

Direct Cross-Border Lending by Austrian Banks to Eastern Europe

Claus Puhr,
Markus S.
Schwaiger,
Michael Sigmund¹

Direct cross-border lending is an important component in the ongoing process of financial deepening in Central, Eastern and Southeastern Europe (CESEE) and the Commonwealth of Independent States (CIS). We use a loan-level dataset of Austrian banks to study the characteristics as well as the major driving forces of direct cross-border lending in CESEE and the CIS. Direct cross-border lending to nonbanks by Austrian banks expanded rapidly over the last few years; the bulk of loans is extended to corporate customers and is denominated in a foreign currency, with the euro taking a prominent position. By means of a series of univariate analyses, we provide support for the relevance of geographic proximity – small and medium-sized banks mainly lend to neighboring countries. Banks' direct lending also seems to follow nonfinancial FDI by Austrian corporates to CESEE and the CIS. We furthermore analyze the interdependencies between direct (i.e. by Austrian headquarters) and indirect (i.e. by local subsidiaries) cross-border lending and find support for a complementary effect between the two. In addition, host country factors such as GDP growth, private sector credit growth, financial intermediation growth and wage growth are also associated with direct lending growth.

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1 The Importance of Direct Lending

Strong credit growth to nonbanks since the turn of the millennium has been a striking feature of the convergence process in CESEE and the CIS. Much of the funding of this credit boom came from foreign, mainly Western European banks, which had entered CESEE and the CIS banking markets on a large scale since the end of the 1990s. Today most of these markets are dominated by foreign banks, mostly from Austria, Italy, Belgium and Nordic countries. In light of the current financial crisis – which has triggered a global economic downturn – the credit exposure of many Western European banks has attracted international attention.

The generally available figures on credit growth miss out an important element of debt financing in CESEE and the CIS, however: the provision of direct cross-border credit to the nonbank sector.² The stock of direct cross-border lending is considerable both in terms of GDP as well as in terms of domestic credit. In any case, direct cross-border lending by itself is an important element of convergence in CESEE and CIS, driven not only by intercompany debt but also by direct financing from foreign banks.³

This paper focuses on the provision of funds by Austrian banks to CESEE and the CIS in the form of direct cross-border lending. Austrian banks account for a market share of approximately

¹ *Financial Markets Analysis and Surveillance Division, claus.puhr@oebn.at, markus.schwaiger@oebn.at, michael.sigmund@oebn.at. The authors would like to thank Markus Hameter, Michael Strommer, Thomas Reiningger and Zoltan Walko (all OeNB) for their support and the provision of data. We also acknowledge valuable research assistance by Yvonne Hoeller and Gregory Ivanov (both OeNB).*

² *In what follows direct (cross-border) lending denotes loans of Austrian banks to customers resident in CESEE and the CIS, whereas domestic loans extended by CESEE and CIS subsidiaries of Austrian banks are referred to as indirect (cross-border) lending.*

³ *The remaining part of external debt is made up of e.g. debt securities of CESEE and CIS companies held directly by foreign investors.*

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OeNB

20 % in the region.⁴ Hence, we cover a substantial portion of lending to the region, although the possibility of a selection bias has to be acknowledged. The aim of this paper is twofold: After a short literature review and the description of the data we give a broad overview of the structure of direct cross-border lending by Austrian banks to CESEE and the CIS in terms of its evolution, its currency composition and sectoral distribution in chapter 4. In a second step, relying on a simple univariate analysis, we attempt to shed some light on the drivers of direct cross-border bank lending in the region in chapter 5. Chapter 6 concludes.

2 Literature Review

There are relatively few papers that discuss international banking and the role of cross-border lending from a theoretical perspective.⁵ Empirically, indirect cross-border lending via foreign subsidiaries has received some attention recently, not least owing to the rapid credit expansion in CESEE and the CIS.⁶ Surprisingly, direct cross-border lending by banks has received comparatively little attention so far. Available literature applies the conceptual framework on trade and multinational finance (see e.g. Berger et al., 2004, or Helpman et al., 2004) in order to investigate the choice of foreign banks between foreign direct investment (FDI, i.e. indirect cross-border lending via subsidiaries) and the “export” of financial services (i.e. direct cross-border lending). Whereas multinational

finance literature focuses on the trade-off between fixed/sunk costs and transportation cost and/or trade barriers, in international banking the focus is on the trade-off between fixed costs and information costs, which increase with geographic distance (see also Fidrmuc and Hainz, 2008).

Based on aggregated BIS data for Italian, Spanish and U.S. banks, García Herrero and Martínez Pería (2007) empirically show that the level of indirect cross-border lending is mainly driven by economies of scale as well as the openness of the host country’s banking sector. Buch and Lipponer (2007) are the first to use an individual bank dataset to investigate the direct versus indirect cross-border lending decision of banks. For a German sample, they show that direct and indirect loans are complements rather than substitutes. Furthermore size is an important factor determining the likelihood of a bank opening up a subsidiary abroad.

Data restrictions are certainly one reason why the dynamics of banks’ direct cross-border lending decisions has not received more attention so far. While data on domestic lending are relatively easy to obtain through commercial vendors (e.g. Bankscope), freely available cross-border lending data exist only in the form of aggregate data, such as the IMF’s collection of international investment statistics or the BIS banking statistics on the external positions of banks in individual reporting countries. In order to study the drivers

⁴ Note that Bank Austria and the Hypo Group Alpe Adria are counted as Austrian banks in this calculation.

⁵ See e.g. Morgan et al. (2003), extending the moral hazard framework of Holmström and Tirole (1997), or Rijkkeghem and Weder (2000), who add portfolio theoretical ideas to the discussion of cross-border direct lending.

⁶ See e.g. Hilbers et al (2005), Cottarelli et al. (2005) or Backé et al. (2006) for an analysis of credit growth at country level. A second branch of the literature uses individual bank data to investigate CESEE and CIS credit growth, focussing on lending contagion in multinational banks. See e.g. de Haas and Naaborg (2005), de Haas and Lelyveld (2006a) and (2006b) or Derviz and Podpiera (2006) in this respect.

of direct cross-border lending, however, an individual bank dataset that identifies both the country of origin and the destination of a direct cross-border loan is desirable. In the following chapter, we introduce the characteristics of the Austrian Central Credit Register, a source of such data that is not publicly available.

3 Data⁷

As the primary data source in this paper we use the OeNB's Central Credit Register (Großkreditevidenz, GKE), which provides detailed information on Austrian banks' credit portfolios on a customer-by-customer basis. For domestic and foreign borrowers the GKE contains data on securitized and nonsecuritized lending as well as guarantees and other off-balance sheet items exceeding a volume of EUR 350,000. Aside from this volume-based restriction, there is one notable exception regarding the reporting requirements to the GKE: Reporting on short-term interbank loans was not required until the year 2008.⁸ For each borrower banks report the outstanding volume, granted credit lines, the sum of collateral and finally their internal rating.⁹

For this paper we use GKE-based aggregate borrower positions by economic sectors according to the three main categories provided by the GKE:

(1) banks, (2) other (i.e. nonbank) financial intermediaries (from here on referred to as FIs) and (3) local governments, other corporate customers and households¹⁰ (from here on NBs). In addition to economic arguments the aforementioned data limitation provides further reason to focus on the second and third types of borrowers. However, we still use additional data sources on direct cross-border lending to enrich our analysis. These data stem mainly from the OeNB's Monetary Statistics,¹¹ a reporting scheme that is used, among other things, to provide data for the harmonized ECB Monetary and Banking Statistics and the BIS Banking Statistics. The quarterly data cover international financial claims and liabilities broken down by currency, by sector (bank and nonbank), and by country of residence of the counterparty.

Although the OeNB's Monetary Statistics are more extensive in some areas,¹² the GKE provides numerous advantages:

(1) All banks are required to report to the GKE, whereas the OeNB's Monetary Statistics employ a "cutting-off-the-tail" principle,¹³ which covers 95% of the total assets of the Austrian banking system but omits many of the small Austrian institutions.

(2) The GKE allows forming consistent aggregates across all countries

⁷ Note that our sample of CESEE and CIS countries includes Albania (AL), Belarus (BY), Bosnia and Herzegovina (BA), Bulgaria (BG), Serbia and Montenegro (added up for a consistent sample across the entire observation period, CS), the Czech Republic (CZ), Croatia (HR), Hungary (HU), Latvia (LV), Poland (PL), Romania (RO), Russia (RU), Slovenia (SI), Slovakia (SK) and Ukraine (UA).

⁸ However, as our analysis focuses on direct cross-border lending to nonbanks, this is no restriction given the purpose of this paper.

⁹ A detailed description of the Austrian Central Credit Register (GKE) is available in OeNB (2008a).

¹⁰ Unfortunately, the GKE does not allow an easy differentiation between local governments, other corporate customers and households.

¹¹ A detailed description of the OeNB's Monetary Statistics is available in OeNB (2008b).

¹² The advantages include the lack of a reporting threshold, the currency decomposition of direct cross-border loans as well as more granular sectoral information (at least for other ESCB countries).

¹³ For a description of the "cutting-off-the-tail" principle see OeNB (2008b).

where customers of Austrian banks are resident as opposed to other data sources that treat the ESCB, the EU and the rest of the world differently.

(3) Although the BIS Banking Statistics recently introduced features that allow the separate analysis of direct cross-border lending to banks' own subsidiaries, the GKE consistently provides this possibility not only for banks, but also for nonbank financial intermediaries and corporates for the entire time horizon of our analysis.

(4) The GKE includes not only on- but also off-balance sheet items (e.g. guarantees and leasing).

The availability (and use) of multiple data sources obviously calls for some sort of benchmarking of input data. We tried to "harmonize" and reconcile the different databases as far as possible, yet the aforementioned differences in the data sources' focus cause significant (not entirely resolved) differences in the aggregates used throughout our paper. However, as the general results appear to be stable across different data sources, restrictions regarding the length of our paper lead us to abstain from any further description. For much of the same reasons and due to (public) unavailability of equally granular data on an international level, our choice of individual loans data inhibits a comparison of Austrian banks' direct cross-border lending with direct cross-border lending by banks located in other countries.

Finally, we use additional data on individual banks (Austrian parent banks as well as local CESEE and CIS subsidiaries) from the OeNB's standard reporting schemes and macroeconomic data on CESEE and the CIS from Bloomberg, Eurostat and the IMF.

4 Cross-Border Lending by Austrian Banks

Austrian banks started to expand to CESEE as early as in the mid-1980s, when banks followed their corporate customers to provide services to clients starting business in the region. By the early 1990s three Austrian banking groups (or their predecessors) had established subsidiaries in neighboring countries, but also in Poland and Russia. More Austrian banks followed suit in the second half of the 1990s. That period saw a significant departure from Austrian banks' initial greenfield business models. Some banks stuck with their strategy of organic growth, whereas others took part in the first wave of privatization of state-owned banks to grow through acquisitions. At the turn of the millennium, the economic environment in most CESEE and CIS countries stabilized and banking activities entered a path of sustained expansion (see Barisitz, 2006). Foreign banks, mainly from Western Europe, began to enter the markets in significant numbers, taking advantage of further large-scale privatizations. At the same time the region began to gain importance for the Austrian banking system beyond the large banking groups with local subsidiaries. Surging direct cross-border loans contributed to an increasing CESEE and CIS exposure. Today, Austrian banks hold a market share of almost 20% in the region, which has attracted international attention given the increased risk awareness triggered by the financial crisis.

4.1 Direct Lending Growth

Over the entire observation period from the first quarter of 2002 to the fourth quarter of 2008, direct cross-border lending to NBs and FIs¹⁴ in the

¹⁴ See chapter 3 "Data" for a definition of nonbanks (NB) and nonbank financial intermediaries (FI).

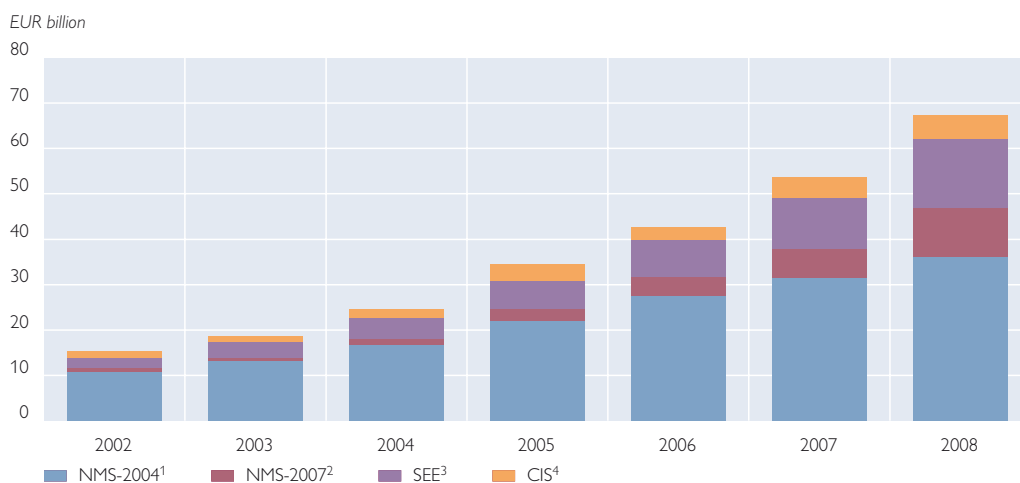
CESEE and CIS region more than tripled from EUR 15.3 billion to EUR 67.4 billion.¹⁵ Although direct lending to CESEE and the CIS grew on an aggregate basis at a steadily increasing pace, local and regional differences are quite significant (see chart 1). Its relative importance in terms of total (i.e. direct and indirect) cross-border lending to NBs and FIs in the region remained constant at about one-fifth of the total volume.¹⁶ In the second half of 2008, as a consequence of the current financial crisis and its reassessment of the risk posed by the regional credit exposure, the dynamics of credit expansion lost momentum. In the third quarter of 2008 growth rates decreased, and they were only slightly positive in the fourth quarter, i.e. growth almost came to a standstill to-

ward the end of the year. However, any assessment of the impact of the global financial crisis on the lending behavior of Austrian banks would be premature at this point.

In terms of cross-border credit extended to customers resident in the EU, direct lending to the CESEE countries that joined the EU in 2004 (NMS-2004) increased at a fairly steady pace of about 20% a year to EUR 36.2 billion, whereas direct lending to the CESEE countries that joined the EU in 2007 (NMS-2007) grew at a significantly faster rate of more than 50% on average from EUR 0.7 billion at year-end 2002 to EUR 10.7 billion at year-end 2008. Together the two regions account for a steady share of little over two-thirds of direct lending to countries within the EU. Also at a steady

Chart 1

Cross-Border Lending by Region from 2002 to 2008



¹ NMS-2004 includes: CZ, HU, LV, PL, SI and SK.

² NMS-2007 includes: BG and RO.

³ SEE includes: AL, BA, CS (which includes ME and RS) and HR.

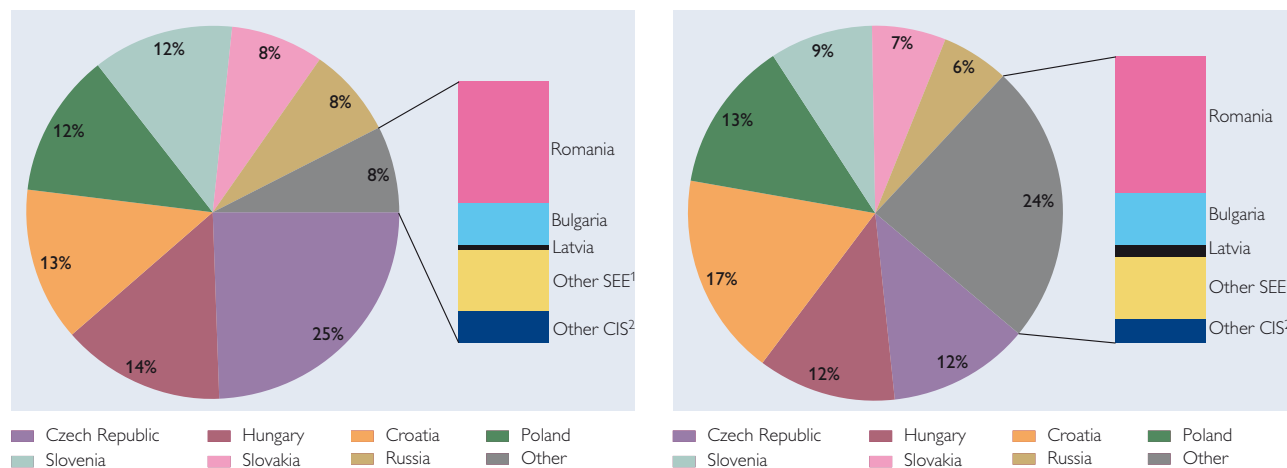
⁴ CIS includes: BY, RU and UA.

¹⁵ The difference between GKE data and the OeNB's Monetary Statistics is significant but fairly constant on a disaggregate country-by-country level. Because of the numerous advantages as described in chapter 3 and length restrictions, the data used in the remainder of the paper are based on GKE reports.

¹⁶ In addition, the relative importance of direct cross-border lending by Austrian banks to nonbanks in CESEE compared with direct cross-border lending by Austrian banks to the rest of the world almost doubled from about one-fifth in 2002 to almost two-fifths in 2008.

Chart 2

Share of Cross-Border Lending by Country at End-2002 and at End-2008



Source: OeNB.

¹ Other SEE includes: AL, BA and CS (which includes ME and RS at end of 2008).

² Other CIS includes: BY and UA.

pace of about 35% year-on-year, the growth of direct credit extended to customers resident in Southeastern Europe (SEE) increased to EUR 15.3 billion at year-end 2008. Meanwhile direct lending to the CIS almost quadrupled to EUR 5.2 billion, albeit with enormous local differences.

Looking at the borrowers of non-bank direct cross-border credit, the data reveal two fairly steady trends: (1) Not only did the share of FIs increase in absolute terms, but it also increased in relative terms from 25.4% to 34.4% of total direct credit to the region, while (2) at the same time the share of recipient *intra-group* FIs increased from some 65% to more than 70% of total direct credit to FIs. These growth rates are *inter alia* due to the growing importance of leasing firms affiliated to Austrian banks. Although steadily growing in absolute terms, direct cross-border lending to (mostly corporate¹⁷) NBs grew at a lesser pace. Contrary to the FI segment, these loans were mainly granted to customers outside the group,

which account for a fairly stable share of substantially more than 95%.

4.2 Direct Lending by Country

Taking a closer look at the geographic dispersion of direct cross-border lending to CESEE and the CIS, customers from Croatia (with a share of 17.4%), Poland (13.3%), the Czech Republic (12.3%), Hungary (11.8%), and Romania (11.5%) were the leading recipients of credit from Austrian banks at year-end 2008, all accounting for EUR 8 billion or more (see chart 2). From the start of our time series in 2002, however, the NMS-2004 and Croatia have dominated the exposure of Austrian banks. However, lending to the once leading target country, the Czech Republic, which more than doubled in absolute terms, decreased significantly in relative importance (even more markedly than lending to other leading recipients at that date). Of the seven largest direct lending destinations in the region in 2002 (the Central European NMS-2004, Croatia and Russia ac-

¹⁷ See section 4.4.

counted for more than 90%), only Croatia substantially increased its relative importance, with aggregate lending growth exceeding 500%. In total, these seven countries' relative importance had dropped to 75.9% by year-end 2008.

Thanks to the prospect of EU accession in 2007 and exceptional (i.e. credit-driven) economic growth (including significant foreign direct investment inflows) Romania and – to a lesser extent – Bulgaria started to catch up with this group of seven. Direct lending to Romania from year-end 2002 to year-end 2008 increased almost fifteenfold, amounting to EUR 7.7 billion or 11.5 % of total cross-border lending to the region. Credit extended to Bulgaria by Austrian banks grew even slightly faster and stood at EUR 3.0 billion or 4.4 % of total direct cross-border lending to the region at end-2008. These enormous growth rates, albeit starting from low initial levels, were not matched by any other region. However, direct cross-border credit to other Southeastern European countries (not accounting for Bulgaria, Croatia and Romania) and Latvia also expanded at a rapid pace. In addition, direct lending to Belarus and Ukraine increased almost tenfold over the same time span.

This development to some extent mirrors the trend of indirect lending to the region, which has also been expanding rapidly in the NMS-2007, SEE and the CIS countries – at the expense of the relative weight of the NMS-2004. This would suggest that by and large the direct lending activities of Austrian

banks have accompanied the expansion of indirect lending. However, the comovement of direct and indirect lending is far from ubiquitous. In Russia for example, indirect loans expanded rapidly through both organic growth and new acquisitions, whereas direct lending decreased markedly in relative importance. The same applies for instance to Slovenia and Ukraine.

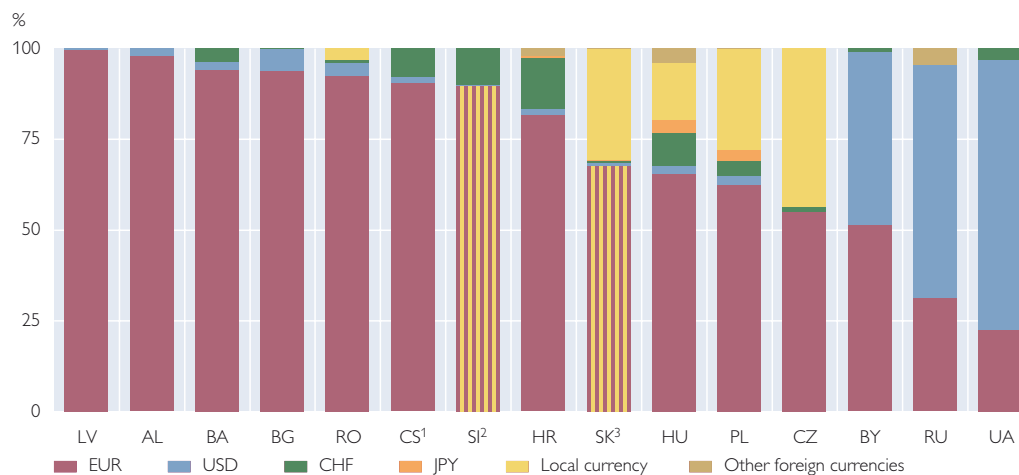
4.3 Direct Lending by Currency

A distinctive feature of direct cross-border lending by Austrian banks is the fact that most of it is denominated in foreign currency. At year-end 2008, 85.4 % of all direct loans to the region were granted in a currency other than the local one (see chart 3).¹⁸ In fact, direct lending in local currency has significant importance only in the Central European NMS.¹⁹ The breakdown by currency reveals the dominance of euro-denominated loans to SEE and to the NMS, whereas U.S. dollar-denominated loans are of relatively larger importance in the CIS. Lending in Swiss francs is not very prevalent, with the exception of Croatia, Hungary and Slovenia, and Japanese yen-denominated loans are granted to an even lesser extent to customers in Hungary and Poland. Yet not all of the direct lending in another currency than the local one is connected with foreign exchange risks. A 2008 survey among the five largest Austrian banks active in the region showed that banks estimate the “naturally hedged” share of foreign currency loans to be around 30% (or even higher in some countries).

¹⁸ As the denomination of loans is not reported to the central credit register this analysis is based on the complementary monetary statistics reported to the OeNB. For details, see chapter 3.

¹⁹ Czech Republic, Hungary, Poland and Slovakia. Surprisingly, the sectors that Austrian banks lend to in local currency vary significantly from country to country, with the notable exception of households, which receive hardly any local currency credit.

Chart 3

Cross-Border Lending by Currency at End-2008

Source: OeNB.

¹ CS includes ME and RS, the former of the two adopted the euro unilaterally.² SI joined the euro area on January 1, 2007.³ SK joined the euro area on January 1, 2009.

In terms of currency composition, there are marked differences between indirect cross-border loans and direct cross-border loans. To begin with foreign currency lending plays a significantly lesser role in indirect cross-border lending. End-2008 survey data show that only 47% of all indirect loans provided by Austrian subsidiaries are denominated in a foreign currency. Secondly, although the euro also dominates indirect cross-border loans (25% of all indirect loans), indirect lending in Swiss francs is much more prominent than it is in direct lending. All in all, Swiss franc lending accounts for some 9% of all loans of Austrian subsidiaries. Hungary, Croatia and Poland stand out particularly in this respect. As for the U.S. dollar, both indirect and direct loans show that it is mostly CIS countries, where lending in U.S. dollars is popular.

4.4 Direct Lending by Economic Sector

The sector breakdown of direct cross-border loans to the nonbank sector at year-end 2008 highlights the importance of nonbank corporates for all countries (see chart 4).²⁰ From a theoretical perspective this phenomenon is in line with standard moral hazard theory. It is easier to monitor large loans to the corporate sector than many small household loans. This, most likely, also explains the dominance of the former in the cross-border business despite some CESEE and CIS central banks' observations published in their financial stability reports according to which loans to households are often more profitable than loans to nonfinancial corporations and, in addition, often carry lower risk (e.g. because real estate is used as collateral).

²⁰ As for the denomination of loans, economic sectors are not further differentiated in the data reported to the Central Credit Register. Hence, this analysis is based on the complementary monetary statistics reported to the OeNB. For details see chapter 3.

Cross-Border Lending by Sector at End-2008

Source: OeNB.

5 Drivers of Direct Lending

If banks want to expand abroad, they will have to decide whether to enter a foreign market via a subsidiary or via direct cross-border lending. For a number of smaller and medium-sized Austrian banks there is certainly no choice but to lend directly, as they lack the necessary economies of scale. Size, liquidity and/or capital restrictions prevent them from establishing foreign affiliates (see Buch and Lipponer, 2007). Such restrictions do not apply for the biggest Austrian banks, however. In many cases direct cross-border credit is granted to countries where these banks already own a subsidiary. In this respect, we hope to shed some light on the question whether direct and indirect cross-border lending are substitutes or complements.

From a moral hazard and monitoring perspective, direct cross-border lending appears to be inferior to indirect cross-border lending, as the subsidiary's knowledge about the local market facilitates the bank's monitoring process, especially if soft facts need to be accounted for. If the geographic distance between the creditor and the

debtor is related to monitoring costs, cross-border lending via subsidiaries will again prove superior. However, certain subsidiaries may face restrictions on expanding their loan books. As shown by de Haas and Naaborg (2005), foreign bank affiliates in CESEE and the CIS are strongly influenced by the capital allocation and credit steering mechanisms of their parent banks. The presence of large exposure limits or a tight capital situation at any subsidiary may prompt the parent to extend cross-border loans directly rather than supplying additional capital. Other variables that might enter into banks' cross-border lending optimization include the economic integration of the creditor and the debtor country, the openness of the local banking market or various legal restrictions that hamper credit growth. All of these aspects are discussed in further detail in the following sections.

5.1 Neighborhood

In the literature, geographic distance has often been used as a proxy for the ability to monitor banks' loans (see Hauswald and Marquez, 2006, or

Petersen and Rajan, 2002). In the case of Austria we would therefore expect small and medium-sized banks (all banks except for the top six banks) to directly lend to Austria's immediate CESEE neighbors²¹ to a greater extent than large banks as monitoring costs are lower given close geographic proximity. The data in table 1 show that this has not always been the case for Austria, as about 60% of direct CESEE and CIS cross-border loans went to the four neighboring countries at end-2002, independent of the size of the banks.

Table 1

Direct Lending¹ to Austria's Neighboring Countries (CZ, HU, SI and SK)

	Direct lending to neighbors by top 6 Austrian banks ²	Direct lending to neighbors by other Austrian banks ³
	%	%
Q4 02	59,2	59,8
Q4 03	59,9	52,2
Q4 04	51,7	54,6
Q4 05	45,1	48,0
Q4 06	43,3	50,8
Q4 07	38,1	46,2
Q4 08	33,9	47,6

Source: OeNB.

¹ In % of total direct lending to CESEE.

² Top 6: Bank Austria, BAWAG, Erste Bank, Hypo Group Alpe-Adria, RZB and VBAG.

³ Without top 6.

While the relative importance of all four countries diminished in either case until end-2008, small and medium-sized banks saw their share of lending to neighboring countries drop by little more than 10 percentage points. At the same time the share of direct cross-

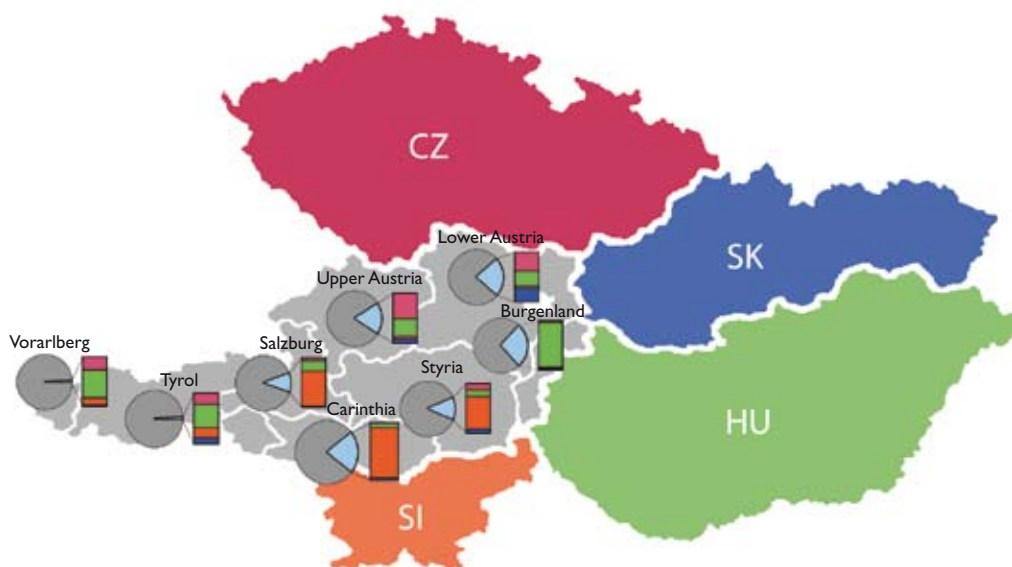
border lending of the top 6 Austrian banks to the four neighboring CESEE countries (in terms of total direct cross-border lending to CESEE and the CIS) almost halved to little over one-third. This is a clear indication of the expansive nature of large Austrian banks' CESEE and CIS business strategy.

As Austria's four neighboring countries appear to be the most economically advanced of the region (with the exception of the other NMS-2004), it has to be noted that in the case of Austria geographic proximity coincides with a higher level of economic development. In any case, chart 5 illustrates the presence of a neighborhood effect even more impressively. First, the chart shows aggregate direct cross-border lending to Austria's four CESEE neighbors at year-end 2008 in terms of total direct cross-border lending by province (represented by circles). Second, the light blue slices of the circles represent the share of direct cross-border lending to the four neighboring CESEE countries (in terms of total direct cross-border lending). Third, the chart provides information regarding individual customers' countries of residence (represented by the shaded columns).²² Both measures show the significant influence of geographic proximity (1) on whether an Austrian bank lends to the region at all and (2) on the positive effect of a common border of an Austrian province with a neighboring country to whose residents/corporates a bank extends credit.

²¹ Austria's immediate CESEE neighbors are the Czech Republic (CZ), Hungary (HU), Slovakia (SK), and Slovenia (SI).

²² All Austrian provinces are included in chart 5 with the exception of Vienna due to the fact that Vienna is home to all six large Austrian banking groups except Hypo Group Alpe Adria and that the majority of other larger medium-sized banks with an international focus are headquartered there. Consequently, observations of Vienna more or less reflect the aggregate Austrian banking systems' geographic diversification of direct cross-border lending. At end-2008, for banks registered in Vienna, nonbank direct credit extended to Austria's CESEE neighbors accounted for 14.4% of all cross-border lending (Austria: 14.7%). Hungary was the most important recipient with a share of 5.1% (Austria: 4.6%), followed by the Czech Republic with 4.8% (4.4%). Only Slovakia with 1.6% (3.2%) and Slovenia with 3.0% (2.4%) swap ranks in the two lists.

Neighborhood Effects of Cross-Border Lending at End-2008



Source: OeNB.

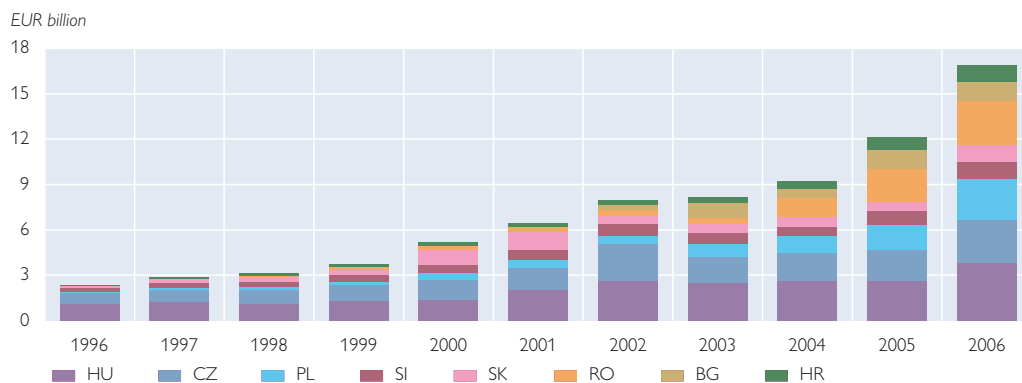
Banks headquartered in the westernmost provinces Vorarlberg and Tyrol hardly lend to Austria's neighboring countries at all (about 2 % of total direct cross-border lending in both cases). Going further east, however, there are increasing shares. Salzburg and Styria extend 11.4% and 13.4% of their respective total direct cross-border credit to the region, with Slovenia accounting for more than half of the respective shares. Upper and Lower Austria extend 18.7% and 22.9% respectively to neighboring CESEE countries, in both cases mostly to the adjacent Czech Republic. Small and medium-sized banks headquartered in Lower Austria are on aggregate also the only significant cross-border creditors of customers resident in Slovakia. In Austria's easternmost province, Burgenland, the bulk of the 26.5% of total direct cross-border credit extended to the region goes to customers in neighboring Hungary (90.0% at year-end 2008). Similarly, in Carinthia the lion's share of the 21.7% of total direct cross-border lending goes to customers in

neighboring Slovenia. In any case, these figures clearly show that geographic proximity is a major driving force of direct cross-border lending, at least for Austria's small and medium-sized banks.

5.2 Foreign Direct Investment

In the literature on indirect cross-border lending via subsidiaries it is well accepted that the degree of economic integration between the parent bank's home country and the country of residence of the subsidiary drives the location decision of international banks (see e.g. Focarelli and Pozzolo, 2003, or Dahl and Shrieves, 1999). We want to explore this issue for direct cross-border lending by means of data on Austrian nonfinancial FDI in CESEE and the CIS. Austrian nonfinancial corporations have been expanding into CESEE and the CIS quite aggressively during the last few years. Chart 6 shows the growth of Austrian nonfinancial outward FDI (at accounting value) from 1996 to year-end 2006, the last available data point. Initially, the large

Chart 6

Austrian Outward FDI Excluding Banks and Nonbank Financial Intermediaries

Source: OeNB.

neighboring economies Hungary and the Czech Republic dominated FDI, followed by the other Central European NMS-2004 (Poland, Slovenia and Slovakia). Hungary and the Czech Republic are still the main recipients of FDI to the region, but starting in the early 2000s Romania, Bulgaria and Croatia gained importance as investment targets for Austria's nonfinancial corporations as well.²³

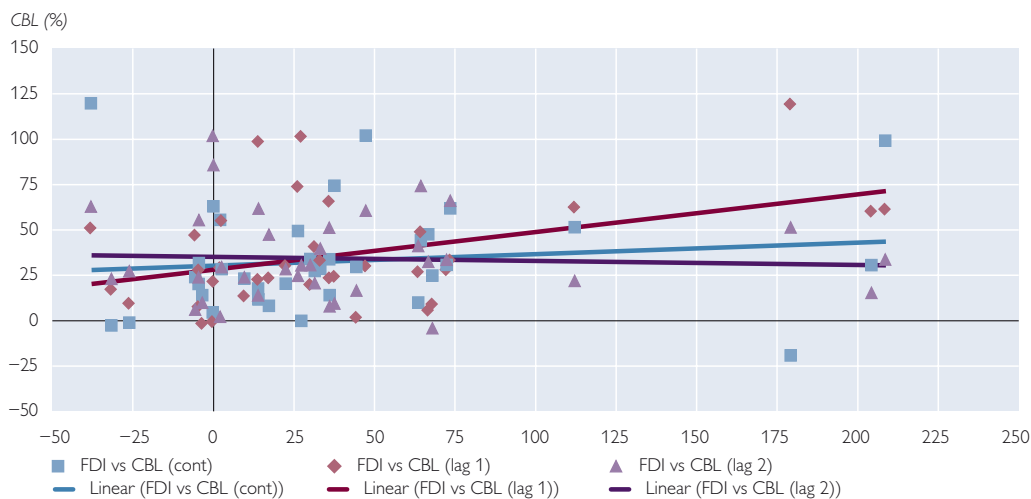
One reason why a loan is extended by the Austrian parent's "house" bank could be the fact that a nonfinancial affiliate's capital structure and refinancing decision is steered by its Austrian parent company. These loans may even be associated with implicit or explicit guarantees by the Austrian parent company. To get a first insight whether this is indeed the case for Austrian companies, we perform a simple correlation analysis between year-on-year growth rates of FDI and direct cross-border credit expansion. Due to the shorter length of our time series for direct cross-border lending, we have to restrict our analysis to data points starting in 2002. To address the limited

number of growth rates per country and per point in time we pool across these two dimensions and compute the Pearson correlation coefficient for the whole dataset.

As it is unclear whether FDI has an immediate or lagged effect on direct cross-border lending, we calculate the Pearson correlation coefficient for contemporaneous growth rates (0.122, not significant at common inference levels), for growth rates with a one-year lag (0.415, significant at the 1 % level) and for growth rates with a two-year lag (-0.054, not significant at common inference levels). Although we observe positive correlations in both, the same year of and the year following the initial investment, suggesting that FDI by Austrian companies to CESEE and the CIS countries do indeed have a positive impact on direct cross-border lending, one has to consider that only the second – with a one-year lag – is statistically significant. Moreover, the scatter plots provided in chart 7 show the fairly unstable nature of this relation.

²³ Bulgaria, the Czech Republic, Croatia, Hungary, Poland, Romania, Slovenia and Slovakia are the only countries of our paper's sample for which time series of FDI data are available.

Relative Changes in FDI versus Cross-Border Lending (CBL)



Source: OeNB.

The evidence provided by the correlation analysis therefore suggests that the degree of economic integration between Austria and the respective CESEE and CIS country explains some of the variation in direct cross-border lending by Austrian banks across countries, although the results are far from unambiguous.²⁴

5.3 The Presence of a Subsidiary

Direct cross-border lending may also be affected by the presence of a bank's subsidiary in the respective country. On the one hand, there could be a substitution effect of direct and indirect cross-border lending, i.e. a bank that has no subsidiary in a country is forced to confine its cross-border lending to direct lending, whereas once a bank has established its subsidiary, the parent bank could channel most of its lending

through this subsidiary, e.g. for monitoring reasons. On the other hand, there could also be a complementary effect of having established a subsidiary, i.e. the bank's subsidiary acquires lending business for the parent, e.g. to circumvent its own large exposure rules.

To explore the interaction of direct and indirect cross-border lending, we start with a simple correlation analysis. For every point in time we compute average (volume-weighted)²⁵ year-on-year growth rates of indirect and direct cross-border loans for all those parent banks that have a subsidiary and of direct loans for those parent banks that do not have a subsidiary in any given country. We then pool across time and countries to compute the Pearson correlation coefficient for the whole dataset as well as for a dataset that we construct by cutting off at the 97.5% quan-

²⁴ To verify our results we have repeated the exercise replacing foreign direct investment with trade links (i.e. gross Austrian exports). However, due to potential endogeneity problems, we only report the analysis based on FDI. Nonetheless, the outcome based on trade links goes beyond the results of the FDI regressions, with positive correlations for all three lags (two of which are significant at the 1% level).

²⁵ Note that a simple average distorts the results as countries with very low total direct lending volumes show high volatility in lending growth rates.

Table 2

Correlation of Direct and Indirect Lending by Banks

	Direct lending by banks with subsidiaries	Direct lending by banks without subsidiaries	Indirect lending by banks with subsidiaries
Direct lending by banks with subsidiaries	1.000	0.035	-0.004
Direct lending by banks without subsidiaries	-0.027	1.000	0.192***
Indirect lending by banks with subsidiaries	-0.009	0.254***	1.000

Source: OeNB.

Note: *** indicates significance at the 1% level.

tile above and below average lending growth rates. Table 2 shows the correlation, with the upper triangular matrix depicting correlations based on the whole dataset and the lower triangular matrix those based on the reduced dataset.

These correlations indeed reveal that the presence of a subsidiary entails a different direct cross-border lending behavior. The behavior of banks without a subsidiary coincides more closely with the lending behavior of banks' subsidiaries in any given country than it does with the direct cross-border lending behavior of these subsidiaries' parent banks. The correlation matrix shows that the correlation of lending by banks without a subsidiary and lending by banks' subsidiaries in the same country is positive and highly significant whereas the direct cross-border lending behavior of banks that have no subsidiary is slightly negatively and insignificantly correlated with the direct cross-border lending behavior of banks that have a subsidiary.

Whether the difference in direct cross-border lending behavior of banks with and without subsidiaries is due to a substitution effect or a complementary effect with respect to the presence of a subsidiary cannot be answered conclusively based on these correlations, however. One way to explore the issue of substitution versus complementary

effect is an analysis of the impact of establishing a subsidiary on direct cross-border lending by the parent. To this end, we conduct an event study based on 22 instances where a bank that was already lending to a CESEE/CIS country directly entered the same country via a subsidiary. The time of entry is taken as the reference point in this experiment. We then calculate the average (volume-weighted) credit growth in direct cross-border lending for every quarter before and after the bank's entry. As the effect of direct cross-border lending growth rates exhibits a large volatility, we then take the growth rate averages over 0.5 year, 1 year and 1.5 years before and after the reference point. In a second step we look at a control group, which consists of the volume-weighted quarterly growth rates of direct cross-border loans of all other banks per country before and after the entry of a new Austrian subsidiary in any given country. Table 3 shows the results of this small experiment.

The result gives some indication that market entry via a subsidiary entails a complementary effect for direct cross-border lending by the parent to the respective country. Growth rates averaged over all banks and two quarters before and after the opening of a subsidiary are up from 19.2% to 23.1%. Although the growth rates of the con-

Table 3

Direct Lending Growth and the Establishment of a Subsidiary

Observation period before/after market entry	Market entry – sample of banks		Control group	
	Average growth rate of direct lending before market entry	Average growth rate of direct lending after market entry	Average growth rate of direct lending before market entry	Average growth rate of direct lending after market entry
	%	%	%	%
0.5 year	19.2	23.1	10.0	10.3
1 year	3.0	13.0	10.0	11.0
1.5 years	3.5	12.1	9.8	11.5

Source: OeNB.

Note: The growth rates are volume-weighted quarterly growth rates averaged either over 2 quarters, 4 quarters or 6 quarters before and after the establishment of a subsidiary. As some banks entered the market shortly after the beginning or shortly before the end of our observation period, the number of observations deviates from 22 (i.e. the number of newly-established subsidiaries in our sample during the observation period) and ranges from 13 to 21 observations in any given quarter.

control group also increase slightly, the increase is more pronounced for the sample of banks that entered a market.

5.4 Host Country Characteristics

Following the internal capital market theory of de Haas and van Lelyveld (2006a), cross-border lending is directed to more profitable countries and regions. Therefore we look at relationships between direct cross-border lending growth and macroeconomic variables on an exploratory basis.

In a first step we pool across groups of CESEE and CIS countries and compute the Pearson correlation coefficients of direct cross-border lending growth and several macroeconomic variables (see table 4). The pooled groups coincide with the NMS-2004, the NMS-2007 plus Croatia and the CIS countries of our country sample.²⁶ Statistical inference (i.e. determining significance level for the Pearson correlation coefficient) cannot rely on the standard statistics since the used time

series (mostly growth rates) are serially dependent.²⁷ As a consequence our results should be taken with caution.

The positive correlation of direct cross-border lending with present and lagged consumption growth is in line with economic theory and so is the positive correlation with wage growth. If nominal GDP growth is regarded as an overall measure of country-specific business attractiveness then the positive correlation of direct cross-border lending growth with present and lagged GDP growth rates supports standard credit portfolio theories, which state that credit commonly flows to profitable countries.²⁸ Unemployment, though most likely not significant, exhibits the expected negative sign.

The relatively high correlation of direct cross-border lending with past, present and future values of private domestic credit growth is in line with the overall rapid credit growth in CESEE and the CIS, which is largely driven by the private sector. Finally the

²⁶ Although statistical tests do not suggest that pooling is necessary, it helps solve two problems: First, pooling increases the small number of year-on-year growth rates per country. Second, and equally important, the quality of the macro economic data seems homogeneous among the chosen groups but heterogeneous across groups.

²⁷ See Mudelsee (2003). Constructing meaningful confidence intervals for our correlation analysis would require the application of bootstrapping methods, which are beyond the scope of this paper.

²⁸ See de Haas and van Lelyveld (2006b), among others.

Table 4

Correlogram of Host Country Specifics and Direct Lending Growth

		Corr(t-2,t) ¹	Corr(t-1,t)	Corr(t,t)	Corr(t+1,t)	Corr(t+2, t)	Countries included
Sample NMS-2004	GDP growth ²	0.48	0.48	0.48	0.48	0.51	CZ, HU, PL, SI, SK and LV
	Wage growth	0.45	0.46	0.43	0.45	0.51	CZ, HU, PL, SI, SK and LV
	Unemployment growth	-0.11	-0.11	-0.06	-0.07	-0.05	CZ, HU, PL, SI, SK and LV
	Consumption growth	0.59	0.56	0.59	0.61	0.63	CZ, HU, PL, SI, SK and LV
	Private credit growth	0.54	0.53	0.48	0.46	0.46	CZ, HU, PL, SI, SK and LV
	Financial intermediation growth ³	0.46	0.43	0.36	0.32	0.30	CZ, HU, PL, SI, SK and LV
Sample NMS-2007	GDP growth	0.27	0.22	0.17	0.14	0.06	BG, HR, RO
	Wage growth	0.20	0.21	0.23	0.25	0.27	BG, HR, RO
	Unemployment growth	-0.09	0.00	-0.04	-0.08	-0.25	BG, HR, RO
	Consumption growth	0.33	0.32	0.25	0.20	0.12	BG, HR, RO
	Private credit growth	0.32	0.26	0.21	0.16	0.18	BG, HR, RO
	Financial intermediation growth ³	0.23	0.17	0.14	0.11	0.19	BG, HR, RO
Sample CIS	GDP growth	0.32	0.24	0.25	0.11	0.06	BY, RU, UA
	Wage growth	0.18	0.20	0.14	0.16	0.08	BY, RU, UA
	Unemployment growth	-0.17	-0.38	-0.44	-0.40	-0.35	BY, RU, UA
	Consumption growth	0.24	0.27	0.27	0.15	0.08	BY, RU, UA
	Private credit growth	0.09	0.02	0.05	0.01	-0.02	BY, RU, UA
	Financial intermediation growth ³	-0.09	-0.12	-0.09	-0.06	-0.05	BY, RU, UA

¹ Correlation (macro variable(t), direct lending growth(t)).

² Growth rates on a year-on-year basis.

³ Financial intermediation growth = private credit growth/GDP growth.

positive linear relation with financial intermediation growth (measured by the private credit-to-GDP ratio) supports the hypothesis that direct cross-border lending goes to countries that experience a general convergence towards an equilibrium private credit-to-GDP level.

At the current stage of our research, the differences in correlations (i.e. with private credit growth and with cross-border direct lending) between groups cannot be analyzed with the simple statistical methods applied. For future research we plan to apply panel econometric methods.

In the pooled group framework we further analyze the impact of import (+) and export growth (+) as well as

gross fixed capital formation growth (+), inflation (~) and producer price index change (+) and finally growth in the average lending rate (-) on direct cross-border lending growth.²⁹

We have also explored the role of banking sector profitability and the quality of individual banks' direct cross-border loan book in Austrian banks' cross-border lending decisions. Yet growth rates in direct cross-border lending are unrelated to past, current and future profitability levels in CESEE and CIS countries as well as unrelated to average internal ratings reported to the Central Credit Register on a customer-by-customer basis. The same is true for real Austrian GDP growth.

²⁹ (+) refers to a positive correlation whereas (-) indicates a negative correlation. Finally a (~) denotes a correlation around 0.

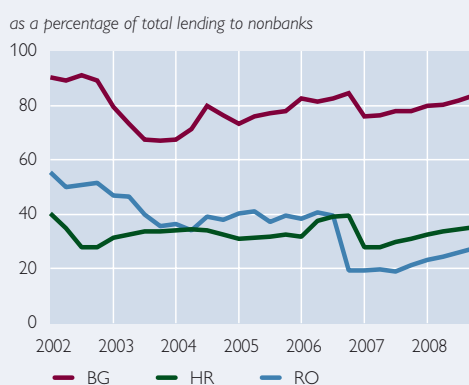
Lending Restrictions

Rapid credit growth in many CESEE and CIS countries has encouraged local authorities to implement a number of measures to restrict excessive credit growth. The range of these policy options can be broadly classified into monetary, prudential and administrative measures (see e.g. Hilbers et al., 2005). Monetary and administrative measures usually determine different forms of reserve requirements. These may include augmented reserve requirements for foreign currency lending, overall credit growth limits for banks as well as various forms of provisions if certain reserve requirements are not met. Prudential measures mainly include capital requirements like increased risk weights for specific loans or special loan-to-value ratios for mortgage loans, to name a few.

Based on Borio and Shim, 2007, who provide a detailed list of policy measures adopted in CESEE and the CIS, three countries stand out with respect to the pervasiveness of measures to curb excessive credit growth: Croatia, Romania and Bulgaria. On a scale of invasiveness Croatia is followed by Bulgaria and Romania. In Croatia authorities have been struggling to slow down rapid credit growth, especially foreign currency lending for a couple of years.¹ In 2008 Croatian banks faced a 75% loan-to-value ratio for housing loans and strict rules regarding the approval of new loans. Moreover, the authorities have imposed a series of sanctions to reduce foreign currency loans (on loans to unhedged borrowers and very high reserve requirements for foreign currency borrowing). In early 2007 the Croatian central bank (Hrvatska narodna banka, HNB) additionally tightened monetary policy by introducing credit ceilings (12% p.a.) and thus penalizing excessive bank lending by requiring banks to purchase low-yielding HNB bills on lending beyond the credit limits. The rate of purchase of compulsory HNB bills was set at 50% of the loans granted beyond the credit ceiling (75% as of January 2008). These measures were introduced from 2005 onwards, with their invasiveness increasing over time. Since 2005 Bulgaria and Romania have started to adopt similar reserve and capital requirements. In contrast to Croatia, however, the authorities have not introduced as severe measures to dampen foreign currency lending such as penalties for excessive credit growth.

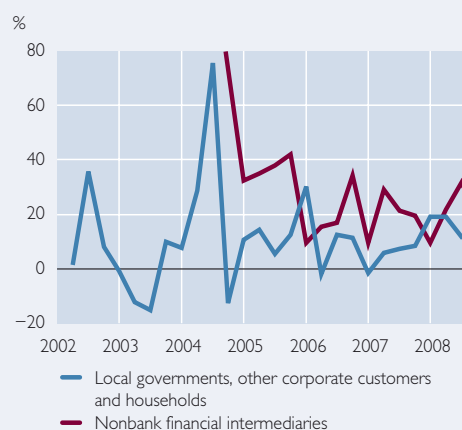
In light of these policy measures it is of interest to take a closer look at direct cross-border lending growth in the three aforementioned countries in order to see whether direct cross-border lending has been used as a means to circumvent credit controls.

Direct Lending to Nonbanks



Source: OeNB.

Sectoral Growth Rates of Direct Lending – Bulgaria

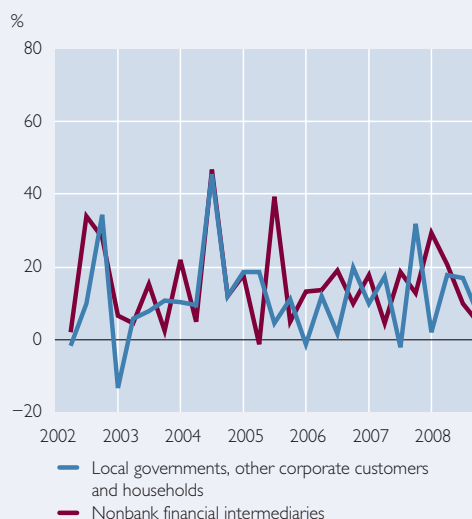


¹ See Gardó (2008) for a detailed analysis of policy measures in Croatia.

Sectoral Growth Rates of Direct Lending – Croatia



Sectoral Growth Rates of Direct Lending – Romania



Source: OeNB.

In Bulgaria and Croatia the proportion of direct cross-border lending in total lending decreased until 2004. Since then it has fluctuated around a relatively high fraction compared to other CESEE and CIS countries (see table 2), whereas Romania's direct cross-border lending structure seems to be dominated by idiosyncratic events.

According to the above figures, the growth rates of direct cross-border loans to NBs² do not seem to indicate that banks are bypassing restrictions on a large scale. In Romania and Bulgaria and to a lesser extent in Croatia, growth rates are highly volatile and the introduction of credit controls in these countries from 2005 onwards did not spur a surge in direct cross-border lending by Austrian banks.

A statistically significant difference in growth characteristics between direct cross-border lending to NBs and FIs cannot be established in the above-mentioned countries. The pooling of countries reveals a positive correlation (0.26) between growth rates of direct cross-border lending to NBs and FIs.

² See chapter 3 "Data" for a definition of nonbanks (NB).

6 Conclusions

Direct cross-border lending is an important component in the ongoing process of financial deepening in CESEE and the CIS. This paper investigates the characteristics as well as the determinants of Austrian banks' direct cross-border lending to CESEE and the CIS.

Regarding their characteristics, it is important to point out that direct cross-border lending has increased rapidly over the last few years, although its growth has lagged behind the growth

rates observed for indirect cross-border lending by Austrian banks. Direct cross-border loans have been growing particularly fast in the NMS-2007 as well as in SEE, and the bulk of these loans goes to corporates and is denominated in a foreign currency, with the euro taking a prominent position.

Regarding the economics of direct cross-border lending it is important to acknowledge its complex nature, which is influenced by a broad range of determining factors. Our analysis is a first

step towards understanding the role of geographic proximity and economic integration between the home and the host country as well as the importance of the presence of a subsidiary and the macroeconomic development of the host country in explaining direct cross-border lending. Based on a series of univariate analyses, we provide some evidence for the relevance of these factors. Especially small and medium-sized banks' direct lending behavior seems to be driven by a "neighborhood effect" as most of their lending to the region goes to adjacent CESEE countries.

Although data limitations have to be acknowledged, we have shown that economic integration measured by Austrian nonfinancial FDI as well as rising Austrian exports to CESEE and CIS countries are followed by an increase in direct lending to these countries. Moreover we have shown that the presence of a subsidiary indeed influences banks' direct cross-border lending patterns. More specifically, the direct cross-border lending behavior of banks without a subsidiary in any given country appears to resemble lending by banks with a subsidiary via this subsidiary in this country. In addition, the market entry in a country by means of a subsidiary also leads to an increase in the growth of direct lending. Thus direct cross-border lending and indirect cross-border lending seem to be complements rather than substitutes. In addition, host country factors such as GDP growth, private sector credit growth, financial intermediation growth and wage growth also appear to be associated with direct cross-border lending growth.

Furthermore we examine the role of domestic lending restrictions in a selection of CESEE and CIS countries and their effect on direct cross-border lending. Although our data do not allow any final conclusions, they indicate that there is no bypassing of restrictions on a larger scale regarding direct cross-border loans to nonbanks and nonbank financial institutions. However, circumvention of law is a complex issue, and given the aforementioned data restrictions, such acts of circumvention are likely to be difficult to detect.

Yet, we do not want to conclude without pointing out a number of important caveats to our analysis, the most important of which certainly relates to the fact that at this early point of our research we perform a series of univariate analyses only. A more sophisticated econometric analysis could potentially reveal different dynamics. Some of the above conclusions may even turn out to be spurious. However, an econometric analysis of the issue would have exceeded the scope of this paper and is therefore left to future research. Secondly, our analysis includes only Austrian banks' direct cross-border lending to CESEE and the CIS. Although Austrian banks account for about one-fifth of all lending to the region, the dynamics of direct cross-border lending may differ for banks resident in other countries. Finally, a potential selection bias in our lending data, which covers only lending above EUR 350,000 has to be acknowledged. Yet, we believe that the missing lending business is not materially relevant for direct cross-border loans.

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