FOREIGN BANK PENETRATION AND BANK CREDIT STABILITY
IN CENTRAL AND EASTERN EUROPE

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March 2002

Research Series Supervision no. 43

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Abstract

We analyse the development of foreign bank penetration in Central and Eastern Europe (CEE) and its influence on the stability of bank credit. We measure both cross-border credit and activities of foreign bank subsidiaries within CEE. By combining BIS statistics and BankScope data into a unique database we are able to make a clear distinction between these two kinds of activities. Our analysis shows that the relative importance of foreign bank subsidiaries in CEE has increased considerably during recent years. However, in Estonia, Hungary and Poland foreign banks were also important during the first transition years, as they provided substantial amounts of cross-border credit. We do not find evidence of foreign banks deserting CEE, e.g. during adverse economic times. Although cross-border credit did decrease during some periods, our results show that foreign banks acquired new local subsidiaries or expanded the credit supply of existing subsidiaries at the same time.

Keywords: foreign banks, cross-border credit, transition economies, financial stability

JEL-codes: F36, G21
1. Introduction

The transition from a centrally planned to a market economy, now covering more than a decade, has changed the banking sector in Central and Eastern Europe (CEE) considerably. During communist times banks were merely a vehicle for the government to allocate funds according to the needs indicated by centralised planning. When the communist regimes were overthrown, banks had to start making lending decisions based on commercial criteria. Especially during the early years of transition this proved difficult for many of them. The approaches taken by different governments to reform and strengthen the banking system have been diverse and the results have been very different as well.\(^1\) Since the various approaches have now had some time to develop, we are currently in a position to evaluate aspects of the policies followed.

In this paper we focus on a critical result of these policies: the penetration of foreign banks into the domestic financial system. During the last decade foreign banks have entered several CEE countries, but to different degrees. Some countries regarded foreign strategic investors in their banking system as a means to quickly improve the quality of financial intermediation, whereas others chose to remain relatively closed to foreign bank activity. Critics of foreign bank entry have for instance pointed to the risks for the stability of the local financial system, emphasising the danger of creating a less stable supply of bank credit. Although some research has been done for the Latin American case – where foreign bank penetration is very high as well – the empirical results on foreign bank activity in CEE are still limited. In this paper, we therefore focus on foreign bank penetration in several CEE countries and investigate the stability of different sources of foreign bank credit. In order to do this, we explicitly pay attention to both cross-border credit flows and activities of foreign subsidiaries within the region itself. To this end we combine aggregated data, as published by the Bank for International Settlements (BIS), with data on more than 100 individual banks’ balance sheets, obtained from the BankScope database. This provides us with a unique dataset on the quantitative importance of foreign banks in CEE. In our empirical analysis we limit ourselves to those five CEE

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\(^1\) Zoli (2001) shows that also the costs associated with the banking sector restructuring process differed considerably between countries.
countries which are likely to be among the first to access the European Union: the Czech Republic, Estonia, Hungary, Poland and Slovenia. For each of them, we construct several indicators of foreign bank penetration, illustrating the evolving role foreign banks have played during the transition period.

The paper is structured as follows. First, we review the arguments for and against foreign participation in (emerging market) banking systems in section 2. We also discuss the results of the relevant empirical literature. In section 3 we then describe our own empirical approach as well as the dataset we use. Next, in section 4, we give an overview of the development of the banking system in the various countries using our empirical results. Section 5 concludes on the role foreign banks have played in CEE as regards the stability of bank credit.

2. Foreign bank entry into emerging markets: a concise review of the literature

There exists a lively debate on the positive and negative effects related to the entry of foreign banks into less-developed banking systems. In this paper, "foreign bank entry" refers to lending by foreign banks to domestic firms, either cross-border or by foreign bank subsidiaries situated in the (CEE) host country. Furthermore, “home country” denotes the country where the bank’s headquarter is seated, whereas “host country” refers to the country in which the foreign based bank operates. Generally, the literature on foreign bank entry focuses on the effects on the efficiency and / or stability of the host country banking system.2 In this section we first discuss both the possible positive and negative consequences of foreign bank entry as found in the literature. After that, we summarise the empirical results to date.

2.1 Positive effects of foreign bank entry into emerging markets

The positive effects that are associated with foreign bank entry depend on the specific form of such entry: the extension of cross-border credit or the actual setting up of branches and subsidiaries. In the latter case, several positive external effects for host country banking systems in emerging and transition economies are discerned. First of all, the introduction of foreign bank management practices and

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information technology can improve the efficiency of the domestic banking system, both directly and indirectly by competing with domestic financial institutions (Levine, 1996). Also, foreign banks may start to offer new wholesale and retail financial services and products which are complementary to those already provided by the domestic banking industry. Foreign banks may also stimulate better regulation, accounting standards and the financial and legal structure more broadly. Another possible positive effect is that in times of crisis, foreign bank subsidiaries could be a "safe haven", thereby reducing the flow of domestic funds abroad as residents can now "do their capital flight at home". A related argument is that well-capitalised foreign banks will be able and willing to keep lending to domestic firms, as opposed to domestic banks which will possibly lower their credit supply during adverse economic conditions. Moreover, foreign banks can provide new funds to recapitalise a troubled banking sector.³ Other positive effects of foreign entry are not confined to foreign bank subsidiaries and branches only, but are also the result of the extension of cross-border credit into the host country. Both forms of foreign bank entry may for instance attract (other) foreign direct investments (FDI) as the availability of foreign bank credit reduces the entry costs of (non-financial) foreign firms (Wachtel, 1998). Additionally, a growing supply of foreign bank credit can reduce the costs of obtaining loans for domestic firms since - higher rated - foreign banks generally have access to cheaper funding. Credit may not only become cheaper, but also more accessible as foreign banks will increase the amount of funds that will be available for domestic investments (Dages et al., 2000; Levine, 1996). Importantly, Cardim De Carvalho (2000) mentions that foreign banks may be more independent of the local government and may have less incestuous relations with domestic firms. In sum, the economic literature shows that foreign bank entry may have potentially positive effects for both the efficiency and the stability of the domestic banking system.

³ Cardim De Carvalho (2000), for instance, points out that the Brazilian banking crisis of 1995 proved to be an opportunity for foreign banks to acquire local banks. See also Mathieson and Roldos (2001), whose empirical analysis shows that a banking crisis raises foreign participation and control by about 10 percentage points.
2.2 Negative effects and risks of foreign bank entry into emerging markets

Although the above mentioned arguments may be more or less convincing, there are also arguments against opening up the domestic banking system to foreign banks. To begin with, Peek and Rosengren (2000) mention the often heard concern that foreign bank entry, whether cross-border or by means of local subsidiaries, may weaken the position of the (less-sophisticated) domestic banking system. This may especially be the case when domestic banks are still burdened by large portfolios of bad debt (Buch, 1997; Graham, 2001) or when domestic banks operate less efficiently and are technically disadvantaged. The essence of this argument is that even though foreign entry may lead to a more efficient domestic banking system, which may have important positive welfare implications in the long run, this may be offset by the negative effects in the short run. Domestic banks that are not able to cope with the increased competitive pressures may for instance fail and lead to periods of severe financial instability. Another often heard argument – opposite to the related argument as described in the previous sub-section - is that foreign banks will not stay "loyal" to the host country during an economic downturn, either in the host or in the home country, in the sense that they will not provide additional (or possibly less) credit during such hard times. A related source of concern is that foreign banks only provide credit to the large and often foreign owned (multi-national) firms, leaving the bad corporate credit risks as well as the retail market and the related payment services to domestic banks ("cherry picking"). Even though the economic foundation of some of the above mentioned arguments against foreign bank entry may be disputable, they may nevertheless be prevailing among policy makers. Domestic supervisory and monetary authorities, for instance, often fear that their influence on banks' behaviour may diminish. More broadly, governments may think the banking sector to be too important for economic development to let this sector pass into foreign hands. Graham (2001) concludes that it can be advisable for developing countries to open up to foreign banks if such banks - as is often the case - prove to be more X-efficient than the domestic banking sector. However, the author explicitly notes that such an "imported" improvement in banking sector efficiency may have negative implications for short term financial stability. This will be the case when the domestic banking sector is in such a deplorable state that it is simply unable to survive any foreign competition at all. Addi-
tionally, Graham (2001) notes that from a financial stability perspective it would be wise if the home markets of such foreign banks were to some extent diversified. The diversification effect will then make sure that possible reductions in lending by foreign banks in reaction to home market problems may be less acute.\(^4\) In sum, it appears that the risks and potential disadvantages of foreign entry are not so much related to the efficiency of the domestic banking system but more to the short-run stability of this system.

2.3 Empirical results on the effects of foreign bank entry into emerging markets

The relevance of the arguments for and against the opening up of domestic banking markets to foreign competition ultimately depends on their empirical validity. To begin with, Cardim de Carvalho (2000) finds for the Brazilian case that foreign entry has led to increased competition in the consumer credit segment. He does not find that foreign banks have been more profitable than domestic banks. However, Claessens et al. (2001) show on the basis of a dataset comprising 80 countries that foreign banks in emerging markets have higher interest rate margins and profitability than domestic banks (while the opposite is true for developed markets). Foreign bank entry also leads to a reduction in the profitability and margins of domestic banks, leading to the conclusion that foreign entry enhances the efficiency of the domestic banking system. Interestingly, it appears to be the number of foreign banks rather than their size which is associated with the competitive conditions in the local markets.\(^5\) Apparently, this reflects the fact that domestic banks immediately react to - and are affected by - the entry of foreign banks, even when these banks have not yet gained a substantial market share. Hermes and Lensink (2001), using the same econometric model as Claessens et al. (2001) but focusing instead on less-developed countries (LDCs) only, find that foreign bank entry has a negative impact on income and costs of domestic banks, but only after entry has reached a certain minimum level. In addition

\(^4\) Financial stability risks associated with foreign bank entry in the form of cross-border credit may be of a different nature. McKinnon and Pill (1997) show for instance that when a country has an unlimited access to the international capital markets, e.g. because of an abundant availability of cross-border credit, and the local debtors - being either banks or enterprises - are in addition subject to moral hazard, this will lead to overborrowing and overinvestment.

\(^5\) Demirgüç-Kunt et al. (1998) also find positive efficiency effects associated with the number of foreign banks (rather than their size).
Hermes and Lensink (2001) find that in LDCs both presence and size of foreign banks affect domestic banks' behaviour. Mathieson and Roldos (2001) show that in Central Europe foreign bank subsidiaries have on average higher returns on equity, lower cost-to-income ratios as well as lower problem loans compared to domestic banks.

In contrast with the above discussed results, much empirical research has focused on the effects of foreign bank entry on financial stability or the continuity of the credit supply. Dages et al (2000) show for Argentina and Mexico, and Crystal et al. (2002) for Chile, Colombia and Argentina that (established) foreign banks exhibited stronger and less volatile loan growth than domestic banks. Also during times of crisis, diversity of ownership has contributed to greater stability of credit as foreign banks showed significant credit growth during crisis periods and thereafter. However, Dages et al (2000) also find that domestically owned and foreign owned banks with low problem loan ratios behave similarly, which suggests that bank health, and not ownership per se, has been the critical element in the growth, volatility, and cyclicality of bank credit. Crystal et al. (2002) find that foreign banks can exert a positive stabilising influence on the domestic banking system because they combine a stronger credit growth with more aggressive provisioning behaviour, while at the same time preserving risk-based capital levels. Also focusing on Latin America, Peek and Rosengren (2000) find that foreign bank subsidiaries did not reduce their credit supply during adverse economic times in the host country. Indeed, they viewed such economic problems as opportunities to expand, by acquisition or by growth of existing subsidiaries. However, off-shore lending, where foreign banks provide credit from their home country offices, did in some cases retrench during economic slowdown. Peek and Rosengren (1997) show that the sharp drop in Japanese stock prices starting in 1990, together with binding capital requirements of Japanese banks, led Japanese bank branches in the USA to reduce their credit supply. However, these effects were much weaker for Japanese bank subsidiaries, as these are not included in the balance sheet of the parent bank and are thus less directly exposed to the parent’s capital constraints. Finally, Demirgüç-Kunt et al. (1998) find that foreign bank participation

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6 The relatively high rate of provisioning was especially found at acquired banks, suggesting that these banks may now apply tighter credit review standards to their portfolios.
lowers the probability that a country will experience a banking crisis. Graham (2001) notes that in many countries domestic banks have proved to be able to cope with foreign competition. This observation is in line with the results of for instance Claessens et al. (2001) and Goldberg et al (2000).

The empirical research to date demonstrates that opening up domestic banking markets to foreign bank entry is likely to improve the efficiency of the domestic banking system. At the same time, such an increased market efficiency does not have to be accompanied by a higher chance of financial instability. In fact, empirical results point out that the entrance of foreign banks tends to lower the probability of a banking crisis. Also, the above described results show that especially local bank subsidiaries will be inclined to keep granting credit during periods of economic distress. However, cross-border credit - and also credit extended through local branches instead of local subsidiaries - may be less stable during adverse economic times. In sum, the evidence to date suggests that foreign bank penetration into host country banking systems can have positive effects for both the efficiency and the stability of these domestic banking systems. A trade-off between market efficiency and stability is thus not self-evident at all.

3. Measuring foreign bank penetration in CEE

According to Wachtel (1998) two distinct aspects of foreign banking activity can be distinguished: cross-border activities of banks and the activities of local bank subsidiaries in the host country itself. Given the underdeveloped state of the domestic banking sector in CEE we expect that foreign bank credit has played a relatively important role in financing the transition economies. To gain more insight into the relative importance of (1) cross-border credit, (2) financing by foreign bank subsidiaries and (3) financing by domestic banks, we combine BIS data on consolidated international bank claims with BankScope data on lending by both foreign bank subsidiaries and domestic banks within the

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7 Again, as with the effect on banking efficiency (Cf. footnote 5), the positive effect on banking stability seems to depend on the number of foreign banks rather than their (relative) size.

8 An important condition for the absence of this trade-off is that foreign entry goes together with, or is preceded by, adequate measures to deal with the problems of the most fragile domestic banks. Also, higher efficiency and increased stability may be reached by providing for effective banking supervision and by ensuring that the foreign banks are diversified with regard to their home countries.
CEE host countries. After a first analysis of this combined database, we construct four measures of foreign bank penetration, using the methodology as first applied by Peek and Rosengren (2000) to Latin America. These four measures enable us to analyse the lending and deposit taking by brick-and-mortar foreign bank subsidiaries as well as true cross-border lending. We are especially interested in any differences between changes in cross-border credit, foreign subsidiaries’ credit and domestic banks’ credit.9

As stated, we combine two data sources in our analysis. First of all, we employ consolidated BIS data on total on-balance sheet claims by BIS reporting banks on the five CEE countries we study. These data refer to the consolidated exposures vis à vis a particular CEE country of the banks headquartered in any BIS reporting country. They include the local claims in non-local currencies of the foreign affiliates - both subsidiaries and branches - of these banks in CEE.10 To obtain the total foreign claims, i.e. not only foreign currency claims but local currency claims as well, we combine the cross-border claims (in all currencies) and the foreign currency claims of reporting affiliates in CEE with the local currency claims of these affiliates. Furthermore, we want to avoid double-counting if a foreign bank has a claim on another foreign bank that then lends to local firms. To prevent such double-counting, we subtract the claims on banks with head-offices outside the particular CEE-country from the total consolidated claims.11

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9 Talley et al (1998) show that since 1993 debt flows (loans and bonds) have accounted for about 50% of net private inflows (which also includes FDI and equity investments) into CEE. Moreover, commercial banks own a substantial part of this debt, which is to a large extent absorbed by the domestic banking system. However, the BIS-data the authors use for deriving the consolidated “cross border” claims include the local claims of foreign affiliates of the reporting banks. Such local claims may behave rather differently compared to true cross-border - or off shore claims, as is indeed shown for Latin America by Peek and Rosengren (2000) and for CEE by our own results.

10 Positions between offices of the same bank are netted out. Our data exclude 4 of the 24 reporting countries (Singapore, Saudi Arabia, Taiwan and Turkey) since banks headquartered in these countries have started to report to the BIS only very recently. The BIS-claims include most kinds of financial assets, such as deposits and balances with other banks, loans and advances to banks and non-banks, holdings of securities, and loan participations and syndications. For the period 1993-1999 we interpolated the semi-annual data to obtain quarterly series. After 1999 the BIS provides quarterly data.

11 Cross-border claims in all currencies and local claims in foreign currencies are reported by the BIS as one inseparable series only. Local claims in local currency are reported as a separate series. More specifically, we used the BIS Data Bank Block M (“International Banking Statistics and External Debt”) and subtracted data type J (“cross-border claims - with head offices outside the country”) from the sum of data types A (“cross-border claims in all currencies and local claims in non-local currencies”) and L (“local currency claims on local residents”). Columns A, L and J are depicted in the third pane of figures 2-6 by means of the solid, striped and dotted lines respectively.
In addition to the BIS data, we use individual bank data from Fitch IBCA's BankScope database (annual frequency).\textsuperscript{12} For us, the value of this data source is that it provides complementary data on both the domestic banks in CEE and on foreign bank subsidiaries from non-BIS reporting countries. Of course, it also provides data on the BIS-reporting foreign bank subsidiaries, but their claims are included in the consolidated BIS-data as well. We obtained balance sheet and income data on individual banks and bank subsidiaries that were included in BankScope for the period 1993-2000.\textsuperscript{13} Before 1993, independent CEE banks had only just emerged and the quality of balance sheet data is therefore questionable. After 2000, BankScope data were - at the time of the writing of this paper - only available for a limited number of banks. For every year in the 1993-2000 period we labelled each bank with the dummy “domestic” or “foreign”.\textsuperscript{14} This “manual” ownership classification of each bank / year combination was necessary because the BankScope database only gives information on ownership structure for the point in time this database is last updated (in our case November 2001). Since changes in ownership structure in the CEE banking sector have been frequent during the transition process and since we are particularly interested in the relative importance of domestic versus foreign banks, we thought it essential to carefully unravel all the ownership changes in our sample period. Furthermore, if a specific domestic - say Polish - bank was taken over \textit{in the course} of 1995, it was considered to be “domestic” for the 1993-1995 period (including 1995) and “foreign” for the 1996-2000 period.\textsuperscript{15} The consulted sources for the ownership dummy and changes therein were Reuters, individual bank web sites, economic and business publications on the subject, and correspondence with CEE central bank and supervisory officials. All in all, we switched the ownership dummy from

\textsuperscript{12} This database has three main advantages: (1) comprehensive coverage, as about 90% of the assets in each country are covered by the banks included; (2) Fitch makes an effort to adjust individual bank accounts for differences in reporting and accounting standards, and additionally puts the accounts into a standardised global format; (3) individual bank data can be used which are usually not available from official sources. The main drawback is that the activities of some foreign branches are not captured, which can lead to an underestimation of the level of foreign participation (Mathieson and Roldos, 2001).

\textsuperscript{13} Our focus in this paper is on banks and their financing of the private non-bank sector. We therefore included only commercial banks, savings banks, co-operative banks, real estate / mortgage banks and medium and long term credit banks in our sample. We excluded such categories as securities houses, non banking credit institutions, specialised governmental credit institutions, central banks and multilateral governmental banks.

\textsuperscript{14} We considered a bank to be foreign if foreign shareholders hold 50% or more of total equity.

\textsuperscript{15} Additionally, we further divided all foreign bank subsidiaries into those with their headquarter in a BIS reporting country and those headquartered in a non-BIS reporting country.
“foreign” to “domestic” 34 times. Finally, we aggregated the BankScope data on individual banks for each country and each year. These aggregated figures for both domestic bank credit and credit by foreign bank subsidiaries were calculated by subtracting non-earning assets, equity investments and fixed assets from the sum of total assets and loan loss reserves.

Figure 1 summarises the data we use and its sources (all data refer to stock variables). Firstly, as the figure illustrates, we have data on total claims by BIS reporting banks on the individual CEE-countries. These comprise both lending by CEE-located foreign bank affiliates with a BIS reporting headquarter as well as the cross-border lending by these headquarters themselves. Secondly, we have BankScope data on foreign bank subsidiaries located in CEE, irrespective of whether their headquarter reports to the BIS or not. Thirdly, we have data on lending by domestic CEE banks. As a result, the only bank credit source of CEE enterprises we miss, is cross-border claims by non-BIS reporting foreign banks. However, note that BIS cross-border credit (topmost arrow in figure 1) and foreign currency denominated credit by BIS reporting bank affiliates (“$-arrow” in figure 1) are reported by the BIS as one series only (see footnote 11). To get the separate amount of “true” cross-border credit, we first add the local currency denominated credit by BIS reporting foreign affiliates (“local currency”-arrow in figure 1) to this combined series. We now have a measure of all credit extended by BIS reporting banks to a particular CEE-country, whether cross-border or through a local affiliate and irrespective of the currency of denomination as well. After that, we subtract the total amount of credit extended by the foreign BIS reporting subsidiaries, as taken from BankScope (topmost dashed arrow in figure 1). By combining BIS and BankScope data we thus create a measure of the amount of cross-border or off-shore credit from BIS-reporting countries into CEE.

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16 In these cases, the ownership information from BankScope for the year 2001 showed that the bank in question was foreign owned. When our additional information indicated that this bank was taken-over in for instance 1996, we changed the dummy from “foreign” to “domestic” for the year 1996 and before. We made the following number of dummy changes in each year: 8 in 2000, 9 in 1999, 2 in 1998, 8 in 1997, 2 in 1996, 2 in 1995 and 3 in 1993.

17 Since the importance of non-BIS foreign bank subsidiaries in CEE proves to be very limited (cf. footnote 20), we expect that cross-border credit flows from non-BIS reporting foreign banks are not very substantial either.

18 Note, however, that this measure also includes credit extended through foreign bank branches in CEE.
In conclusion, the data set we have created has three main advantages: (1) it captures both cross-
border and within host country foreign bank activity, (2) it includes foreign subsidiaries from non BIS
reporting banks and (3) it gives a factual picture of the development of foreign bank subsidiaries’
activities since the ownership structure of all banks in the sample has been examined for each separate
year.

4. **Empirical results**

In this section we discuss our main empirical results. In sub-section 4.1 we give a detailed analysis of
the development of foreign banking in each of the countries we study. We first use two relatively sim-
ple indicators of foreign bank penetration based on the BankScope database: the number of foreign
banks relative to domestic banks and the amount of assets owned by foreign banks relative to total bank assets. Furthermore, we discuss the total BIS-claims to each country. These figures reflect the development of the total stock of credit - both cross-border and claims by local subsidiaries - granted by banks headquartered in a BIS reporting country (see footnote 11). We also discuss the sectoral division of BIS-credit (see table 1). Additionally, we analyse true cross-border credit from BIS-countries, credit by foreign bank subsidiaries (both BIS and non BIS-reporting) and credit by domestic banks. These numbers – both absolute and in percentages of GDP - can be found in tables 2-7. After that, sub-section 4.2 describes our computations of a more sophisticated measure for foreign bank penetration, which also includes cross-border credit. Finally, sub-section 4.3 summarises our findings and compares these results with those on foreign bank activities in Latin America.

4.1 Foreign bank penetration in CEE: a country analysis

Estonia

In 1992 the Estonian banking system became independent of the former Soviet system. Soon after, a banking crisis emerged. Estonia conducted a rather strict bank restructuring program and no new licenses were granted to either domestic or foreign banks for some time during 1993 and 1994. Additionally, during the 1993-1994 period, eight banks were declared bankrupt and another 14 banks were forced to merge as they no longer met the minimum capital requirements. During the next years the Estonian banking sector concentrated even further. Entrance of Swedish banks started in 1999. Both developments were partly a reaction to the Asian and Russian financial crises which put some strain on the Estonian banking system in 1998.

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19 All tables can be found in the appendix to this paper.

20 Cf. section 3. The number of non BIS foreign bank subsidiaries proved to be very limited. In 2000, only one Czech subsidiary operated in Poland and a Russian and a Korean one in Hungary. In addition, these banks were very small. In terms of total assets, the Czech subsidiary took up the 26th position in Poland (out of 30 banks in our sample) and the Russian and Korean banks the 8th and 20th position, respectively, in Hungary (out of 23).

21 Number of banks, amount of foreign assets, total BIS credit and cross-border credit are shown in pane 1 through 4, respectively, of figures 2-6.

22 A list of all banks that have ceased to operate in Estonia can be found at www.ee/epbe/en/panking.html.
Figure 2  

Estonia

![Graphs showing number of banks, total assets, BIS credit, and crossborder credit over years 1993 to 2000.]

Source: Bankscope, BIS, and authors’ calculations.

Legend: For the top two panes Total —, Foreign A, Domestic O. For bottom left pane: Column a — ("cross-border claims in all currencies and local claims in non-local currencies"), Column l - - - ("local currency claims on local residents"), Column j - - ("cross-border claims - with head offices outside the country").

Figure 2 clearly shows the consolidation process the Estonian domestic banking market went through at the end of the 1990’s, as well as the entrance of a few (large) foreign banks in the course of 1999. However, the limited number of banks in 1993 and 1994 – two and three respectively – reflects the fact that many small credit institutions, that went bankrupt during these years, are not included in our BankScope dataset. Although the number of foreign banks equals the number of domestic banks in 2000, these two Swedish-owned banks (Hansabank and Eesti Ühispank) are by far the largest banks in Estonia. They make up the bulk of the small Estonian banking market, holding 91% of all banking assets in 2000. Figure 2 also shows that foreign credit was nearly absent before 1994 as the banking sector was recovering from the 1992 banking crisis. Foreign bank activities started to increase significantly only after 1996. Before 2000, the third and the fourth pane essentially show the same picture, as foreign bank subsidiaries were completely absent. Remarkably, pane 3 shows that foreign bank subsidiaries do not grant any credits denominated in the Estonian Kroon. Because of the currency

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23 Which show up as “foreign” in our BankScope data in 2000.
board arrangement in Estonia, banks purchase in effect only euros from the Bank of Estonia and pass on the exchange risk to their borrowers by lending in euros as well.

Foreign credit dropped only temporarily - by almost 6% - during the first half of 1999, when the Estonian banking system experienced another crisis in a reaction to the Asian and Russian crises. Striking is a temporary drop in foreign bank credit during the third quarter of 2000 (-13%), largely due to a reduction in credit to the private sector. As table 1 shows, about two thirds of foreign bank credit in Estonia is nowadays allocated to the non-bank private sector.25 In 1999, domestic banks - then still including Hansabank and Eesti Ühispank - still absorbed almost 54% of foreign bank credit. Foreign credit to the public sector has been limited throughout the whole of the transition period. Finally, tables 5-7 give more insight into the importance of different kinds of credit for the Estonian private sector.26 During the transition period, cross-border credit into the country gradually increased, but sharply declined in 2000 as foreign banks bought local subsidiaries. In 1999, cross-border credit and domestic bank credit amounted to 30% and 51% of GDP respectively, while no local foreign subsidiaries were present in the country. In 2000, this situation had changed dramatically. Foreign subsidiaries’ credit supply is as high as 53% of GDP, largely resulting from substitution of domestic assets into foreign assets (the former now account for only 6% of GDP). Cross-border credit has shrunk as well: to 5% of GDP.

Hungary

The Hungarian banking market was opened for foreign banks as early as the beginning of the 1980's, when foreign banks were allowed to set up subsidiaries in Budapest. A two-tier banking system was established in 1987, but banks were burdened by bad loans dating from communist times. In 1992 a very stringent bankruptcy law was introduced, followed in 1992-1993 by the Loan Consolidation Pro-

24 Cf. footnote 13.
25 A sector-by-sector division of the pure cross-border figures as shown in pane 4 is not possible.
26 Note, however, that cross-border credit in table 5 includes credit to domestic banks. Insofar this is the case, table 5 will overestimate the importance of cross-border credit as a source of finance for CEE enterprises, since the ultimate financing of CEE firms is not done by the foreign bank itself but by a domestic bank. Such financing is then already accounted for in table 6. Still, one should not forget that in case this cross-border credit to local
gram to clean banks’ portfolios from inherited bad loans. At a later stage, bank support was combined with privatisation, mostly to foreign strategic investors, and coupled with imposing hard budget constraints. The privatised Hungarian banking sector withstood the 1998 Russian crisis relatively well and in many cases foreign strategic owners provided additional capital when needed (Wagner and Iakova, 2001).

**Figure 3 Hungary**

The first pane of figure 3 shows the development of the number of Hungarian banks. It clearly reflects the divergence in the development of domestic and foreign banks during the second half of the 1990’s. During that period, the number of banks which were majority owned by foreign strategic investors gradually started to rise as a result of the privatisation strategy of the Hungarian government. The selling of these majority stakes to foreign banks is being mirrored in a decline in the number of banks that remain majority owned by Hungarian shareholders. Whereas the foreign banks already outnumbered the domestic banks in 1993, the amount of foreign assets only outgrew total domestic assets in 1998. In 2000, 71% of all banking assets were in foreign hands. Total BIS-claims to Hungary were
already relatively high at the beginning of the transition period, mostly reflecting large amounts of
cross-border credit. Cross-border credit declined during the first half of the 1990’s but increased again
during the second half. In 2000, cross-border credit amounted to as much as 17% of GDP. This is
extremely high when compared to credit by domestic banks, which was only 15% of GDP in 2000.
Local currency claims by foreign bank subsidiaries started to take off from the second half of 1997,
reflecting the successful completion of the bank rehabilitation process at the end of 1995. After banks
were recapitalised, the government started to seek foreign investors to acquire stakes in these banks.
From 1996 onwards, foreign banks started to invest as the Hungarian economy recovered and the po-
litical framework proved stable (Storf, 2000).

The growth in foreign credit was interrupted briefly during the first half of 1999, in the wake
of the Russian crisis, when cross-border credit and foreign subsidiary credit in foreign currencies de-
clined by 14%. At the same time, local currency claims by foreign bank subsidiaries actually in-
creased by 17%. During the last decade Hungarian banks and the public sector gradually receive
smaller shares of the total amount of foreign credit, whereas the non-bank private sector has profited
most from the increase in foreign bank credit. In 2000 it received 34% of all foreign credit, still below
the share which is absorbed by the domestic banks (43%).

Poland
In 1989 the commercial banking activities of the monobank were split off from the Polish National
Bank. The nine new commercial banks were split along regional lines, whereas in many other transi-
tion economies the new banks were divided on the basis of customer type. In 1993-1994, Poland im-
plemented a program to solve the bad loan problems at banks and to promote enterprise restructuring
at the same time. The regional commercial banks and the former state-owned special banks had to
establish loan work-out departments, which co-operated with foreign partner banks (twinning ar-
rangements). Poland thus used a strategy in which a bank-led work-out program for bad debts, re-
capitalisation and a strategy for privatising commercial banks were combined. Foreign banks that
wanted to set up a Polish subsidiary or wanted to acquire a Polish bank between 1993 and 1997 had to
pay an "entrance fee". This meant that they either had to take over a troubled bank or had to purchase Polish government securities at special terms (Storf, 2000). During 1999 and 2000 the Polish government was committed to privatise the regional banks and many of the government ownership stakes were sold to foreign strategic investors.

Figure 4  Poland

Source:  Bankscope, BIS, and authors’ calculations.
Legend:  For the top two panes Total — , Foreign --- , Domestic - - -. For bottom left pane: Column a — ("cross-border claims in all currencies and local claims in non-local currencies"), Column l - - - ("local currency claims on local residents"), Column j --- ("cross-border claims - with head offices outside the country").

Figure 4 shows the consolidation process in the domestic banking sector and the related increase in the number of banks that are majority foreign owned. The pace of domestic consolidation has nevertheless been quicker than the increase in the number of foreign banks, resulting in a decrease in the overall number of banks during 2000. In that year foreign bank subsidiaries also outnumbered domestic banks for the first time. However, the amount of foreign assets only just equalled the amount of domestic assets. The second pane nevertheless shows a clear upward trend in the importance of foreign bank assets compared to domestic assets. This is also reflected in the development of the amount of credit by foreign subsidiaries which is granted in Zloty (pane 3). This started to rise steeply as from the second half of 1996 and even became the most important “foreign” credit source by the end of 2000. Almost 50% of all foreign bank credit is nowadays directed to Polish enterprises. A further 20%
and 30% is allocated to the public sector and domestic banks respectively. In 1992, domestic banks’ share in absorbing foreign credit was more than twice the current share.

During the 1993-1995 period cross-border credit shrank substantially, and this decline was only partly offset by an increase in credit granted by foreign bank subsidiaries. Noteworthy is that there was no significant decline in BIS claims to Poland during or after the Russian financial crisis. During the transition process cross-border credit had gradually become less important for Poland and amounted to only 4% of GDP in 2000. In contrast, foreign bank subsidiaries have grown spectacularly since 1997 and their credit supply amounted in 2000 to about 19% of GDP. In the same year domestic bank credit was just a bit more important, as it amounted to 20% of GDP.

Slovenia

Slovenia’s oligopolistic banking sector is still characterised by a very high share of government ownership as privatisation plans are still being delayed. The share of majority state-owned banks in total bank assets in Slovenia was about 37% at the end of 2000 (Kouyoumdjian, 2001). Until February 1999, when a new Banking Act was passed, foreign banks were prohibited from establishing branches in Slovenia. However, after the easing of this restriction, foreign banks were still not very eager to penetrate the concentrated Slovenian retail market.27

Figure 5 shows that the domestic banking sector has gone through a consolidation process in recent years, starting with the establishment of four banking groups in 1997. The number of foreign banks has been stable - four since 1998 - as the privatisation of the state-owned banks had not yet started. This is also reflected in a small and stable foreign bank presence, which has moved to a somewhat higher level since 1998.

27 However, in May 2001 Société Générale bought a 96.5% stake in SKB, the third largest bank as measured in assets.
In 2000, less than 15% of all banking assets were in the hands of foreign banks. Foreign credit to Slovenia is modest, but has been rising steadily during the 1990s and did not decline around the time of the Russian crisis. In the absence of any serious foreign competition, the importance of the Slovenian domestic banking system for the domestic economy has gradually increased from 12% of GDP in 1993 to 59% in 2000. Interestingly, the closed character of the Slovenian economy has not led to a low level of financial depth as domestic credit has increased steadily during the last 10 years. In Slovenia, foreign credit is allocated rather evenly to banks, non-bank private enterprises and the public sector. Noteworthy is that during the last ten years, banks’ share has declined in favour of that of the public sector.

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28 According to Kouyoumdjian (2001) foreign penetration was even as low as 12%.
29 However, a sharp but temporary decline took place in pure cross-border credit in 1998 as shown in pane 4. Most likely, this is a temporary statistical bias due to the fact that we computed the amount of cross-border credit by immediately subtracting all credit of the new Slovenian foreign bank subsidiary from the BIS-figures, whereas these last figures did probably not yet contain all of the new credits in that year.
30 When we add cross-border credit, foreign subsidiary credit and domestic bank credit and divide this by GDP we get a measure of total financial depth. In 2000 total financial depth was respectively 63% (Estonia), 68% (Hungary), 43% (Poland), 78% (Slovenia) and 89% (Czech Republic). It is striking that Slovenia has managed to reach a reasonable level of financial depth, without allowing substantial foreign bank activities. However, finan-
Czech Republic

In the Czech Republic, foreign banks have been allowed to establish subsidiaries and acquire stakes in domestic banks since 1990, whereas branches have been allowed since 1992 (Buch, 1997). The privatisation of the large Czech banks was deferred and a consolidation bank (Konsolidacni Banka, KOB) was established in February 1991 to recapitalise banks in trouble. During 1991-1993 a first round of bank recapitalisation took place to clean up the balance sheets of the state-owned banks from the stock of inherited bad debt. In 1996-1997 the country experienced a bank run (Agrobanka) and a second consolidation program was started to clean the portfolios of small and medium banks. Due to poor economic conditions, the clean up of the banking system and the restrictive monetary policy, credit to the private sector has been declining since 1997 (Wagner and Iakova, 2001 and The Economist, 2001). As from 1998 many of the large banks were privatised by selling them to foreign strategic investors.31

Figure 6 illustrates the consolidation process in the Czech domestic banking sector, resulting in a declining number of domestic banks. This process is only partly the result of the privatisation of state-owned banks to foreign strategic investors. It is also related to the economic downturn starting in 1997 and the stricter loan classification and provisioning rules the authorities introduced after the currency crisis of May 1997. Pane 2 shows that during the recession years 1998 and 1999, and also during 2000 total domestic assets decreased sharply. Yet, during those same years, foreign bank subsidiary assets increased and whereas in 1999 this increase was not enough to offset the declining amount of domestic assets, in 2000 it was large enough to curb the declining trend in total banking assets. In this year foreign bank assets rose to about 41% of all banking assets.32 In addition, the striped line in the third pane shows that the increase in foreign bank subsidiaries’ credit during the

31 Investicni a Postovni Banka (IPB) was sold to Nomura International (a non-strategic investor) in 1998, Ceskoslovenska Obchodni Banka (CSOB) to the Belgian KBC Bank in 1999 and Ceska Sporitelna (CS) to the Austrian Erste Bank in 2000. In that same year, IPB was taken over by CSOB which was then already owned by KBC Bank.
32 Note that the sale of CS and IPB in 2000 and the sale of Komercni Banka to the French Société Générale in June 2001 do not yet show up in our 2000 figures. When taking into account the sale of these three large banks to foreign strategic investors, foreign ownership rises to almost 95% of all bank assets.
recession years 1998-1999 (+172%) is denominated in Czech Koruna. In contrast, the solid line in this pane shows that during the same period, cross-border credit together with foreign affiliates’ credit in foreign currencies declined (-10%).

Figure 6  Czech Republic

Pure cross-border credit (pane 4) declined with 7% during this period and with another 18% in 2000. Thus, while during the recession period domestic credit contracted sharply and cross-border credit declined to a somewhat lesser extent, foreign subsidiaries’ credit, chiefly denominated in Czech Koruna, did increase. However, in absolute terms the increase in foreign subsidiaries credit (+ USD 8.8 billion) was not enough to completely offset the decline in domestic credit (-USD 17.3 billion) and cross-border credit (- USD 1.5 billion) during the 1998-2000 period. About 44% of all foreign credit into the Czech Republic is absorbed by the local banking system, 48% by the non-bank private sector and only 7% by the public sector.

On the one hand, the increase in foreign bank assets and the simultaneous decrease in domestic bank credit reflects positive, respectively negative, autonomous growth of both bank categories. On the other hand, it also reflects the effect of the taking over of domestic banks by foreign banks. How-
ever, in both cases the increase in foreign bank subsidiaries’ credit reflects the fact that foreign banks were not scared off by problems in the host country but instead expanded their local activities. At the same time, cross-border credit actually showed a significant decline.

4.2 Including cross-border credit in the measurement of foreign bank penetration

The above discussion - and more specifically tables 5-7 - shows that cross-border credit has been an important source of foreign bank credit in CEE. For example, in 2000 cross-border credit into Hungary still amounts to 20% of GDP. Traditional measures of foreign bank penetration, such as number of banks and the relative size of foreign subsidiaries’ assets may then underestimate the true amount of foreign bank penetration. A brief look at tables 5-7 shows that this is indeed the case for the countries we study. In 2000 cross-border credit amounted to 9%, 47%, 22%, 91% and 29% of credit by foreign bank subsidiaries in Estonia, Hungary, Poland, Slovenia and the Czech Republic respectively. Therefore, cross-border credit should be explicitly taken into account in our measurement of foreign bank penetration. We do this by constructing the following measures of foreign bank penetration for each year and for each country (Peek and Rosengren, 2000):

1. Broad loan measure

For this measure we first calculate total foreign credit as total BIS claims plus credit by non BIS reporting foreign subsidiaries.33 As stated before, the only claims that are now still missing are cross-border loans by banks from non BIS reporting countries booked by the parent bank rather than through a CEE subsidiary. This sum is divided by the sum of the total BIS claims, credit by non BIS reporting foreign subsidiaries and the claims of all domestic banks. This measure thus explicitly takes into account the fact that foreign banks can very well participate in CEE without actually opening or buying local subsidiaries, but simply by extending cross-border credit to local firms. Note that this

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33 We also calculated this broad loan measure by using total BIS claims minus claims on the local banking sector in both the numerator and the denominator. After all, one could argue that a penetration measure should only measure the credits to the ultimate debtors and not to host country financial intermediaries such as banks. Since the resulting broad loan measures showed a very similar development over time, only on a somewhat lower level, they are not reported in this paper.
broad loan measure also includes credit through BIS reporting foreign branches - as opposed to foreign subsidiaries - since such credit is included in the consolidated BIS banking statistics as well.

2. Narrow loan measure

The second measure of bank penetration focuses on lending through foreign subsidiaries within CEE only and thus ignores cross-border credit. It is calculated as credit by foreign subsidiaries (from both BIS reporting and non BIS reporting countries) divided by claims of foreign subsidiaries and domestic banks. This measure thus equals the asset measure as described in pane 2 of figure 2-6.

3 + 4. Broad and narrow funding measure

These two measures focus on bank liabilities rather than bank assets. First, we use a limited measure of deposits, which includes demand deposits, savings deposits, and time deposits (narrow funding measure). Secondly, we construct a more expansive funding measure that - besides other categories of deposits such as interbank deposits - includes total borrowed funds like open market funding and other short-term borrowing (broad funding measure). For both measures, we compare funding by all foreign subsidiaries to the total funding by foreign subsidiaries as well as domestically owned banks. As Peek and Rosengren (2000) remark, the deposit penetration measure (measure 3) focuses particularly on foreign participation in the retail market whereas the loan measures may also capture the operations of foreign banks in the wholesale markets. Figures 7-11 show the development of foreign bank penetration for each country as measured by the four Peek and Rosengren measures.
For Estonia, the narrow loan and both deposit measures show that before 2000 no foreign subsidiaries were active in this country. With the entrance of the Swedish strategic investors Swedbank and SEB in 1999 more than 90% of credit that was granted by local banks became foreign owned. However, the broad loan measure, which also encompasses cross-border credit granted by foreign banks located outside of Estonia decreased from 64% in 1993 to 11% in 1996, reflecting the declining importance of cross-border credit relative to domestic credit. Between 1996 and 1999 the measure increases again to 37%, as cross-border credit gradually gains in importance again. Then in 2000, the broad loan measure jumps to 91%, as domestic credit is “bought” by foreign strategic investors when domestic banks are turned into foreign subsidiaries.
For Hungary, the narrow loan and the deposit measures follow the same pattern, suggesting that the relative importance of foreign subsidiaries compared to domestic banks did not differ much between the asset and the liability side of the banking system. These three measures show that during our sample period, the foreign bank penetration of the Hungarian banking market gradually increased. In 1993, foreign subsidiaries’ market share was only about 22%. In 2000 this number had increased to 71% at the asset side and around 63% at the deposit side. When we broaden our view and take into account cross-border credit as well, this figure is even higher. It then appears that in 2000 even 78% of all credit granted to Hungarian firms originated from a foreign bank, located either within or outside the Hungarian borders. Interestingly, the data show that during the beginning of the transition period, foreign credit played an important role in the Hungarian economy as well. As early as 1993, more than 60% of all credit was foreign in nature. This percentage declined during the following period, but was never lower than 42%. This decline was the result of a sharp increase in domestic credit combined with only a limited rise in total foreign bank credit. Cross-border credit even declined between 1993 and 1996, but was more than offset by an increase in foreign bank subsidiaries’ credit. This possibly points to a substitution process in which banks started to grant credit from within Hungary’s borders instead of cross-border. The fact that the broad loan measure has been increasing much slower than the increase in the narrow loan measure shows that in Hungary an increasing share of
foreign credit can be attributed to foreign bank subsidiaries located in the country itself, rather than to cross-border lending.

**Figure 9 Foreign bank penetration in Poland**

For Poland, the last three penetration measures show an increasing importance of foreign subsidiaries in this country. By 2000 their market share was about 50% on the credit side and 45% on the deposits side, the result of a rather dramatic increase since the beginning of the nineties when foreign subsidiaries’ market share did not exceed 5%. However, as in Hungary, Polish banks were not unimportant at the beginning of the transition process. Indeed, our broad loan penetration measure shows that when we include cross-border credit in our analysis, 42% of all credit was of foreign origin in 1993 (2000: 54%). Foreign banks’ influence on the Polish economy thus appears to have been larger than would be estimated on the basis of more conventional measures that focus only on bank credit granted within Poland itself. Between 1993 and 1996 the broad loan penetration measure declines to 19% as the decline in cross-border credit is only partly being counterbalanced by an increase in credit by foreign subsidiaries. After 1996, this measure goes upward as cross-border credit starts to increase and locally granted credit by foreign subsidiaries increases further as well.
For Slovenia the picture is rather different. All four measures remain relatively low during the whole sample period. The three penetration measures that focus on local foreign bank subsidiaries only show a very low level of foreign penetration of about 7% in 1993 and 14% in 2000 (in full due to the entrance of foreign bank subsidiaries in 1998). The broad loan measure increases more gradually, from 12% in 1993 to 24% in 2000. These results show that foreign bank activity in the relatively closed Slovenian economy is still very limited. The fact that until now most of the banking sector has remained in state hands, is reflected in the low level of the second, third and fourth penetration measure, which even decreases between 1998 and 2000. This decrease probably reflects the fact that recently acquired subsidiaries have shown relatively defensive behaviour, focussing for instance on cleansing their balance sheets.\textsuperscript{34} As a result, credit granted by foreign subsidiaries declined between 1998 and 2000.

\textsuperscript{34} Cf. Crystal et al. (2002) who find similar behaviour for newly acquired bank subsidiaries in Latin America.
Finally, the Czech graphs show a rapid increase in all four penetration measures. The narrow loan measure increases from 4% in 1993 to 41% in 2000. The penetration of foreign bank subsidiaries into the deposit market has been somewhat lower: from about 3% in 1993 to 34% in 2000. When we compare this with the broad loan measure, we find an increase from 6% in 1993 to 48% in 2000. In contrast with Poland and Hungary, the role of cross-border credit into the Czech Republic thus seems to have been less important, especially during the first years of the transition period. Also note that even though cross-border credit declined between 1997 and 2000, this does not show up in the broad loan penetration measure, as this decline was more than offset by an increase in foreign subsidiaries’ credit. Also, domestic bank credit decreased substantially during this period.

4.3 Foreign bank penetration and bank credit stability: how do CEE and Latin America compare?

Foreign bank penetration in CEE has increased significantly throughout the transition process. Nevertheless, during some periods a temporary - absolute or relative - reduction in foreign bank credit did take place. How did this influence the total amount of bank credit in the host countries? In Estonia, we find a reduction in the broad loan measure between 1993 and 1996. However, this only reflects a slower growth in cross-border credit compared to domestic credit. There was thus no absolute reduction in foreign bank activity. In Hungary the broad loan measure declined between 1993 and 1995 as
well. Here, cross-border credit did decline, but this decline was more than offset by an increase in credit by foreign subsidiaries. Here as well, the decline in the penetration measure is simply the result of a more rapid increase in domestic credit. In Poland, cross-border credit decreased between 1993 and 1996. Even though foreign subsidiary credit increased at the same time, this increase was not enough to offset the decrease in cross-border credit. As a result, foreign bank penetration was temporarily reduced. In Slovenia, the narrow penetration measures declined somewhat between 1998 and 2000, reflecting a reduction in credit by local subsidiaries. At the same time, however, cross-border credit increased enough to raise the total amount of foreign credit, thus leading to a continuing rise in the broad loan penetration measure. Finally, cross-border credit into the Czech Republic declined during 1997-2000, but credit by foreign subsidiaries increased even faster.

To sum up, our results show no evidence of “cut and run” behaviour by foreign banks. In some cases cross-border credit declined temporarily, but this decline was more than offset by an increase in local subsidiaries’ credit (except for Poland in 1993-1996). Importantly, in both the Slovenian and the Czech case, the increase in total foreign bank credit (partly) counterbalanced a decrease in domestic credit during the last years of our sample period. All in all, these results indicate that foreign banks, especially local subsidiaries, have contributed to a greater stability of total bank credit to the non-financial private sector in CEE.

These conclusions are in line with Peek and Rosengren (2000) who have calculated similar penetration measures for Brazil, Mexico and Argentina during the 1994-1999 period. They find an increase of all penetration measures in all countries when comparing the situation before and after the East Asian crisis and conclude that foreign banks even expand during troubled times in the host country. The authors also note that cross-border lending does sometimes decline in case of problems in the host country. When we further compare their results with ours, we find some other striking similarities. First of all, at the beginning of their sample period they find broad loan penetration measures that are more than twice the other three, domestically orientated penetration measures. At the same time, these broad loan penetration measures have been increasing much slower than the other measures, implying an increasing importance of lending by local brick and mortar subsidiaries relative to cross
border lending.\textsuperscript{35} This is exactly the result we find for Hungary, Poland and \textit{in extremo} for Estonia. In addition, we find for these three countries that the broad loan penetration measures actually follow a U-curve, largely reflecting the rapid increase in domestic credit during the first years of transition as compared to foreign bank credit (“denominator effect”).\textsuperscript{36} In contrast, Peek and Rosengren find broad loan measures that are almost continually increasing. A plausible explanation for the relatively high level of foreign bank penetration at the very beginning of the transition period, lies in the fact that already during the 1980s commercial banks were the main source of external funds for CEE as close working relationships were built with foreign trade banks. Export credit and short term finance were for instance important instruments in Poland and Hungary. These countries were also among the early reformers and were relatively open to foreign participation, as opposed to for instance the former Czechoslovakia, where bank privatisation proceeded more slowly (EBRD, 1998, pp. 77, 85, 97). Hungary, which had the most open attitude towards foreign bank activities, had already attracted a considerable amount of joint-venture banks with foreign participation, even before 1993. In Poland, foreign banks were involved in the development of the Polish banking system early on in twinning arrangements with local banks. It is plausible that the early participation of foreign banks in - and co-operation with - Hungarian and Polish banks led to the relatively large amount of cross-border credit we still observe in our broad loan measure for the year 1993, the first year in our sample period.\textsuperscript{37} Indeed, table 1 shows that in 1992 more than 50% and 60% of all BIS credit to Hungary and Poland, respectively, was absorbed by local banks.

\textsuperscript{35} For all countries we studied, the narrow loan measure and the broad deposit measure of foreign bank penetration behave similarly. This is in line with the results of Peek and Rosengren (2000) who argue that this reflects the close link between the credit granting of local subsidiaries and the availability of funding to these banks.

\textsuperscript{36} As opposed to these countries, in the Czech Republic all four penetration measures start from the same low level and grow with the same pace, reflecting the limited importance of both cross-border credit and credit by foreign subsidiaries during the beginning of the transition.

\textsuperscript{37} An overview of foreign bank subsidiaries, branches, representative offices and joint ventures in Poland, Hungary and the Czech Republic during the first years of the transition can be found in Bonin et al (1998).
5. Concluding remarks

In this paper we have focused on two aspects of foreign bank activity in CEE: cross-border credit and the activities of foreign bank subsidiaries in CEE itself. By combining BIS consolidated statistics and BankScope data into a unique database we were able to make a clear distinction between these two kinds of foreign bank activities. Our analysis shows that the relative importance of foreign bank subsidiaries in CEE has increased considerably during the transition period (Slovenia being the exception). However, in Estonia, Hungary and Poland foreign banks were important during the first years of the transition period as well, as they provided a substantial share of all credit in the country by means of cross-border operations. An extreme example of this is Estonia, where foreign subsidiaries were absent before 1999, but where foreign banks did finance Estonian projects from outside the country. Conventional measures of foreign bank activity that exclude such cross-border credit would thus underestimate the level of foreign bank penetration in CEE. Our penetration measures show that in Estonia, Poland and Hungary cross-border credit declined relative to domestic credit during the first years of transition, whereas foreign subsidiaries only started to gain significant importance some years later. As a result, foreign penetration first declined and then rose during transition.

We find no evidence of a persistent lowering in foreign bank credit over a protracted period of time. An exception is the decline in cross-border credit to Poland between 1993 and 1995, which was only partly offset by an increase in foreign banks’ activities within the Polish borders. Reductions in cross-border credit in Hungary and the Czech Republic were more than offset by an increase in local subsidiaries’ credit. These findings confirm earlier results on foreign banking in Latin America, which showed that foreign subsidiaries expanded their business during economic downturns, either by acquisition or internal growth, whereas cross-border lending did sometimes retrench during crisis periods. Foreign bank penetration has contributed to a greater stability of the credit supply in the CEE region, especially when such credit was granted through local brick-and-mortar subsidiaries. This may be an important consideration for policymakers in those transition countries that have not (yet) fully opened up their banking markets. Of course, it is still too early for drawing any definite conclusions. After all, it remains to be seen whether the credit supply of mostly American and Western European subsidiar-
ies in the CEE region will survive a significant and lengthy slowdown in these banks’ home country economies.

The large number of banks in our sample, of which detailed data are available for nine years, would make panel estimates a likely route for future work, for instance focussing on discerning the main determinants of foreign bank penetration. Also, the differences between domestic and foreign bank lending patterns could be looked into in greater detail by using the balance sheet and P&L-data from BankScope. Lastly, the empirical relationship between the penetration measures we calculated and cross-country differences in economic growth during transition could be tested for.
References


## Appendix

### Table 1  
BIS credit by sector (banks, public sector, non-bank private sector, and unallocated), in percentages

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<th>Czech Republic Private</th>
<th>Czech Republic Unallocated</th>
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<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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</table>

Source: BIS consolidated international banking statistics.
### Table 2  Crossborder credit from BIS reporting countries (in mln $)

<table>
<thead>
<tr>
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<th>Hungary</th>
<th>Poland</th>
<th>Slovenia</th>
<th>Czech Republic</th>
</tr>
</thead>
<tbody>
<tr>
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<td>66</td>
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<td>6185</td>
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<td>1683</td>
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<td>5669</td>
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</table>

Source: BIS consolidated international banking statistics and BankScope

### Table 3  Credit by domestic banks (in mln $)

<table>
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<tr>
<th>Year</th>
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<th>Poland</th>
<th>Slovenia</th>
<th>Czech Republic</th>
</tr>
</thead>
<tbody>
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<td>12316</td>
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<td>45985</td>
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</tr>
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</table>

Source: BankScope

### Table 4  Credit by foreign bank subsidiaries (within country) (in mln $)

<table>
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<tr>
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<th>Poland</th>
<th>Slovenia</th>
<th>Czech Republic</th>
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Source: BankScope
Table 5  Crossborder credit from BIS reporting countries (% of GDP)

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<th>Hungary</th>
<th>Poland</th>
<th>Slovenia</th>
<th>Czech Republic</th>
</tr>
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<td>16.9</td>
<td>4.2</td>
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Source: BIS consolidated international banking statistics, BankScope, EBRD
Note that the GDP-figures that were used to construct the last row (2000) are estimates only.

Table 6  Credit by domestic banks (% of GDP)

<table>
<thead>
<tr>
<th>Year</th>
<th>Estonia</th>
<th>Hungary</th>
<th>Poland</th>
<th>Slovenia</th>
<th>Czech Republic</th>
</tr>
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<td>19.5</td>
<td>59.3</td>
<td>46.1</td>
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</table>

Source: BankScope, EBRD
Note that the GDP-figures that were used to construct the last row (2000) are estimates only.

Table 7  Credit by foreign bank subsidiaries (within country) (% of GDP)

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<thead>
<tr>
<th>Year</th>
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<th>Hungary</th>
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<th>Slovenia</th>
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Source: BankScope, EBRD
Note that the GDP-figures per capita that were used to construct the last row (2000) are estimates only.