

## Banking in transition economies: does foreign ownership enhance profitability?

Ilko Naaborg<sup>a</sup> and Robert Lensink<sup>b\*</sup>

<sup>a</sup>Department of Finance and Centre for International Banking, Insurance, and Finance (CIBIF), University of Groningen, The Netherlands; <sup>b</sup>External CREDIT fellow, Department of Economics, University of Nottingham, UK

This paper studies the relationship between foreign ownership and bank performance. A cross-section of 216 banks in transition economies in Central and Eastern Europe and Central Asia is used. In the analyses a continuous foreign ownership variable is applied. The results are checked by using a foreign ownership dummy variable. A negative relationship is found between foreign ownership and banks' interest revenues and profitability, although overhead costs are negatively related to foreign bank ownership as well. The results are independent of countries' GDP per capita and concentration in the banking sector. Evidence is presented for the existence of a home field advantage for domestic banks.

**Keywords:** banking; foreign ownership; profitability; transition countries

### 1. Introduction

In 2001 the value of Mergers and Acquisitions (M&A) in the banking sector in Central and Eastern Europe (CEE) reached a peak of € 2.7bn (ECB, 2005). The same study shows that in 2003, 77% of bank assets in the eight new EU member states in the CEE region were foreign-owned. However, in the euro area countries, foreign banks owned only 16% in terms of banking assets at the end of 2001 (Bikker and Wesseling 2003). As many studies have pointed out the interdependency of financial growth and economic growth, the foreign dominance in the banking sector in CEE and Central Asia gives rise to the question as to whether or not ownership of a specific type affects the health of a bank. Stated more operationally, do foreign ownership and domestic ownership affect bank profitability in the same way?

Berger, Young, and Genay (2000) formulated two main hypotheses considering the different impact from foreign and domestic ownership on bank performance.<sup>1</sup> First, the *home field advantage hypothesis* predicts that *domestic* owned banks are more profitable due to the absence of the structural agency costs that foreign owned banks are confronted with. Distance between the principal, the parent bank in the home country, and the agent, the subsidiary or branch in the host country, creates a cost for the foreign bank that is related to operating or monitoring the subsidiary or branch from a distance. Other factors leading to a comparative advantage for domestic banks are differences in language, culture and regulatory and supervisory structures between the home and the host country of the foreign bank. On the other hand, the *general global advantage hypothesis* predicts foreign owned banks to be more profitable due to some comparative advantages that domestic owned banks lack. These advantages stem from advanced technologies, more efficient

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\*Corresponding author. Email: b.w.lensink@rug.nl

organizations due to stiff competition in the home market, a more active market for corporate control and better access to an educated labour force with the ability to adapt to new technologies. The home field advantage theory and the global advantage theory predict mutually exclusive results for the performance of foreign owned banks. A third theory overcomes this mutual exclusiveness of both theories. The *limited form of the global advantage hypothesis* states that 'domestic banks are more efficient than foreign banks in most foreign countries, that domestic banks may be equally efficient as foreign banks from some countries, but that domestic banks may be less efficient than foreign banks from one (the United States) of the foreign countries' (Berger, Young, and Genay 2000). However, in this study we will not test for the effects of different home countries, as we will show that most of the owners of foreign banks in Central and Eastern Europe reside in Western Europe.

This paper tests the relationship between foreign ownership<sup>2</sup> and bank performance empirically. We identify exact foreign ownership of each bank, thereby obtaining a continuous variable. To test for the impact of foreign ownership on bank performance we first use this continuous variable assuming that foreign investors are able to influence strategic decisions even without owning the majority of the assets. To test for robustness, we *compare* performance of domestic and foreign majority owned banks, defining a bank as foreign if more than 50%<sup>3</sup> of the shares are owned by foreign investors. A dummy variable is used to represent foreign majority owned banks.

A major novelty of our paper is that the sample consists of banks in a set of countries that is more extensive than the set used in most other studies on bank performance in transition economies. Our sample contains banks in 22 transition economies: the three Baltic States, six Central European countries, six Balkan States, three Eastern European countries, two Caucasian countries and two economies in Central Asia.

As Lensink and Hermes (2004) find that economic development influences the impact of foreign bank entry on the performance of domestic banks, we test whether the level of GDP per capita influences the results found. Claessens, Demirgüç-Kunt, and Huizinga (2001) suggest that the number of foreign banks rather than their size is associated with competitive conditions in national banking markets. Therefore, we also test whether the two measures of foreign bank penetration influence the result found. Finally, we analyse whether the level of bank concentration affects the relationship between foreign ownership and bank performance.<sup>4</sup>

The remainder of this paper is organized as follows. Section 2 provides a brief review of the literature on banking performance and the role of foreign ownership. Section 3 presents the methodology and the data. Empirical results are shown in Section 4, while section 5 presents the conclusions.

## 2. Foreign ownership and bank performance

The existing literature on the relationship between foreign ownership and bank performance consists of two strands.<sup>5</sup> The first strand relates foreign ownership to bank efficiency. The second strand connects foreignness to financial indicators such as net interest income, profit before taxes, return on assets (ROA) or return on equity (ROE).

Evidence on bank efficiency in transition economies is found in cross-country studies by Green, Murinde, and Nikolov (2004), Fries and Taci (2005) and Bonin, Hasan, and Wachtel (2005). While most of the studies suggest that foreign banks are more cost efficient than domestic banks, Green, Murinde, and Nikolov do not find any evidence for a difference in efficiency between foreign and domestic banks.

With respect to the studies that look at financial indicators, Majnoni, Shankar, and Várhegyi (2003) conclude that during the period 1994–2000 foreign banks in Hungary were able to achieve a consistently higher profitability than domestic banks. The authors argue that this higher profitability is related to the length of time the foreign bank is present in the host country and to the nature of the establishment. In addition, the authors find greenfield investments outperforming other forms of entry of foreign banks. Sabi (1996) also concludes that foreign banks in Hungary are more profitable than domestic banks. However, some studies conclude otherwise. A descriptive study of Naaborg et al. (2004) shows that during the period 1995–2000 the ROA of foreign banks in eight transition economies was lower than that of domestic banks. The authors show that the ratio of overhead costs to total assets hardly differs between domestic and foreign banks. A descriptive study by Crystal, Dages, and Goldberg (2002) shows lower ROA for foreign banks in Argentina, Chile and Colombia. The authors point at higher provisioning of foreign banks as an explanation. Based on a very preliminary cross country study, Lang and So (2002) find that ownership structure has no impact on economic performance of banks. The authors conclude that the general belief that foreign ownership can help to improve performance of banks in emerging markets is not supported by empirical evidence.<sup>6</sup> Other authors present panel analyses. For instance, Fries, Neven, and Seabright (2002) examine the performance of banks in 16 transition economies for the period 1994–1999. Their study suggests that bank performance differs significantly depending on the competitive conditions as well as on the reform environment in which banks operate. However, the authors do not focus on differences in ownership. Bonin, Hasan, and Wachtel focus on the period 1996–2000 in estimating determinants of performance and efficiency of banks in 11 transition economies. They use ROA as the dependent variable measuring bank performance. The authors do not find significant results for foreign banks being more profitable than other banks.<sup>7</sup> Mian (2003) finds that domestic banks are more profitable than foreign banks on the loan side. However, private domestic banks have higher interest expense on deposits and lower revenue from the sale of banking services. The author concludes that there is no significant difference in the average profitability of private domestic and foreign banks in emerging countries.

In this paper we extend the empirical literature by analysing foreign ownership and bank performance in 22 transition countries in 2001. We follow the approach of Demirgüç-Kunt and Huizinga (1998). They specify and estimate determinants of net interest margins<sup>8</sup> and bank profitability using balance sheet data of banks in 80 countries, of which seven are transition countries, in the period 1988–1995. They also estimate a wide range of other determinants: bank specific characteristics, macro indicators, tax rates, a regulatory variable, financial structure variables and legal and institutional indicators. Demirgüç-Kunt and Huizinga (1998) find foreign ownership of banks to have a significant impact on banks' spreads and profitability. Foreign owned banks realise higher interest margins and higher profitability than domestic banks in *developing* countries. This finding may reflect the fact that the technology of foreign owned banks in developing countries is relatively strong; possibly strong enough to overcome any informational disadvantage. The high interest margin revenues also indicate that the banking system in developing countries is relatively inefficient. However, foreign owned banks in *developed* countries are shown to be *less* profitable.

We conclude that in the efficiency literature foreign banks in transition economies are usually found to be more efficient than domestic banks, providing evidence for the general global advantage theory. However, studies considering financial indicators give mixed results for the relative profitability of foreign banks in transition economies.

### 3. Data and methodology

#### 3.1 Data

In line with Demirgüç-Kunt and Huizinga (1998) we estimate determinants of bank performance. We present data on ownership<sup>9</sup> and performance indicators of 244 operating banks<sup>10</sup> in CEE and CA in 2001,<sup>11</sup> as available from the November 2002 BankScope data provided by Bureau Van Dijk. Banks included in BankScope roughly account for 90% of the assets of all banks. Table 1 lists the banks in the sample according to type of bank. Descriptive statistics involve the entire sample of banks. Regression results are presented for the entire sample as well as for the subset of commercial banks only.

For each bank we identify to what extent bank shares are owned by foreign investors and by domestic investors in order to construct a continuous foreign ownership variable. If more than 40% of a banks' ownership data was unavailable, the bank was not included in the sample. If 0–40% of share ownership was unavailable we included the bank and categorized this part as unknown. For the aggregate we were able to trace 78% of the owners of total bank shares.<sup>12</sup> Table 2 tabulates the banks in the sample according to the share of foreign ownership. We conclude that banks' foreign ownership is non-normally distributed. One-third of the banks is for less than 20% foreign owned (i.e. almost wholly domestic owned banks), while half of the banks in this region are almost wholly foreign owned (80–100%). One-fifth of the banks is in foreign hands with a wide range of 20–80%.

Table 1. Sample.

	COM	SAV	COO	INV	MLT	R&M	Total	%
Albania	2	1					3	1.3
Armenia	1						1	0.4
Azerbaijan	2						2	0.9
Belarus	1						1	0.4
Bosnia-H.na	5		1				6	2.7
Bulgaria	14	2	1	1			18	8.0
Croatia	21		1				22	9.8
Czech Rep.	17		2	1		1	21	9.4
Estonia	3						3	1.3
Hungary	18	1					19	8.5
Kazakhstan	3	1					4	1.8
Latvia	9						9	4.0
Lithuania	5						5	2.2
Macedonia	4						4	1.8
Poland	23	1	1		1		26	11.6
Romania	17						17	7.6
Russia	22	1		1	1		25	11.2
Slovak Rep.	12	1	1			1	15	6.7
Slovenia	11	2					13	5.8
Ukraine	4	1					5	2.2
Uzbekistan	1						1	0.4
Yugoslavia	3		1				4	1.8
Total	198	9	10	3	2	2	224	100.0

Bank categories include commercial banks (COM), savings banks (SAV), cooperative banks (COO), investment banks (INV), medium and long term credit banks (MLT), real estate and mortgage banks (R&M). Definitions are in line with the BankScope database. In the regression analyses we present the estimation results for the whole sample as well as for the subset of commercial banks.

Table 2. Level of foreign ownership in CEE banks, 2001.

Foreign ownership (%)	No. of banks	Share (%)	Cumulative percentage
0–20	70	31.25	31.25
20–40	11	4.91	36.16
40–60	15	6.70	42.86
60–80	18	8.04	50.89
80–100	61	27.23	78.12
100	49	21.88	100.00
Total	224	100.00	100.00

Level of foreign ownership is the percentage of bank shares owned by foreign investors. The table shows the absolute number of banks and the relative number of banks in the sample for each level of ownership. The sample includes banks from Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, Slovak Rep., Slovenia, Ukraine, Uzbekistan, and Yugoslavia. Source: November 2002 issue of Bureau van Dijk's BankScope database

Table 3 shows the origin of the foreign investors. For the aggregate, total foreign ownership amounts to 63.3%.<sup>13</sup> Austria's number one position as foreign investor of banking assets is mainly due to the presence of six large Austrian banks: Bank Austria, Erste Bank,<sup>14</sup> HVB Bank,<sup>15</sup> Österreichische Volksbanken and the presence of Raiffeisen Zentralbank Österreich in 12 transition countries. Belgium's second position is explained by the large amounts of banking assets of the Belgian bank KBC in the region through its stakes in the Czech CSOB, the Polish Kredytbank, the Hungarian K&H Bank and the Slovenian Nova Ljubljanska Banka. On the other hand, interregional cross-border foreign investment appears negligible.

Table 3. Origin of financial FDI in CEE banks, 2002.

Non-CEE/CIS origin	Assets (%)	CEE/CIS origin	Assets (%)
Austria	14.1	Estonia	0.3
Belgium	8.6	Hungary	0.3
Germany	6.5	Czech Republic	0.2
Italy	6.4	Poland	0.2
USA	6.3	Bulgaria	0.1
France	4.6	Romania	0.1
The Netherlands	4.1	Russia	0.1
Luxembourg	3.2	Slovak Republic	0.1
Sweden	2.2		
EBRD and IFC	2.1		
Other	3.9		
Total	62.0	Total	1.3%

The table presents the origin of foreign owners coming from non-CEE countries and the origin of foreign owners coming from CEE countries. Ownership of assets (Assets) by origin is scaled to total banking assets in the sample. The sample includes banks from Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine, Uzbekistan, and Yugoslavia. Source: November 2002 issue of Bureau van Dijk's BankScope database.

Table 4. Foreign bank penetration and concentration of the banking sector, 2001.

	Number of foreign banks/total banks		Foreign owned assets/total bank assets		Bank concentration	
	Average	st. dev.	average	st.dev.	average	st.dev.
EU-accession	58%	15%	71%	25%	58%	21%
Other transition	27%	31%	24%	31%	80%	20%

Source: Sample.

Averages are from country level data.

St.dev. = standard deviation.

In addition, we investigate whether (i) GDP per capita, (ii) concentration of the banking sector and (iii) foreign bank penetration influence the relationship between foreign ownership and the three dependent variables. The presence of foreign banks is measured in two ways. First, we use the relative *number* of foreign banks present as a ratio of a countries' total number of banks. For this ratio, a foreign bank is defined as a bank of which more than 50% of the shares are in foreign hands. Secondly, we use the relative amount of foreign bank *assets* as a ratio of a countries' total bank assets. For the denominator of this ratio, we sum the values of the per bank value of foreign share ownership times bank assets. Bank concentration is defined as the ratio of the total assets of the three largest banks to total bank assets. Descriptive statistics on these variables can be found in Appendix 1 as well.

Table 4 shows average foreign bank penetration and average concentration of the banking sector in 11 EU-accession countries<sup>16</sup> and in the other transition economies. The two groups differ in four respects. First, foreign bank penetration is more substantial in the EU Accession group than in the rest of the transition economies. Second, the group of EU Accession countries is more homogeneous with respect to foreign bank penetration than the group of the other transition economies. Third, foreign banks in the EU Accession countries appear to be larger than those in the non-Accession countries. Finally, concentration of the banking sector in the non-Accession countries is structurally more substantial than in the Accession countries.

### 3.2 Methodology

We proxy bank performance in three ways, using the following accounting rule:

$$\text{profit} = \text{net interest income} + \text{non-interest income} - \text{overhead costs} + \text{loan loss provisions} \quad (1)$$

Profit before tax is the main dependent variable. The other two dependent variables we test for are net interest revenues, the main source of profit, and overhead costs. Non-interest income indicates the non-lending activities of a bank and loan loss provisioning measures provisioning for bad debts.

To examine whether foreign ownership makes a difference in banks' performance the three dependent variables are regressed on two separate foreign ownership variables, on balance sheet and income statement data and on macro-economic data.

We estimate the following basic equation:

$$I_{ij} = aFOR_{ij} + bB_{ij} + cC_j + dCD_j + e \quad (2)$$

$I_{ij}$  is a vector of performance measures it includes net interest margin, profit before taxes or overhead costs of bank  $i$  in country  $j$ .  $FOR_{ij}$  indicates the percentage of shares of bank  $i$  in country  $j$  in foreign hands or a dummy variable taking the value of 1 if more than 50% of the shares are owned by foreign investors. Vector  $B$  consists of bank specific variables for bank  $i$  in country  $j$ . These variables include loan loss provisions, equity (a proxy for bank size), non-earning assets, customer and short term funding and loans (a proxy for risk). Appendix 1 shows the descriptive statistics of bank specific variables per country. All bank variables are scaled to total assets. Vector  $C$  consists of the control variables GDP growth, the interest rate and GDP per capita. Descriptive statistics of the country specific variables are provided in Appendix 1.  $CD$  is a country dummy variable. Several specifications of (1) are estimated. For each specification we present the results for the whole sample as well as for the subset of commercial banks.

We have estimated the three equations for the net interest margin, profit before taxes and the overhead costs as a system, using the generalized least squares method of the Zellner type, or in other words, Zellner's seemingly unrelated regression method. We estimated for the entire sample as well as for the subset of commercial banks. We have used this method to account for the possible cross-equation correlation among the errors. Zellner's SUR method involves generalized least-squares estimation and achieves an improvement in efficiency by taking into account the fact that cross-equation error correlations may not be zero. SUR gives the same outcome as OLS if the cross-equation covariance equals zero, and if the explanatory variables in the different equations are identical. The possible list of explanatory variables in all equations is the same. However, we drop highly insignificant variables from the different equations, so that the explanatory variables differ per equation, and thus SUR will give other results than OLS. Significant intercept dummies are taken into account as well as a constant term.

## 4. Empirical results

### 4.1 Main findings

Table 5(a) shows the results of the estimates using a *continuous* foreign ownership variable. The level of foreign ownership has a significantly negative impact on bank performance indicators. Banks with higher levels of foreign ownership generate lower net interest revenues. However, overhead costs also decrease with a high level of foreign shareholders. It appears that these lower revenues are not compensated by the lower overhead costs: the higher the level of foreign ownership, the lower the banks' profit.

Table 5(b) presents estimation results based on a foreign ownership *dummy* variable. We conclude that foreign majority owned banks have lower net interest revenues, overhead costs and profit. Admittedly, it is not surprising that both foreign ownership variables yield similar results as the continuous variable seems to behave to a large extent as a dummy variable (see Table 2). For this very reason, the rest of this section presents the estimation results based on the continuous foreign ownership variable only.

To examine whether economic development affects the negative relationship between foreign ownership and bank performance we interact foreign ownership with GDP per capita. The estimates of the interaction variable in Table 6 shows that a countries' level of GDP per capita has no significance in this respect.

Concentration in the banking sector hardly affects bank performance. This is in line with the conclusion of the ECB indicating that concentration ratios do not necessarily reflect competitive conditions within the region (ECB, 2005). In addition, the estimates of the interaction variable

Table 5(a). Foreign ownership and performance (continuous variable).

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (continuous)	-9.37E-05*** (-4.14)	-7.88E-05*** (-3.31)	-7.63E-05** (-2.13)	-7.20E-05* (-1.87)	-0.00012*** (-3.34)	-9.94E-05*** (-2.71)
Loan loss provisions	0.248*** (3.56)	0.200*** (2.84)	-0.776*** (-11.17)	-0.804*** (-11.45)	-0.157 (-1.47)	-0.227** (-2.06)
Equity	0.059*** (4.75)	0.069*** (5.45)	0.030** (2.20)	0.024* (1.72)	0.056*** (2.92)	0.061*** (3.11)
Non-earning assets	0.030** (2.06)	0.029** (2.03)	-0.052*** (-2.67)	-0.044** (-2.15)	0.116*** (5.25)	0.107*** (4.88)
Customer and ST funding	0.010 (1.24)	0.015* (1.65)			0.029** (2.16)	0.026** (1.82)
Loans	0.0003*** (4.61)	0.0003*** (4.51)			0.0003*** (3.88)	0.0004*** (4.33)
Growth			0.0035*** (4.61)	0.0035*** (4.32)		
Interest rate	-0.0005** (-2.08)	-0.0004 (-1.62)			-0.00097*** (-2.59)	-0.0008** (-2.05)
GDP per capita	-2.20E-06*** (-5.02)	-1.94E-06*** (-4.17)	-6.15E-07 (-0.88)	-3.23E-07 (-0.43)	-1.57E-06** (-2.31)	-1.73E-06** (-2.38)
Sample	All	Commercial	All	Commerical	All	Commercial
Adj. R <sup>2</sup>	0.46	0.48	0.38	0.40	0.35	0.39
N	199	176	216	191	199	176

*t*-values between parentheses.

In the equation for net interest margin three significant country dummies (Croatia, Hungary and Romania) are added; in the equation for profit significant country dummies for Macedonia and Poland are added; for overhead costs country dummies for Romania and the Russian Federation are added.

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.



Table 5(b). Foreign majority ownership and performance (dummy variable).

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (dummy)	-0.0085*** (-4.32)	-0.0069*** (-3.30)	-0.0069** (-2.21)	-0.0068** (-2.02)	-0.011*** (-3.70)	-0.0085*** (-2.58)
Loan loss provisions	0.243*** (3.50)	0.199*** (2.81)	-0.779*** (-11.23)	-0.806*** (-11.50)	-0.164 (-1.54)	-0.229** (-2.07)
Equity	0.059*** (4.77)	0.069*** (5.46)	0.029** (2.16)	0.0233 (1.64)	0.057*** (2.96)	0.062*** (3.14)
Non-earning assets	0.032** (2.22)	0.031** (2.16)	-0.050** (-2.55)	-0.041** (-2.02)	0.119*** (5.40)	0.109*** (4.96)
Customer and ST funding	0.012 (1.35)	0.016* (1.74)			0.030** (2.30)	0.027* (1.92)
Loans	0.00026*** (4.71)	0.00026*** (4.56)			0.00034*** (4.01)	0.00039*** (4.39)
Growth			0.0035*** (4.61)	0.0034*** (4.30)		
Interest rate	-0.0005** (-2.13)	-0.0004* (-1.65)			-0.001*** (-2.71)	-0.0008** (-2.12)
GDP per capita	-2.17E-06*** (-4.98)	-1.92E-06*** (-4.11)	-5.87E-07 (-0.85)	-3.10E-07 (-0.42)	-1.55E-06** (-2.29)	-1.71E-06** (-2.34)
Sample	All	Commercial	All	Commercial	All	Commercial
Adj. R <sup>2</sup>	0.47	0.48	0.38	0.41	0.36	0.39
N	199	176	216	191	199	176

*t*-values between parentheses.

In the equation for net interest margin three significant country dummies (Croatia, Hungary and Romania) are added; in the equation for profit significant country dummies for Macedonia and Poland are added; for overhead costs country dummies for Romania and the Russian Federation are added.

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.

Table 6. Test 1: does economic development matter?

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (continuous)	-0.00013*** (-2.89)	-0.00012** (-2.45)	-0.00012* (-1.68)	-9.78E-05 (-1.32)	-0.0002*** (-2.83)	-0.00016** (-2.10)
Loan loss provisions	0.247*** (3.56)	0.202*** (2.86)	-0.773*** (-11.11)	-0.801*** (-11.37)	-0.161 (-1.51)	-0.226** (-2.05)
Equity	0.059*** (4.80)	0.070*** (5.52)	0.030** (2.21)	0.024* (1.73)	0.059*** (3.04)	0.063*** (3.20)
Non-earning assets	0.030** (2.09)	0.029** (2.07)	-0.051*** (-2.65)	-0.044** (-2.14)	0.117*** (5.32)	0.108*** (4.94)
Customer and ST funding	0.011 (1.25)	0.015* (1.70)			0.029** (2.18)	0.027* (1.89)
Loans	0.00025*** (4.56)	0.00025*** (4.43)			0.00033*** (3.81)	0.00037*** (4.23)
Growth			0.0035*** (4.52)	0.0034*** (4.27)		
Interest rate	-0.00054** (-2.16)	-0.00045* (-1.75)			-0.001*** (-2.71)	-0.0008** (-2.18)
GDP per capita	-2.59E-06*** (-4.46)	-2.34E-06*** (-3.80)	-1.04E-06 (-1.09)	-6.01E-07 (-0.59)	-2.38E-06*** (-2.62)	-2.30E-06** (-2.38)
GDP per capita* foreign ownership	9.15E-09 (0.99)	9.71E-09 (0.97)	9.29E-09 (0.66)	6.29E-09 (0.41)	1.91E-08 (1.35)	1.38E-08 (0.90)
Sample	All	Commercial	All	Commerical	All	Commercial
Adj. R <sup>2</sup>	0.46	0.48	0.38	0.40	0.36	0.39
N	199	176	216	191	199	176

*t*-values between parentheses.

In the equation for net interest margin three significant country dummies (Croatia, Hungary and Romania) are added; in the equation for profit significant country dummies for Macedonia and Poland are added; for overhead costs country dummies for Romania and the Russian Federation are added.

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.

Table 7. Test 2: does concentration matter?

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (continuous)	-0.00024*** (-3.00)	-0.00022** (-2.47)	-1.84E-05 (-0.15)	-2.63E-06 (-0.02)	-0.00026** (-2.10)	-0.00029** (-2.08)
Loan loss provisions	0.2575*** (3.69)	0.210*** (2.94)	-0.774*** (-11.24)	-0.801*** (-11.47)	-0.125 (-1.17)	-0.1888* (-1.71)
Equity	0.055*** (4.35)	0.065*** (5.01)	0.029** (2.13)	0.024* (1.72)	0.0463** (2.36)	0.050** (2.48)
Non-earning assets	0.026* (1.81)	0.026* (1.79)	-0.048** (-2.48)	-0.0418** (-2.05)	0.1195*** (5.36)	0.1106*** (5.01)
Customer and ST funding	0.0079 (0.90)	0.012 (1.31)			0.0213 (1.57)	0.017 (1.17)
Loans	0.00024*** (4.21)	0.00024*** (4.26)			0.00030*** (3.44)	0.00035*** (4.00)
Growth			0.00414*** (5.07)	0.0040*** (4.69)		
Interest rate	-0.00041 (-1.56)	-0.00029 (-1.08)			-0.0010*** (-2.64)	-0.0008** (-1.99)
GDP per capita	-2.24E-06*** (-5.16)	-1.94E-06*** (-4.16)	-3.47E-07 (-0.49)	-8.84E-08 (-0.12)	-1.68E-06*** (-2.48)	-1.86 <sup>E</sup> -06** (-2.57)
Concentration	-0.019* (-1.78)	-0.018 (-1.47)	-0.010 (-0.63)	-0.0054 (-0.30)	-0.030* (-1.79)	-0.036* (-1.85)
Concentration * foreign ownership	0.00027* (1.90)	0.00026 (1.64)	-0.0001 (-0.49)	-0.00012 (-0.53)	0.00025 (1.15)	0.00033 (1.35)
sample	All	Commercial	All	Commercial	All	Commercial
Adj. R <sup>2</sup>	0.47	0.48	0.38	0.41	0.36	0.40
N	199	176	216	191	199	176

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.

indicate no significant impact on the negative relationship between foreign ownership and bank performance.

Table 8 and 9 present estimation results which include foreign bank penetration, measured in two ways. Both measures of foreign bank penetration show a significantly negative impact on net interest margins and profit. This contrasts with the findings of Claessens, Demirgüç-Kunt, and Huizinga (2001), who argue that the number of foreign banks rather than their size is associated with competitive conditions in national banking markets. The estimates of the interaction variable show that as foreign bank penetration rises, banks with higher levels of foreign ownership are more profitable than banks with lower levels of foreign ownership.

#### 4.2 *The control variables*

When we summarize the results for the other dependent variables, we find that the impact of *bank specific* control variables seems to be robust over the different tests. In all tests, loan loss provisions have a positive significant relationship with net interest revenues and a negative relationship with banks' profitability (Tables 5–8). Bank size does matter. Net interest margins, overhead costs and profit are all positively affected by bank size. Non-earning assets are negatively related to profitability throughout all test results. The level of customer and short-term funding is of no influence at all for profit. The loan to asset ratio, an indicator of risk, does not have any influence on profits. A rise in the loan/asset ratio raises net interest margins and overhead costs as well.

The results for the *macro-economic* control variables are relatively robust as well. Countries' GDP growth rate is positively related to bank profitability throughout all the tests. However, the level of the interest rate is not related to bank profitability but is negatively related to both net interest margin revenues and overhead costs. Finally, economic development of a country, measured by GDP per capita, is not significantly related to bank profitability in all tests.

### 5. Summary and conclusions

Foreign investors (usually foreign banks) own 63% of all banking assets in the 22 former soviet economies in Central and Eastern Europe and Central Asia. In the euro area only 16% of banking assets are owned by foreign investors. Foreign bank penetration in European transition economies seems to be related to the prospect of EU Accession as in the 11 EU accession countries 71% of banking assets is in foreign hands while in 11 other European transition economies only 24% of the banking assets is owned by non-residents.

This study extends the current literature on the relationship between foreign ownership and bank performance in transition countries in two ways. First, we broaden the analysis by including a wide range of transition economies. Second, we empirically relate *exact* foreign ownership to bank performance using a continuous variable and check with a foreign ownership dummy variable. However, as most of the banks are either almost wholly domestic owned or almost wholly foreign owned, the continuous foreign ownership variable has the feature of a dummy variable.

On the origin of financial FDI, we conclude that the main investors come from Austria, Belgium, Germany and Italy. These four countries make up for almost 60% of financial FDI in the region. Distance seems to play a role in financial FDI in this region. However, the most important result of this study is that that foreign ownership negatively influences interest revenues and profits although foreign ownership and overhead costs are also negatively related. The level of countries' GDP per capita or concentration of the banking sector is irrelevant for the impact of foreign ownership. However, foreign bank penetration does have an impact since in an environment with

Table 8. Test 3: does the relative amount of foreign banks' assets matter?

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (continuous)	-0.00015*** (-2.99)	-0.00017*** (-3.33)	-0.00024*** (-3.29)	-0.00019** (-2.53)	-0.00010 (-1.38)	-0.000114 (-1.43)
Loan loss provisions	0.240*** (3.50)	0.197*** (2.87)	-0.784*** (-11.45)	-0.811*** (-11.68)	-0.165 (-1.52)	-0.236** (-2.14)
Equity	0.057*** (4.65)	0.066*** (5.35)	0.0271** (2.00)	0.0212 (1.51)	0.056*** (2.91)	0.0603*** (3.07)
Non-earning assets	0.028* (1.95)	0.025* (1.82)	-0.054*** (-2.81)	-0.048** (-2.38)	0.116*** (5.25)	0.1069*** (4.88)
Customer and ST funding	0.0096 (1.13)	0.013 (1.41)			0.028** (2.09)	0.0238* (1.68)
Loans	0.00025*** (4.49)	0.00023*** (4.11)			0.00033*** (3.83)	0.00037*** (4.13)
Growth			0.0029*** (3.09)	0.0027*** (2.85)		
Interest rate	-0.00080*** (-2.73)	-0.0008*** (-2.72)			-0.0012*** (-2.78)	-0.0011** (-2.53)
GDP per capita	-2.06 <sup>E</sup> -06*** (-4.74)	-1.73 <sup>E</sup> -06*** par (-3.82)	-5.63 <sup>E</sup> -07 (-0.82)	-1.82 <sup>E</sup> -07 (-0.25)	-1.55 <sup>E</sup> -06** (-2.27)	-1.72 <sup>E</sup> -06** (-2.34)
Relative amount of foreign assets	-0.0149*** (-2.60)	-0.0220*** (-3.55)	-0.024*** (-2.64)	-0.025*** (-2.59)	-0.0046 (-0.49)	-0.0096 (-0.92)
Rel. amount of foreign assets* foreign ownership	0.00013 (1.63)	0.00021** (2.52)	0.00033*** (2.76)	0.00028** (2.15)	-1.10E-05 (-0.09)	4.40E-05 (0.34)
Sample	All	Commercial	All	Commercial	All	Commercial
Adj. R <sup>2</sup>	0.48	0.51	0.40	0.42	0.35	0.39
N	199	176	216	191	199	176

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.

Table 9. Test 4: does the relative number of foreign banks matter?

	Net interest margin		Profit before taxes		Overhead costs	
Foreign ownership (continuous)	-9.55E-05* (-1.72)	-0.00011* (-1.95)	-0.00025*** (-3.16)	-0.00019** (-2.20)	-6.86E-05 (-0.81)	-3.84E-05 (-0.42)
Loan loss provisions	0.248*** (3.60)	0.203*** (2.92)	-0.777*** (-11.33)	-0.806*** (-11.53)	-0.153 (-1.41)	-0.220** (-2.00)
Equity	0.058*** (4.68)	0.067*** (5.39)	0.026* (1.90)	0.0218 (1.53)	0.0565*** (2.92)	0.0614*** (3.11)
Non-earning assets	0.028** (1.98)	0.026* (1.87)	-0.056*** (-2.92)	-0.049** (-2.39)	0.1166*** (5.25)	0.1085*** (4.93)
Customer and ST funding	0.0112 (1.31)	0.015 (1.62)			0.0290** (2.17)	0.027* (1.86)
Loans	0.00025*** (4.56)	0.00025*** (4.37)			0.00033*** (3.83)	0.00033*** (4.31)
Growth			0.0031*** (3.31)	0.0030*** (3.06)		
Interest rate	-0.00061** (-2.25)	-0.00061** (-2.17)			-0.0010*** (-2.61)	-0.00079** (-2.01)
GDP per capita	-2.12E-06*** (-4.80)	-1.73E-06*** (-3.68)	-5.54E-07 (-0.80)	-1.45E-07 (-0.19)	-1.57E-06** (-2.29)	-1.77E-06** (-2.40)
Number of foreign owned banks	-0.0081 (-1.04)	-0.017** (-2.00)	-0.029** (-2.23)	-0.0288* (-1.95)	0.0051 (0.40)	0.0074 (0.53)
Number of foreign owned banks* foreign ownership	2.98E-05 (0.27)	0.00012 (1.04)	0.00042*** (2.60)	0.00033* (1.80)	-0.0001 (-0.62)	-0.00014 (-0.73)
Sample	All	Commercial	All	Commercial	All	Commercial
Adj. R <sup>2</sup>	0.46	0.49	0.39	0.41	0.35	0.39
N	199	176	216	191	199	176

\*, \*\* and \*\*\* indicate significance levels of 10%, 5% and 1% respectively.

higher foreign bank presence banks with higher levels of foreign ownership are more profitable than banks with lower levels of foreign ownership. The results are robust and similar for the subset of commercial banks and for the whole sample, which includes e.g. savings banks and cooperative banks. This study is the first to establish empirically evidence for the existence of a home field advantage for domestic banks in transition economies in Europe.

Additional studies should identify empirically the cause(s) of the negative relationship between foreign ownership and bank profitability. Ideally, the question should be whether time plays a role. It would be worthwhile to know whether as transition economies develop, foreign banks lose some of their hypothesized comparative advantages. Another cause for the lower performance of foreign banks might be the existence of information asymmetry between the owner in the home country (the principal) and the managers of the foreign subsidiary in the host country (the agent). This information asymmetry might, for example, induce the foreign parent to approve only low risk credit proposals submitted by the foreign subsidiary. An additional cause for the relative lower profitability of foreign banks could be the substitution of profit maximization with increasing its market share. Finally, additional studies on foreign bank performance could focus on whether the quality of the institutional context affects foreign and domestic banks differently.

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## Notes

1. Berger, Young, and Genay formulated their hypotheses in terms of efficiency. In this study we formulate in terms of profitability.
2. In this study we differentiate between ‘domestic ownership’ of bank shares by residents and ownership of bank shares by non-residents, ‘foreign ownership’. We consider the origin of holders of publicly traded shares of banks in CEE and Central Asia less relevant. First, stock markets in the region are small. Second, although in Poland authorities push foreign owners of local banks to have a minimal percentage of total shares traded on the stock exchange, many banks in the region have been delisted. For example, Swedish SEB delisted Estonian Eesti Ühispank in 2001, in the Czech Republic Austrian Erste Bank delisted Česka Spořitelna in 2002 and Italian Unicredito delisted Zivnostenska Banka in 2003.
3. We assume that if an investor has more than 50% of the shares, he/she has the majority of voting rights and the dummy variable takes a value of 1. In the literature, a dummy variable measuring foreign ownership is usually based on a threshold of 50% ownership of shares. However, in a study of Grigorian and Manole (2002) on bank efficiency, a bank is regarded as foreign on the basis of a minimum of 30% non-domestic shareholders.
4. See Mamatzakis, Staikouras, and Koutsomanoli-Fillipaki (2005) for details on bank concentration in seven South Eastern European economies. The authors conclude that the banking industry in this region operates under monopolistic competition.
5. Other bank performance literature relates foreign ownership to the stability of foreign banks’ credit supply. For an empirical study of the CEE region see de Haas and van Lelyveld (2003).
6. The authors state that they do not rely on BankScope for the classification of the origin of owners. Instead they search for banks’ *ultimate* owners on the Internet, although BankScope does provide information on ultimate owners as well. We will not follow this method and use the BankScope ownership information focusing on the *direct* owners of banks.
7. However, they do find that banks in which international institutional investors have a stake are relatively more profitable. The authors tend to conclude that, since international investors do seem to be able to choose banks with higher financial returns and more profit efficiency, the evidence is more supportive of the cherry-picking hypothesis than for the technology-transfer hypothesis.

8. By studying net interest margins, this paper indirectly links to the efficiency literature. One can measure the efficiency of the financial sector by taking the differences in banks' net interest margin; the accounting value of the net interest income. Usually efficiency is studied with the stochastic frontier approach.
9. Our definition of 'owner' is the 'direct owner'. Sometimes the direct owner is the ultimate owner. In case the direct owner is not the ultimate owner we assume the ultimate owner usually is also a foreign investor.
10. The BancScope consolidation code 'Institutions' applies to our set of banks.
11. BancScope provides ownership data only for the 'last year'. As we do not want to assume ownership constant over time, especially in transition economies, we chose to perform a cross-country analysis rather than a panel analysis.
12. As we were able to trace 78% of the shares of all banks, we were left with an unknown ownership of 22% of bank shares in this region albeit the 60%-constraint for banks to enter our sample. Ownership data in transition economies is still not fully available.
13. This result is in line with De Haan and Naaborg (2004, p.191). These authors find that in 2001 average total foreign owned bank assets in 11 CEE countries amount to 62%. Their conclusion is based on information of central banks in the region.
14. Erste Bank is the number one largest acquirer in the region according to deal value during the period 1990–2004 (ECB, 2005). One of the determinations of Austrian bank entry could be proximity and/or the cultural ties of Austria with the region originating from the Austrian-Habsburger Empire. Naaborg and DeHaan (2005) study in more detail entry considerations of foreign banks into CEE.
15. In the summer of 2005, Italian UniCredito took over HVB Bank.
16. Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

## References

- Berger, A.N., R. deYoung, and H. Genay, et al. 2000. Globalization of financial institutions: Evidence from cross-border banking performance. *Brookings-Wharton Papers on Financial Services* 3: 23–158.
- Bikker, J., and S. Wesseling. 2003. Intermediation, integration and internationalization: A survey on banking in Europe. *De Nederlandsche Bank Occasional Studies* 1, no. 3: 1–28.
- Bonin, J.P., I. Hasan, and P. Wachtel. 2005. Bank performance, efficiency and ownership in transition countries. *Journal of Banking and Finance* 29, no. 1: 31–5.
- Claessens, S., A. Demirgüç-Kunt, and H. Huizinga. 2001. How does foreign entry affect domestic banking markets? *Journal of Banking and Finance* 25: 891–911.
- Crystal, J., B. Dages, and L. Goldberg. 2002. Has foreign bank entry led to sounder banks in Latin America? *Current Issues in Economics and Finance, Federal Reserve Bank of New York* 8: 1–6.
- De Haan, J., and I.J. Naaborg. 2004. Financial intermediation in accession countries: The role of foreign banks. In *Financial intermediation in the new Europe*, ed. D. Masciandaro, 181–207. Cheltenham, UK: Edward Elgar.
- De Haas, R., and I. van Lelyveld. 2003. Foreign banks and credit stability in Central and Eastern Europe. DNB Staff Reports No. 109, De Nederlandsche Bank.
- Demirgüç-Kunt, A., and H. Huizinga. 1998. Determinants of commercial bank interest margins and profitability. World Bank Policy Research Working Paper.
- EBRD. 2003. Transition Report Update – May 2003, London, UK.
- ECB. 2005. Banking structures in the new EU member states. Frankfurt am Main, Germany.
- Fries, S., D. Neven, and P. Seabright. 2002. Bank performance in transition economies. EBRD Working Paper no. 76.
- Fries, S., and A. Taci. 2005. Cost efficiency of banks in transition: Evidence from 289 banks in 15 post-communist countries. *Journal of Banking and Finance* 29: 55–81.
- Green, J.C., V. Murinde, and I. Nikolov. 2004. Are foreign banks in Central and Eastern European countries more efficient than domestic banks? *Journal of Emerging Market Finance* 3, no. 2: 175–205.
- Grigorian, D.A., and V. Manole. 2002. Determinants of commercial bank performance in transition: an application of data envelopment analysis. World Bank Policy Research Working Paper 2850, World Bank, Washington, DC, June.
- IMF (various years) *International Financial Statistics*.
- Lang, L.H.P., and R.W. So. 2002. Bank ownership structure and economic performance. Very preliminary draft, Chinese University of Hong Kong.
- Lensink, R. and N. Hermes. 2004. The short-term effects of foreign bank entry on domestic bank behaviour: Does economic development matter? *Journal of Banking and Finance* 28, no. 3: 553–68.



- Majnoni, G., R. Shankar, and E. Várhegyi. 2003. The dynamics of foreign bank ownership: Evidence from Hungary. Working Paper 3114, World Bank Policy Research.
- Mamatzakis, E., C. Staikouras, and N. Koutsomanoli-Fillipaki. 2005. Competition and concentration in the banking sector of the South Eastern European Region. *Emerging Markets Review* 6: 192–209.
- Mian, A. 2003. Foreign, private, domestic and government banks; new evidence from emerging markets. Working Paper, University of Chicago Business School.
- Naaborg, I.J., et al. 2004. How important are foreign banks in the financial development of transition countries. *Journal of Emerging Market Finance* 3, no. 2: 9–123.
- Naaborg, I.J., and J. De Haan. 2006. Bank entry strategies in transition economies. Evidence from Central and Eastern Europe. University of Groningen.
- Sabi, M. 1996. Comparative analysis of foreign and domestic bank operation in Hungary. *Journal of Comparative Economics* 22, no. 2: 179–88.
- [www.worldbank.org/data/](http://www.worldbank.org/data/)

## Appendix 1. Descriptive statistics.

	Obs.	FOR	NFB	FBA	NIR	OHC	PROF	LOANS	NII	LLR	G	INT	GDPPC	CONC
Albania	3	0.67	0.67	0.21	2.5	2.3	2.3	0.4	0.7	0.0	7.8	7.7	1,389	1.00
Armenia	1	1.00	1.00	1.00	4.6	4.3	2.4	4.7	2.1	0.0	6.0	19.9	796	1.00
Azerbaijan	2	0.13	0.00	0.00	4.7	3.8	2.5	50.0	4.1	2.5	11.1	16.5	789	0.95
Belarus	1	0.00	0.00	0.00	2.5	5.4	2.7	n.a.	6.2	0.5	5.8	61.0	1,242	1.00
Bosnia-H.na	6	0.99	0.33	0.54	3.8	6.7	0.9	41.0	4.6	1.4	5.9	–	1,213	0.58
Bulgaria	18	0.92	0.60	0.72	4.4	5.0	1.1	33.6	2.5	0.5	5.8	4.6	1,835	0.56
Croatia	22	0.74	0.35	0.82	3.6	4.1	1.5	52.8	1.9	0.3	3.7	4.3	5,155	0.58
Czech Rep.	21	0.85	0.59	0.85	2.0	2.2	0.6	31.7	1.1	0.0	2.9	5.1	6,204	0.70
Estonia	3	0.99	0.75	0.99	3.5	3.4	0.9	56.7	2.2	0.9	6.9	4.0	4,292	0.99
Hungary	19	0.98	0.58	0.53	3.9	4.3	1.7	55.4	1.9	0.0	5.2	10.8	5,805	0.49
Kazakhstan	4	0.00	0.08	0.04	5.5	6.3	1.1	64.8	4.8	1.1	9.6	5.3	1,706	0.70
Latvia	9	0.99	0.43	0.49	3.0	3.9	1.0	51.7	2.7	0.1	6.6	5.1	3,683	0.58
Lithuania	5	0.88	0.71	0.96	3.3	5.4	0.6	51.6	2.4	0.3	3.9	3.0	3,683	0.87
Macedonia	4	0.73	0.43	0.55	4.7	3.7	2.0	18.8	4.2	3.2	4.6	11.0	1,970	0.84
Poland	26	0.87	0.70	0.68	2.6	3.6	0.8	45.0	2.7	0.8	4.0	12.0	5,275	0.31
Romania	17	0.85	0.52	0.37	6.0	7.5	2.4	35.2	2.8	0.6	1.8	42.2	1,976	0.41
Russia	25	0.00	0.12	0.12	4.1	6.2	3.6	43.4	2.3	0.2	8.3	12.5	2,422	0.53
Slovak Rep.	15	0.93	0.80	0.95	2.6	3.1	1.3	40.6	1.6	0.1	2.2	7.8	4,158	0.23
Slovenia	13	0.00	0.31	0.21	2.2	3.4	0.9	54.1	2.2	1.0	4.6	10.9	10,673	0.62
Ukraine	5	0.50	0.11	0.11	4.8	6.6	0.8	64.3	2.1	1.2	5.9	17.1	885	0.49
Uzbekistan	1	0.00	0.00	0.00	1.9	1.2	0.6	58.5	0.4	0.6	4.0	34.5	269	1.00
Yugoslavia	4	0.50	0.18	0.07	1.2	2.4	−0.6	n.a.	0.8	0.3	5.0	80.1	1,394	0.71

Macro-economic variables include the 2000 GDP growth rate (G), the interest rate (interest) and gross domestic product per capita, in € (GDPPC). Financial sector variables include bank concentration (CONC), the ratio of the number of foreign banks over total banks (NFB), and the ratio of foreign banks' assets over total bank assets (FBA). GDP growth and GDP per capita data are from EBRD. Treasury bill 3-months interest rate data are from IFS and EBRD. Bank concentration and foreign bank presence are from own sample. Bank indicators include net interest revenues (NIR), non-interest income (NII), overhead costs (OHC), loan loss provisions (LLR), profit before tax (PROF), net loans (LOANS) and foreign ownership (FOR). Statistics on equity, non-earning assets and customer and ST funding are available on request. Source: BankScope, November 2002. Data are 2001 median values, all scaled to bank assets.

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