrowers, who account for 72% of the total indirect foreign currency loan volume, is a striking feature of foreign currency lending in the dollarized CIS. For the case of Kazakhstan, according to the IMF (2010), companies generating income in foreign currency account for only a relatively small share of total loan volume compared to the share of unhedged borrowers in construction, real estate and retail. According to OeNB survey data, Russia is the only country with a high share of naturally hedged indirect loans. If this holds true, a swift economic recovery based on higher price-based competitiveness on the back of a weaker local currency will not necessarily result in a concomitant recovery of foreign currency LLP ratios for corporate loans in the CIS.*

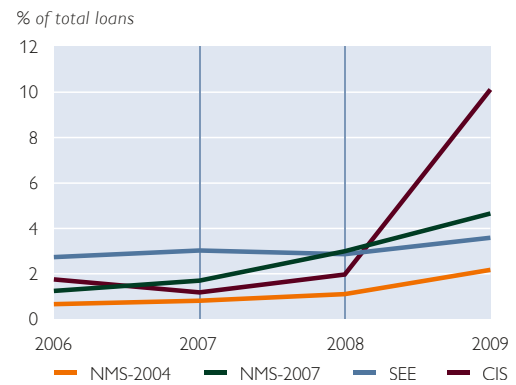
Chart 7

### Loan Loss Provision Ratios for CESEE and CIS Countries

Local and Foreign Currency Loans  
in CESEE and CIS



Foreign Currency Loans on a Subregional Basis



Source: OeNB.

fast dynamics of the NPL ratios led to a general fall in coverage by provisions,<sup>13</sup> which was more marked for local currency-denominated nonperforming loans, from 65% to 54%, while the coverage of foreign currency nonperforming loans fell from 50% to 47%.

With the exception of the CIS, however, all foreign currency coverage ratios were below the local currency coverage ratios as at the end of 2009. The fall in the coverage of foreign currency loans in the NMS-2007 aggregate was most marked and may indicate an increased

Table 1

### Loan Loss Provision Ratios, Nonperforming Loan Ratios and Coverage Ratios on a Subregional Basis

	NMS-2004		NMS-2007		SEE		CIS	
	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency
<b>As at June 2009</b>	%							
Nonperforming loan ratio	5.4	5.4	4.7	6.9	7.8	8.2	11.9	11.9
Loan loss provision ratio	1.9	3.1	3.7	5.4	3.5	4.7	6.2	9.1
Coverage ratio	34.7	58.2	78.2	78.2	45.6	57.0	51.7	76.7
<b>As at December 2009</b>	%							
Nonperforming loan ratio	6.3	6.7	7.7	10.4	9.3	12.9	19.3	16.3
Loan loss provision ratio	2.2	3.5	4.7	7.4	3.6	6.5	10.1	8.5
Coverage ratio	34.7	52.2	60.3	71.4	38.4	50.4	52.4	52.0

Source: OeNB.

<sup>13</sup> As data on risk provisions on NPLs are available only for end-2009, we took total loan loss provisions as a proxy. As at end-2009, risk provisions on NPLs are available, and they show a lower coverage: 38% of foreign currency NPLs and 51% of local currency NPLs are covered by provisions.

future need for provisioning (table 1). Data on collateral for NPLs are only partially available, which does not allow a reliable estimate of the further need for provisioning.

Looking at data on direct lending by Austrian parent banks to customers in CESEE and the CIS (direct lending is overwhelmingly corporate lending, with foreign currency loans accounting for an estimated 77%), the coverage of nonperforming direct loans by provisions is quite low, amounting to about 36%, which corresponds to the coverage ratio for indirect corporate lending.<sup>14</sup>

Although the dynamics of loan loss provisioning for direct loans to CESEE and the CIS accelerated from the second to the fourth quarter of 2009, with an increase in the LLP ratio by 70%, the still very moderate LLP ratio for directly granted loans of 2.7% as at end-2009 has been a prominent point of analysis, since cross-border loans have long yielded lower LLP ratios than corporate loans extended to domestic customers in Austria. LLP ratios and NPL ratios for direct loans are about one-third lower than the respective ratios for indirect corporate loans. This difference between LLP ratios for direct and indirect corporate loans is mainly attributable to a high share of direct loans granted to subsidiaries of multinationals in CESEE and the CIS, many of which also have their headquarters in Austria. This evidently lowers credit risk thanks to parental support and, furthermore, implies a

higher share of naturally hedged direct foreign currency corporate borrowers.<sup>15</sup>

#### 4.1.2 Foreign Currency Lending, Risk Costs and Exchange Rate Volatility

The current crisis showed that exchange rate volatility plays a key role in foreign currency lending and credit quality. This fact is illustrated in the following charts, which plot the exchange rate-induced changes in the loan portfolio (i.e. the assumed increase in the repayment burden for foreign currency borrowers due to a depreciation of the local currency) against the changes in banks' risk costs. Both charts suggest a positive correlation between the increase in the repayment burden and risk costs for countries with flexible exchange rates. The impact of adverse exchange rate developments seems to be less pronounced in the case of direct loans,<sup>16</sup> supporting the hypothesis that such borrowers enjoy better protection through natural hedges and a higher creditworthiness in general.

Austrian banks' risk costs in countries with currencies pegged to the euro developed rather heterogeneously. Local currency interest rate changes and (for specific subsidiaries) the quality of risk management before the crisis played a major role. From a policy perspective, our findings underline the crucial role of exchange rate-oriented policies of international financial institutions in the prevention of banking sector crises in general. In the special case of CESEE and CIS, the amply

<sup>14</sup> GKE data show five different types of loans (specialized lending, revolving loans, nonrevolving loans, leasing loans, securitized loans) above a threshold of EUR 350,000. The estimated share of direct foreign currency lending in total direct lending of 77% was based on the currency split taken from the OeNB's monetary statistics because there is no currency split available for GKE data.

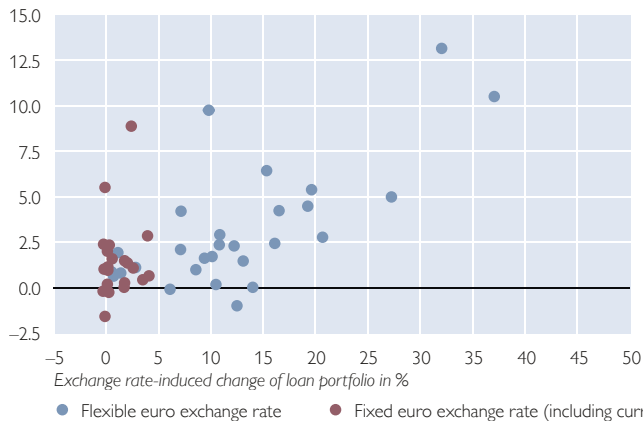
<sup>15</sup> The OeNB survey as at end-December 2007 showed that the share of naturally hedged direct loans ranged between 30% and 100% according to information by four banks. The share of naturally hedged indirect corporate loans ranged between below 20% and 70%.

<sup>16</sup> The size of the data points of direct loans corresponds to the loan volumes in the respective country as at the second quarter of 2008.

## Impact of Exchange Rate Volatilities on Loan Loss Provisions

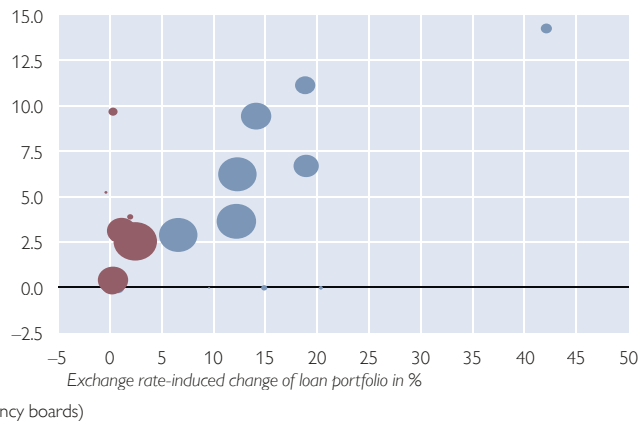
### Indirect Loans of Austrian Banks – Bank Level

Increase in loan loss provision ratio in percentage points (Q2 08–Q4 09)



### Direct Loans of Austrian Banks – Country Level

Increase in loan loss provision ratio in percentage points (Q2 08–Q4 09)



Source: OeNB.

Note: In the left-hand panel, volumes refer to loan portfolios.

dimensioned and decisive international support in cooperation with local authorities may even have avoided the collapse of the whole regional banking system.

#### 4.1.3 Evidence of Credit Risk in Hungary, Romania and the Ukraine

Hungary, Romania and Ukraine are countries with nonpegged exchange rate regimes, in which foreign currency lending accounts for a major share of their respective banking system's loan book and whose currencies have depreciated significantly recently (by 20% and more) vis-à-vis their main borrowing currencies, the Swiss franc, the euro and the U.S. dollar; therefore, we chose these three countries for a more detailed investigation. All three countries have been supported by international financial institutions, though with mixed success. Ukraine has shown a strong connection between the depreciation of the local currency and loan loss provisions, whereas this link has been weaker for Romania and Hungary.

We observe a mixed picture regarding the credit risk of foreign currency

loans: Whereas in Ukraine, the NPL ratio for foreign currency – mainly U.S. dollar – loans was higher than the NPL ratio for local currency loans up to the fourth quarter of 2009 for the indirect lending portfolio, in Hungary, where Swiss franc-denominated loans have prevailed, and in Romania, where mainly euro-denominated loans had been taken out, the NPL ratio for foreign currency loans has been lower compared with the NPL ratio for local currency loans (table 2). This picture holds for both customer segments, corporates as well as households. In Hungary, the coverage ratios for households have been in general low, irrespective of the denomination of the loan.

The data for Romania and Hungary could also mirror a delayed fallout from local currency weakening, however. This delay can be attributed to various cushioning effects: Natural hedges on the borrower side in terms of foreign currency cash flows or collateral, lower foreign currency loan rates, timely foreign currency loan restructuring for

Table 2

**Loan Loss Provision Ratios, Nonperforming Loans Ratios and Coverage Ratios for Hungary, Romania and Ukraine**

	Hungary		Romania		Ukraine	
	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency
<b>As at Q4 09</b>						
<b>Nonfinancial corporations</b>	%					
Nonperforming loans ratio	6.7	11.5	9.1	9.5	26.7	21.6
Loan loss provisions ratio	2.6	6.5	4.4	4.9	14.1	8.9
Coverage ratio	39.0	56.7	48.3	51.4	52.6	41.1
<b>Households</b>	%					
Nonperforming loans ratio	6.8	20.2	9.0	14.6	28.0	26.0
Loan loss provisions ratio	2.0	5.6	5.9	11.6	16.3	6.3
Coverage ratio	30.2	27.8	65.8	79.8	58.2	24.0

Source: OeNB.

corporate customers (MNB, 2010)<sup>17</sup> as well as focusing foreign currency lending on customers of higher creditworthiness have helped dampen the rise in NPL ratios. Nevertheless cushioning effects can balance depreciation and a deteriorating economic outlook only to a certain extent: The case of Ukraine gives good evidence that a massive economic contraction accompanied by a large local currency depreciation leads to an accelerated increase of foreign exchange rate volatility-induced credit risk.

Due to a lack of country-specific data, we are not able to discern whether natural hedges have played a larger role in Romania and Hungary than in Ukraine, but qualitative information indicates that loan volumes of naturally hedged borrowers have accounted for only a limited share of foreign currency loans. According to OeNB survey data, the share of naturally hedged borrowers

in CESEE and the CIS varied substantially across customer segments and banks. The share of naturally hedged corporate foreign currency borrowers ranged from close to 0% to below 50%, implying that quite a high share of loans had gone to the mainly unhedged nontradable sector.<sup>18</sup> Foreign currency lending to naturally hedged households in CESEE and the CIS was negligible (lower than 10%), indicating that remittances from abroad had played a minor role for borrowers' household income. Historical precedents give evidence of substantial shares of foreign currency lending to unhedged borrowers e.g. in Asia or in Argentina (Bank of Argentina, 2004, and Lindgren et al., 1999).

The higher vulnerability of households to exchange rate volatility-induced credit risk deserves particular attention, as the case of Hungary illustrates: The sectoral structure of foreign currency

<sup>17</sup> This is supported by international financial institutions, like the World Bank Group's IFC, even for long-term loans, of which large corporates took advantage e.g. in Hungary: "[Banks] mainly restructured foreign currency-denominated loans in the large-sized enterprises segment."

<sup>18</sup> In Romania, the share of real estate investment loans in total foreign currency loans to nonfinancial companies increased markedly from 2008 to 2009 (see Dragulin, 2010).

borrowers shows a marked share of households taking out foreign currency loans since 2002/03. Király et al. (2008) conclude that it is households who “are the real foreign currency risk takers,” especially since it is them who support the currency in case of fundamental imbalances. Compared with corporate foreign currency borrowers, households usually have fewer options to financially hedge their (small volume) foreign currency exposures at low costs.

Banks reacted to the rise in foreign currency loan-related credit risk by increasing their provisioning, receiving intra-group guarantees from their parent banks and by restructuring foreign currency loans. In the second half of 2009, the coverage ratios for nonperforming foreign currency loans increased in Ukraine and Hungary (accompanied by a fall in nonperforming local currency loans), and came down from a high level in Romania, where the coverage of nonperforming local currency loans fell in tandem.

Restructuring of foreign currency loans accelerated in the second half of 2009.<sup>19</sup> In Ukraine, the share of restructured corporate foreign currency loans amounted to almost 30% at mid-2009, markedly exceeding the share of restructured local currency loans. In the foreign currency loan book of subsidiaries in Hungary and Romania, the shares of restructured loans reached single-digit levels below the restructuring shares of local currency loans, according to data by four banks included in the OeNB survey. For total restructured mortgage loans,

re-default levels indicated by Hungarian banks amounted to 10% to 20% and for loans linked to repayment vehicles to 20% to 30% (MNB, 2010). By comparison, in the case of Thailand, previously restructured nonperforming loans which later reverted again into the nonperforming loans category accounted for, on average, more than one-third of the total nonperforming loans volume, according to statistics of the Bank of Thailand.

Due to the tendency to delay credit risk-related losses by restructuring, the general vulnerability of the three countries under investigation and the recent rise in country risk, the credit risk of foreign currency loans is expected to continue to rise.

Over the medium term, a further fall in the interest rate differential between lower interest rates on foreign currency loans and higher interest rates on local currency loans in Romania, Hungary and Ukraine may act as the main driver of lowering foreign currency loan-related credit risk on banks' balance sheets.

#### 4.2 Funding Risks

The previous section discussed indirect (credit) risks that arise for banks from lending in foreign currency. This section examines funding and liquidity risks in conjunction with loans and deposits denominated in foreign currency, and thus direct risks to banks. We investigate the existence of “currency mismatches” (i.e. the currency composition of loans does not match the currency composition of deposits) as a consequence of which banks face

<sup>19</sup> We define “restructuring” in this context as the process by which an institutional lender (such as a bank) modifies or relaxes the terms of a loan agreement to minimize the eventual loss by accommodating a borrower who is likely to become financially incapable of meeting them. Restructuring measures entail for example extending the tenor, forgiving part of the loan, restructuring payments before redemption, or any other measures affecting the net present value of the loan.” (see MNB, 2010)

exchange rate risks. If banks do not want to (or are not allowed to) bear these risks, they can hedge either against other on-balance sheet items (e.g. interbank loans) or through off-balance sheet operations (e.g. currency swaps). However, hedging operations increase banks' dependence on financial market stability in general.

In the current crisis the improper functioning of major cross-currency swap markets threatened to result in the occurrence of foreign currency funding risks. In the case of Hungary, for instance, the share of foreign currency loans amounted to about 60% (with Austrian banks accounting for about 63%) and that of foreign currency deposits to 20% in autumn 2008. Together with a loan-to-deposit (LD) ratio of nearly 140% (Austrian banks: about 150%), the actual lack of foreign currency funds was even higher. After the default of Lehman Brothers and the drying-up of liquidity in interbank markets, swap agreements between the Swiss National Bank, Magyar Nemzeti Bank and the ECB ensured the availability of sufficient Swiss franc and euro swaps to refinance hedges for foreign currency loans and calm markets in Hungary. Currency mismatches were less significant in Romania and Ukraine, but LD ratios in these two countries still came to about 140% and 190% respectively. Austrian banks benefitted from euro liquidity and U.S. dollar swap lines provided by the ECB. However, in relative terms, the Swiss franc facility proved to be especially important for Austrian banks, not least because of the domestic Swiss franc-denominated loan exposure. Austrian banks accounted for, on average, 28% of all bids in Swiss franc swap tenders and in July 2009 for even 45%, representing an average share of 2.4% in euro liquidity.

Prolonged swap market illiquidity would have exposed banks to earnings risks (in the best case) and to direct exchange rate risks (in the worst case). Effective hedges prevented the latter, but sharp local currency depreciations caused a deterioration of the structural refinancing position. More precisely, the excess of foreign currency loans over foreign currency deposits in conjunction with weaker local currencies led to a further increase in the LD ratio of Austrian banks' subsidiaries in CESEE and the CIS from 112% in the second quarter of 2008 to 120% in the first quarter of 2009 (or a jump in the deposit gap by 55%) despite the economic downturn. In some countries, Austrian banks' subsidiaries also suffered from deposit outflows due to the decreasing confidence in banks during the crisis (see Dvorsky et al., 2009), though opposite flows were observed too.

Table 3 shows the results of simple cross-section regressions with the change in the LD ratio from the second quarter of 2008 to the first quarter of 2009. In general, the test statistics of the slope

Table 3

### Slope Parameter of Simple Regressions at Bank Level

obs=46 for all countries  
obs=20 for fixed exchange rates  
obs=26 for flexible exchange rates

Dependent variable	Change in loan-to-deposit ratio (Q2 08–Q1 09)	
Independent variables as at Q2 08	Weighted foreign currency mismatch	
All countries	0.378	**
Fixed exchange rates	0.265	
Flexible Exchange rates	0.383	**

Note: Weighted foreign currency mismatch = difference between foreign currency loans and deposits in % of total deposits; \* indicates significance at the 5% level, \*\* indicates significance at the 1% level; sample adjusted for three outliers.



parameters confirm that currency mismatches played a significant role in countries with flexible exchange rates but not in countries with fixed exchange rates. However, the positive correlation in the case of countries with fixed exchange rates is not surprising either, given the possible interpretation of the share of foreign currency loans as either an indicator of the lack of trust in local institutions or a banking risk indicator.

Subsidiaries' higher structural refinancing needs had to be met mainly by parent banks (intragroup funds: +EUR 7 billion or 15%) since local interbank markets remained frozen. In other words, parent banks had to increase their net exposure to CESEE and the CIS while other investors were busy withdrawing funds from the region. As mentioned before, this behavior may have also been a sign of commitment to the region and the right thing to do, but it weakened the funding position of the Austrian banking sector as a whole and added risks to banking sector stability in the home country, especially since some parent banks had overstretched their balance sheets already before the crisis (showing, e.g., LD ratios above 300%). To prevent the occurrence of contagion risks, the Austrian government adopted a large bank support package and did not impose any restrictions on the reallocation of funds. In the course of 2009, Austrian banks focused on "rightsizing" (i.e. mainly downsizing) their CESEE and the CIS activities and managed to reverse some adverse developments against the background of international support.

### 4.3 Earnings Risks

Recent experience gave evidence that an important aspect of earnings risk is related to the increase in the cost of foreign currency funding in the event of

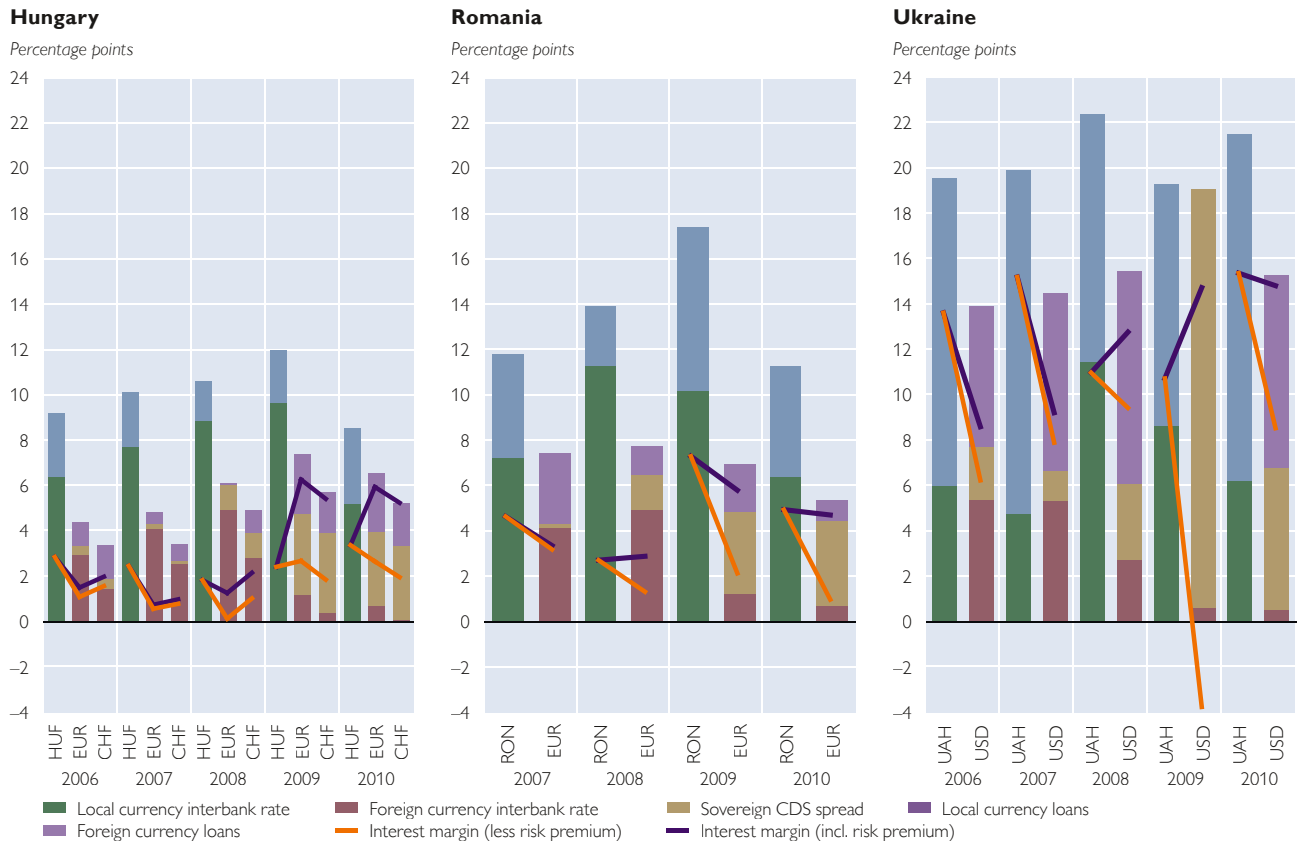
a financial market crisis. An additional, more structural, risk may arise when banks fail to add adequate country risk premiums when setting local lending terms. When parent banks do not adequately account for such risks in their internal funds transfer pricing models, local subsidiaries, having access to cheap funding via their parent banks, may have an incentive to keep lending rates favorable in order to pursue an aggressive growth strategy. Parent banks, on their part, may opt for capitalizing on their funding advantage in order to gain market share. The excessive loan growth rates in the run-up to the crisis indicate that either scenario may have been taking place in CESEE and the CIS.

However, we were unable to detect a significant correlation between Austrian subsidiaries' foreign currency lending and profitability figures (i.e. interest margin and return on assets), despite robustness checks (e.g. deviations from market averages). This indicates that parent banks at least to some extent charge country risk premiums. A shortcoming of our analysis may be the reliance on indicators derived from banks' financial statements, given the lack of more comprehensive and standardized data.

Neither do data on actual interest rates provided by national central banks for the aggregate sector, as illustrated in chart 9, indicate that higher profitability is an incentive for foreign currency lending. However, there is evidence from Austria that noninterest fees and commissions attached to foreign currency loans tend to be higher than those of local currency loans (Epstein and Tzanninis, 2005). First, local currency lending to households (especially in the case of housing loans) appears to have been more profitable than foreign currency lending – on a risk adjusted

Chart 9

**Interest Rates on Loans Granted to Households (New Business) versus Interbank Market Rates (3 Months)**



Source: National central banks.

Note: Interest rates on loans refer to housing loans (except for Ukraine), the reference month for each year is June.

basis – in the run-up to the crisis. This finding is robust to changes in the computation of the interest margin (i.e. deposits instead of interbank funds). Second, the large differences between interest rates charged on local currency loans and those on foreign currency loans may explain the strong demand for foreign currency loans. Third, the jump in risk premiums during the crisis led to a further decrease in the relative attractiveness of foreign currency loans and suggests a general mispricing of risk before the crisis. Fourth, banks may be able to generate additional fee income from currency conversions on behalf of foreign currency borrowers but – in contrast to the Austrian market – not from repayment vehicles linked to

foreign currency bullet loans given their minor importance (as indicated by surveys).

## 5 Conclusions

In the run-up to the current crisis, foreign currency lending to nonbanks was a striking feature of the credit boom in CESEE and the CIS. This paper describes the exposure of Austrian banks, which hold a market share of about 15% in the region (about 22% excluding Russia), to foreign currency loans and discusses associated risks to banking sector stability. For this purpose, we draw on a micro database on Austrian banks which covers direct cross-border lending as well as indirect lending via subsidiaries.

From end-2005 to end-2009, aggregate direct and indirect foreign currency lending by Austrian banks in the region increased by about 75% and 150% respectively, and the foreign currency share in Austrian banks' subsidiaries' loan portfolios was above market average. At the micro level, however, the foreign currency loan portfolios and foreign currency loan shares developed rather heterogeneously.

The sharp depreciations of some of the local currencies in CESEE and the CIS led to the occurrence of indirect credit risks inherent in foreign currency lending. Yet, crude data on the levels of nonperforming loans and loan loss provisions of Austrian banks' subsidiaries do not indicate an overall higher credit risk in the foreign currency loan portfolio. The accelerated deterioration in the respective figures on the credit risk of foreign currency loans, especially the lower coverage ratios, hints at unrealized losses and remaining vulnerabilities (e.g. due to anticipatory restructuring). Moreover, the local currency exchange rate flexibility seems to have played a major role. Evidence on country level even indicates a nonlinear relationship between the occurrence of indirect credit risk from foreign currency lending and local currency depreciation. Loan loss provisions for foreign currency loans in Ukraine, for instance, rose disproportionately more strongly than in Hungary and Romania, given the extent of the currency weakness in the former country. These findings apply to direct foreign currency lending too, but only to a minor extent, presumably due to a larger share of natural hedges and borrowers with generally higher creditworthiness (e.g. subsidiaries of Austrian nonfinancial corporations).

The current crisis also revealed the funding risks inherent in a foreign

currency loan portfolio that is not adequately matched by foreign currency deposits. First of all, the turmoil in interbank markets put a strain on foreign currency risk hedging operations. Second, weaker local currencies resulted in a deterioration of structural refinancing positions. And finally, parent banks did not only have to substitute more volatile funding sources but also meet their subsidiaries' increased refinancing needs. It was the intervention of central banks that avoided a prolonged liquidity squeeze and capital losses due to involuntarily open foreign currency positions.

With regard to earnings risks, we did not find evidence – neither on the basis of individual bank data nor according to aggregate data – in favour of the hypothesis of the higher profitability of foreign currency lending.

Several local authorities took measures to curb foreign currency lending already before the crisis. However, some foreign-owned banks managed to circumvent these regulations, especially via cross-border loans, and thus undermined their effectiveness. International institutions and home supervisors teamed up with host supervisors only when the crisis was in full swing to avoid regulatory arbitrage, develop alternatives and reduce associated financial stability risks. Furthermore, the intervention by governments and international institutions considerably mitigated the crisis impact. In the near future, policymakers must therefore use the momentum and restrict foreign currency lending in order to support a more sustainable growth path while avoiding negative pro-cyclical effects. Current relevant initiatives in Austria include the implementation of the Guiding Principles on Foreign Currency Lending of the Financial Market Authority and the OeNB; at the EU level,

proposals to change the capital requirements for foreign currency loans together with the consultation on responsible lending have been put forward, and at the pan-European level, the “Vienna Initiative Plus” has been launched.

Our most recent data suggest that Austrian banks’ exposure to foreign currency loans in CESEE has been on the decline, at least vis-à-vis traditional carry-trade currencies (i.e. Japanese yen and Swiss franc) and in absolute terms; the decline has been carried mostly by receding foreign currency loan exposures in CIS countries, however, which is not surprising given the lower attractiveness of foreign currency financing for emerging markets in crisis times and authorities’ greater risk awareness.

This paper represents only a first step in the analysis of the build-up, the triggers and the consequences of the (financial) crisis in CESEE and the CIS.

Our findings shed light on certain aspects but are far from conclusive, not least due to data restrictions. Future research should tackle open issues (e.g. dynamics in competition or internal funds allocation of cross-border banking groups) and elaborate in more detail on the different types of risks and their interrelation and on appropriate measures of risks (e.g. profitability). In this context, it will be important to differentiate between taking and the occurrence of risks (e.g. effectiveness of restructuring). Future work could also provide further information on initiatives on foreign currency lending in CESEE. More generally, research has to be conducted on the (macro-economic) costs and benefits of foreign currency lending, especially regarding the establishment of reasonable alternatives to foreign currency lending (e.g. development of local currency markets).

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