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AN EMPIRICAL EXAMINATION OF FIRMS' FINANCING CONDITIONS IN TRANSITION COUNTRIES

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ABSTRACT

The paper uses survey data to analyse the financing conditions of firms in transition countries. The results show that small firms have considerably more problems with access to and cost of finance than larger firms. Small firms also display markedly different financing patterns than large firms, relying to a much greater extent on internal financing sources and less on bank credit or other sources of formal finance than large firms. To examine the determinants of access to and cost of finance the survey data are combined with macro and financial variables in an ordered logit model. The results indicate that a heavy reliance on foreign and state-owned banks has adverse effects on the average firm's financing condition.

Keywords: *Access to and Cost of Finance, SME Finance, Transition Countries*

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INTRODUCTION

Since the early 1990s, the financial markets of transition countries (TCs)[1] underwent dramatic changes. The existing "monobank" or one-tier banking systems were replaced by two-tier systems which comprise a central bank and commercial banks. Banking sectors were completely restructured and largely privatised and capital markets were established. Albeit the financial sectors of the TCs considered in this article are obviously all

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[1] With TCs this paper refers to the 28 countries of central eastern Europe and the Baltic states (CEB: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia), south-eastern Europe (SEE: Albania, Bosnia and Herzegovina (B&H), Bulgaria, Croatia, FYR Macedonia, Montenegro, Romania, Serbia) and the Commonwealth of Independent States (CIS: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan).

different, there are three features that are characteristic for almost all of them, despite partly different approaches to market reform. First, even more than 15 years after the start of reform, financial sectors in most TCs show a relatively low level of financial deepening when compared with countries at a similar stage of economic development. Second, financial sectors are still largely dominated by banking activities. And third, banking sectors in most TCs show a very high degree of foreign bank ownership and a high degree of concentration.[2]

As the second decade of the transition process is coming to a close, it is worth taking stock and asking what has been achieved in TCs' financial markets and what are the problems that remain. Several aspects are of interest. Did financial market reform lead to a general improvement of financing conditions? Are there any differences in financing conditions and patterns between firms of different size? What effects, if any, does the involvement of foreign banks have on the financing of businesses? What are the main factors that influence access to and cost of finance? These are all questions that will be addressed in this paper. Given that a well-known problem in finance is the tendency of banks to serve larger clients because of information asymmetry that may lead to adverse selection and thus credit rationing for smaller businesses (Stiglitz & Weiss, 1981), a particular focus in this article is put on the access to and cost of finance of small and medium enterprises (SMEs).

The article is structured as follows. Section two presents the results of business surveys that were conducted by the European Bank for Reconstruction and Development (EBRD) and the World Bank in 2002 and 2005 in 26 TCs and in 2004 in six industrialized countries with respect to the financing conditions of firms in these countries. Section three then applies an ordered logit model to investigate the determinants of access to and cost of finance for firms in TCs. Section four concludes.

ACCESS TO AND COST OF FINANCE IN TRANSITION COUNTRIES

To investigate the financing conditions of firms in TCs, this section analyses data from a Business Environment and Enterprise Performance Survey (BEEPS), which was implemented jointly by the EBRD and the World Bank. The BEEPS aims to investigate the extent to which government policies and practices facilitate or impede business activity and investment in central and (south)eastern Europe and the CIS. It also includes unique information on the access to finance and the financing conditions for firms in the region. The BEEPS was first conducted in 1999 and then again in modified form in

[2] On the characteristics of TCs' financial sectors see Volz (2009).

2002 and 2005. The 2002 BEEPS covers 6,153 firms in 26 TCs, while the 2005 survey covers 9,097 firms for the same countries[3]. In 2004, BEEPS was conducted in six industrialised countries (Germany, Portugal, Greece, South Korea, Spain, Ireland), collecting information on 3,953 firms[4].

In the following, the results of the BEEPS 2002 and 2005 are examined to see whether the surveys indicates differences in the financing conditions of SMEs and large firms, and over the years. The 2004 BEEPS results for industrialised countries help to set the results for the TCs into perspective. It is important to note that for the BEEPS firms were asked to appraise the conditions of their business environment and that some of these evaluations – like the perception of access to finance – are subjective by nature. Hence the judgments of firms of different size, location and nationality cannot be compared at face value. Nevertheless, the BEEPS gives a best possible picture of the sentiment in the TCs and also contains "hard" data such as information on firm's sources of finance.

Among others, firms were asked in the BEEPS how problematic different factors are for the operation and growth of their businesses. Table 1 displays the results for the firms' responses on how big a problem they perceive access to financing (e.g. collateral required) and the cost of financing (e.g. interest rates and charges). Firms were asked to answer on a score from 1 (no obstacle) to 4 (major obstacle).

The upper part of Table 1 gives the average score for all firms that were questioned in the TCs with respect to access to financing. We can see that access to finance has improved slightly for the average firm from a value of 2.33 in 2002 to 2.26 in 2005. Analysing the results by the size of firms shows that small firms (with 2-49 employees) on average find it harder to obtain financing than medium-sized firms (50-249 employees), which in turn seem to have bigger problems in accessing finance than large firms (250-9,999 employees)[5].

The same seems to be true for the cost of financing as shown in the lower part of Table 1: on average, smaller firms perceive the cost of financing as a greater obstacle for the operation and growth of their

[3] The 26 countries covered in the BEEPS 2002 and 2005 surveys are the same TCs listed in footnote one with the exception of Turkmenistan. In the surveys, Serbia and Montenegro were still treated as one unit; hence we have 26 countries instead of 28. The BEEPS 2002 and 2005 were also conducted in Turkey, which is excluded in the following analysis. The 1999 BEEPS featured different questions than the subsequent surveys; hence the results are not fully comparable and we limit the analysis here to the BEEPS conducted afterwards. For an examination of the 2002 BEEPS see Volz (2004).

[4] The 2004 BEEPS covers also Vietnam, which was excluded here.

[5] Firms with less than two or more than 10,000 employees were excluded from the BEEPS.

businesses than do medium-sized and large firms. As we can see from Table 2, the differences in firm size with respect to the conditions for access to and cost of financing are not specific to TCs. Apparently, the same pattern holds in industrialised countries, even though firms there on average seem to have less problems with finance than those in TCs (which is exactly what one would expect).

Table 1: Financing Conditions in Transition Countries, 2002 and 2005

	Access to Finance					
	2002			2005		
	No. of Observations	Mean	SD	No. of Observations	Mean	SD
All firms	5,810	2.33	1.16	8,647	2.26	1.14
Small firm	3,902	2.38	1.17	6,065	2.31	1.14
Medium firm	1,074	2.23	1.13	1,728	2.20	1.11
Large firm	807	2.18	1.15	853	2.01	1.10
	Cost of Finance					
	2002			2005		
	No. of Observations	Mean	SD	No. of Observations	Mean	SD
All firms	5,864	2.53	1.13	8,698	2.51	1.13
Small firm	3,931	2.55	1.14	6,097	2.56	1.14
Medium firm	1,088	2.52	1.10	1,746	2.47	1.11
Large firm	819	2.42	1.10	854	2.28	1.12

Source: Author's calculations with BEEPS 2002 and 2005 datasets.

Note: The average score is based on a scale of 1 (no obstacle) to 4 (major obstacle). The exact question was: "Can you tell me how problematic are these different factors for the operation and growth of your business: Access to financing (e.g., collateral required or financing not available from banks) / Cost of financing (e.g., interest rates and charges)".

From the average results in Tables 1 and 2 one could conclude that while differences in financing conditions between firms of different size and between firms in TCs and industrialised countries exist, they might not be so grave as to give cause for concern. But the picture becomes more complete when the sources of finance are reviewed. Tables 3 and 4 show the sources of finance for working capital and new investment for all firms questioned in the TCs for 2002 and 2005, and also by size of firm. Tables 5 and 6 show the results for firms in industrialised countries.

Table 2: Financing Conditions in Industrialised Countries, 2004

	Access to Finance		
	No. of Observations	**Mean**	**SD**
All firms	3,873	2.02	1.09
Small firms	3,002	2.05	1.10
Medium firms	496	2.02	1.07
Large firms	375	1.81	0.98
	Cost of Finance		
	No. of Observations	**Mean**	**SD**
All firms	3,884	2.14	1.11
Small firms	3,012	2.17	1.13
Medium firms	497	2.08	1.05
Large firms	375	2.02	1.04

Source: Author's calculations with BEEPS 2004 dataset.

Note: The BEEPS 2004 included the identical questions as BEEPS 2005. BEEPS 2004 was conducted in Germany, Greece, Ireland, Portugal, South Korea and Spain (and Vietnam, which was excluded here).

Interesting to note is that the proportion of external finance as part of the total financing is rather small in TCs, and that borrowing from banks in general is very low. On average, about 70 per cent of both working capital and new investment of firms in TCs is generated from internal sources (Tables 3 and 4), considerably higher than the shares in industrialised countries (65 per cent for working capital and 57 per cent for new investment in 2004; cf. Tables 5 and 6). Accounting for firm size, again, we find pronounced differences in financing between small, medium and large firms: in TCs, small firms rely to a much greater extent on internal funds (about 75 per cent for working capital and 73 percent for new investment in 2005) than medium-sized firms (71 and 68 per cent) and large firms (65 per cent for both working capital and new investment in 2005). The fact that firms have a different financing structure does not necessarily imply that this is constraining their activities or costly to them. However, empirical evidence provided by de Haas and Peeters (2006) suggests that the high reliance of firms in TCs on internal finance is sub-optimal. This clearly points to constraints of firms, especially smaller ones, in TCs in accessing external financing. [6]

[6] From a survey of new firms in TCs Johnson, McMillan and Woodruff (2002) find that little demand for external finance is also due to weak property rights which discourage firms from investing, even when bank loans are available.

Table 3: Sources of Finance for Working Capital in Transition Countries, 2002 and 2005

	2002								2005							
	All firms		Small firms		Medium firms		Large firms		All firms		Small firms		Medium firms		Large firms	
	5,991 obs		4,050 obs		1,101 obs		811 obs		8,887 obs		6,269 obs		1,762 obs		856 obs	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Internal funds/retained earnings	69.28	38.09	71.65	37.46	65.72	38.45	62.91	39.33	73.55	36.49	75.49	35.94	70.59	36.73	65.45	38.39
Equity (i.e. issue new shares)	2.93	14.58	2.85	14.56	3.11	14.76	3.22	14.66	3.46	15.66	3.75	16.54	2.97	14.16	2.39	11.36
Borrowing from local private commercial banks	4.52	15.06	3.32	13.18	6.89	18.41	7.25	17.92	7.09	19.14	5.94	17.86	9.09	21.12	11.44	22.62
Borrowing from state-owned banks, including state development banks	2.67	12.03	2.07	10.80	2.98	12.43	5.20	16.31	1.57	9.01	1.28	8.30	2.36	10.77	2.11	9.87
Borrowing from foreign banks	0.90	7.14	0.61	5.68	1.22	8.39	1.86	10.62	1.05	7.77	0.74	6.51	1.37	8.48	2.71	12.84
Loans from family/friends	4.59	15.95	6.00	18.12	1.85	9.25	0.97	8.01	2.99	12.89	3.82	14.61	1.26	7.48	0.50	5.50
Money lenders or other informal sources (other than family/friends)	1.29	7.86	1.52	8.81	0.95	6.11	0.59	4.04	0.78	6.06	0.81	6.17	0.89	6.55	0.37	3.77
Trade credit from suppliers	5.31	15.50	4.61	14.55	6.76	17.42	6.84	17.08	3.92	13.83	3.57	13.58	4.42	14.06	5.45	14.99
Trade credit from customers	2.32	11.07	2.20	11.11	2.74	11.72	2.26	9.43	1.45	8.51	1.24	8.06	1.89	9.42	2.09	9.62
Credit cards	0.33	3.84	0.39	4.38	0.17	2.16	0.20	2.38	0.31	3.69	0.34	4.05	0.23	2.62	0.25	2.68
Leasing arrangement	1.28	7.73	1.19	7.64	1.50	8.27	1.47	7.51	1.21	7.13	1.13	7.16	1.55	7.58	1.17	5.83
The government (other than state-owned banks)	1.83	11.85	1.11	9.33	3.05	15.21	3.77	16.79	1.21	9.64	0.64	7.17	2.11	12.62	3.51	15.86
Other	2.76	14.96	2.47	14.38	3.06	15.59	3.43	15.96	1.38	10.63	1.25	10.29	1.27	10.09	2.55	13.69
Sum	100.00		100.00		100.00		100.00		100.00		100.00		100.00		100.00	

Source: Author's calculations with BEEPS 2002 and 2005 datasets.

Table 4: Sources of Finance for New Investments in Transition Countries, 2002 and 2005

	2002								2005							
	All firms		Small firms		Medium firms		Large firms		All firms		Small firms		Medium firms		Large firms	
	4,150 obs		2,726 obs		797 obs		606 obs		6,506 obs		4,409 obs		1,398 obs		699 obs	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Internal funds/retained earnings	69.73	39.72	71.76	39.03	66.99	40.24	65.09	41.01	70.90	39.44	72.70	38.93	68.38	39.52	64.58	41.54
Equity (i.e. issue new shares)	2.66	14.59	2.80	15.15	2.71	14.17	2.06	12.72	3.26	16.02	3.47	16.80	2.81	14.26	2.82	14.17
Borrowing from local private commercial banks	5.46	18.29	4.16	16.07	8.20	22.23	7.85	21.36	9.69	24.63	8.84	24.00	11.23	25.42	12.02	26.66
Borrowing from state-owned banks, including state development banks	3.20	14.83	2.92	14.45	2.79	13.08	4.88	17.94	1.90	11.29	1.62	10.61	2.39	12.24	2.66	13.26
Borrowing from foreign banks	1.51	10.20	0.89	8.16	2.22	11.83	3.35	14.88	1.65	10.98	1.21	9.52	2.08	12.11	3.54	15.89
Loans from family/friends	4.30	16.64	5.73	19.12	1.68	9.34	1.02	8.49	2.79	13.16	3.71	15.11	1.19	8.61	0.20	2.61
Money lenders or other informal sources (other than family/friends)	1.10	7.68	1.37	8.67	0.68	5.37	0.50	5.18	0.74	6.32	0.83	6.72	0.68	5.92	0.34	4.06
Trade credit from suppliers	1.95	10.12	1.81	9.74	2.57	11.88	1.83	9.38	1.38	8.58	1.31	8.57	1.41	8.60	1.76	8.57
Trade credit from customers	1.12	7.92	0.94	7.28	1.47	8.75	1.55	9.47	0.66	5.74	0.56	5.53	0.86	6.01	0.84	6.46
Credit cards	0.29	4.24	0.40	5.12	0.08	1.36	0.07	1.62	0.19	3.34	0.21	3.64	0.16	2.54	0.14	2.78
Leasing arrangement	3.96	15.93	3.96	16.26	3.77	14.87	3.93	14.88	3.76	15.67	3.31	14.93	4.79	17.49	4.57	16.29
The government (other than state-owned banks)	1.90	12.63	1.08	9.64	3.14	15.87	4.00	18.31	1.30	10.09	0.66	7.18	2.13	12.52	3.63	17.28
Other	2.81	15.47	2.19	13.67	3.70	17.79	3.86	17.78	1.78	12.45	1.57	11.97	1.89	12.33	2.90	15.31
Sum	100.00		100.00		100.00		100.00		100.00		100.00		100.00		100.00	

Source: Author's calculations with BEEPS 2002 and 2005 datasets.

Table 5: Sources of Finance for Working Capital in Industrialised Countries, 2004

	All firms		Small firms		Medium firms		Large firms	
	3,875 obs		3,016 obs		488 obs		371 obs	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Internal funds/Retained earnings	64.66	37.36	66.88	37.02	58.99	37.13	54.07	37.95
Equity (i.e. issue new shares)	6.56	16.58	6.45	16.49	6.47	15.72	7.57	18.35
Borrowing from local private commercial banks	12.10	23.37	11.12	22.77	13.67	24.26	18.04	25.94
Borrowing from foreign banks	0.68	5.06	0.40	4.49	1.43	6.33	1.99	6.90
Borrowing from state-owned banks, including state development banks	2.28	11.02	2.05	10.98	2.53	10.04	3.84	12.41
Loans from family/friends	1.20	7.73	1.46	8.51	0.08	0.90	0.51	5.51
Money lenders or other informal sources (other than family/friends)	0.25	3.75	0.25	3.68	0.49	5.31	0.00	0.00
Trade credit from suppliers	7.43	18.39	6.83	18.26	10.43	19.45	8.44	17.61
Trade credit from customers	1.68	9.72	1.46	9.66	2.71	10.19	2.11	9.47
Credit cards	0.63	3.91	0.73	4.22	0.37	2.94	0.18	1.81
Leasing arrangement	1.74	7.43	1.82	7.86	1.48	5.46	1.40	5.95
The government (other than state-owned banks)	0.34	4.51	0.21	3.37	0.43	4.74	1.24	9.46
Other	0.45	5.43	0.36	4.87	0.91	7.74	0.62	6.06
Sum	100.00		100.00		100.00		99.38	

Source: Author's calculations with BEEPS 2004 dataset.

Table 6: Sources of Finance for New Investments in Industrialised Countries, 2004

	All firms		Small firms		Medium firms		Large firms	
	1,890 obs		1,450 obs		212 obs		228 obs	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Internal funds/Retained earnings	57.28	39.97	60.10	40.26	50.32	37.44	45.88	37.70
Equity (i.e. issue new shares)	7.72	19.30	7.52	19.49	8.14	18.71	8.64	18.63
Borrowing from local private commercial banks	15.45	27.72	14.48	27.92	17.77	27.26	19.50	26.50
Borrowing from foreign banks	1.17	7.84	0.66	7.07	2.57	9.47	3.14	10.08
Borrowing from state-owned banks, including state development banks	3.23	14.27	2.01	11.46	5.64	19.16	8.73	21.70
Loans from family/friends	0.98	6.83	1.23	7.75	0.09	1.37	0.20	1.27
Money lenders or other informal sources (other than family/friends)	0.03	1.03	0.04	1.17	0.00	0.00	0.00	0.00
Trade credit from suppliers	3.20	12.26	3.39	13.01	3.42	11.08	1.78	7.45
Trade credit from customers	0.35	4.48	0.35	4.82	0.57	4.21	0.15	1.36
Credit cards	0.63	3.80	0.71	4.04	0.52	3.40	0.26	2.28
Leasing arrangement	8.82	20.31	8.51	19.97	10.12	22.14	9.60	20.68
The government (other than state-owned banks)	0.47	5.48	0.32	5.01	0.40	2.75	1.47	9.01
Other	0.65	7.33	0.68	7.76	0.45	3.82	0.66	7.02
Sum	100.00		100.00		100.00		99.34	

Source: Author's calculations with BEEPS 2004 dataset.

Particularly interesting is the share of bank financing. In 2005, 9.7 per cent of working capital of firms in TCs was financed on average by local private commercial banks, state-owned banks and foreign banks, and 13.2 per cent of long-term financing came from these banks. This reflects the still relatively low level of financial deepening in most TCs, which is also apparent in their low bank lending to GDP ratios. The low levels of bank finance in TCs contrast with the role of bank lending in industrialised countries, where on average 15.1 per cent of firm's working capital and 19.9 per cent of new investment is financed by banks. That is, the shares of bank finance are about fifty per cent higher in industrialised countries.

With respect to firm size, we also see significant differences in bank financing. In 2005, large firms' borrowing from banks for working capital as share of total financing was about double when compared with small firms in TCs. The role of bank financing for new investment in TCs in 2005 was similarly uneven, with 11.7 per cent of small firm investment financed by banks, contrasted with 15.7 per cent for medium-sized firms and 18.2 per cent for large firms. The same patterns holds for industrialised countries, where small firms finance 13.6 (17.2) per cent of working capital (new investment) through banks, compared with 17.6 (26.0) per cent for medium-sized firms and 23.9 (31.4) per cent for large firms. The fact that small firms finance a considerably lower share of their operations and new investments through banks than do medium and large firms therefore seems to be nothing characteristic of TCs' financial systems. Rather, the lower level of bank financing in TCs can be attributed to the still much lower level of financial deepening, even after more than 15 years of economic transition.

A low level of bank financing need not necessarily imply that it is difficult to obtain a bank loan, as it could also be the result of a preference for other means of financing. Yet the shares of equity finance, even though they increased between 2002 and 2005, or leasing arrangements – another common way of firm financing – are also well below the levels of industrialised countries. The fact that about 60 per cent of small firms in the CEB and SEE countries and about 70 per cent of small firms in the CIS countries had no bank loans in 2005 – compared to less than 40 per cent in Germany – is a strong indication that access to bank finance is severely constrained in those countries (Table 7). Table 7 also shows that about half of the firms that had no bank loans claimed that they were unable to obtain one. For the other half – which might be able to obtain a loan – the conditions were seemingly not attractive enough.

Summing up, the statistical analysis of the BEEPS data so far has revealed two distinct patterns. First, small firms on average perceive access to and cost of finance to be more of a problem than do medium firms, which in turn seem to face more problems than large firms. This pattern is the

same for firms in industrialised countries, but on a considerably lower level. The conditions for access to and costs of finance have, however, improved between 2002 and 2005. While the differences in perceived problems in access to and costs of finance with respect to firm size do not seem grave, they become more important when the second finding in the BEEPS data is taken into account: a significant difference in sources of finance, with smaller firms financing a considerably higher proportion of working capital and new investment through internal sources and a much lower share through banks.

Table 7: Financially Constrained Firms, in Per Cent

	Small Firms		Medium Firms		Large Firms	
	Without Bank Loans	Unable to Obtain Bank Loans	Without Bank Loans	Unable to Obtain bank loans	Without Bank Loans	Unable to Obtain Bank Loans
CEB 2005	60.8	27.3	41.9	13.1	29.2	7.4
SEE 2005	59.7	29.1	39.8	15.9	32.1	11.0
CIS 2005	67.5	34.9	51.5	24.4	45.8	13.4
Germany 2004	37.2	14.6	24.6	9.8	15.3	4.8

Sources: Calculations with BEEPS 2004 and 2005 datasets.

DETERMINANTS OF FINANCE

We now turn to an empirical examination of the determinants of access to and cost of finance. The statistical analysis of the BEEPS data so far has revealed that firm size seems to have a significant impact on firm's financing conditions. In the following, we combine the BEEPS data on access to and cost of finance of firms in TCs with other economic data to estimate the factors influencing firms' financing conditions.

Methodology, Literature Review and Data

The literature on the determinants of firm financing highlights a multitude of factors, both internal to the firm and external. The way in which firms finance their operations depends in part on the internal resources

available as well as on the firm's (or entrepreneur's) preferences[7]. Information on internal determinants of firm financing, however, is hard to obtain and is not included in the BEEPS data. In the following analysis, we thus focus – with the exception of firm size – exclusively on external factors that have been discussed in the literature as having an impact on financing conditions and for which proxies are available.

To inquire the determinants of access to finance we estimate the following model:

$$AF_{ij} = \alpha_1 FS_{ij} + \alpha_2 FD_j + \alpha_3 MACRO_j + \alpha_4 CON_j + \alpha_5 FBI_j + \alpha_6 CBC_j + \alpha_7 BRIE_j + \alpha_8 SOB_j + \varepsilon_{ij} \quad (1)$$

where;
AF_{ij} : Access to finance of firm *i* in country *j*;
FS_{ij}: Firm size of firm *i* in country *j*;
FD_j: Financial deepening in country *j*;
$MACRO_j$: Macroeconomic environment in country *j*;
CON_j: Concentration in country *j*'s banking sector;
FBI_j: Foreign bank involvement in country *j*;
CBC_j: Cross border credit extended to country *j*;
$BRIE_j$: Banking reform/institutional environment in country *j*; and
SOB_j: Role of state-owned banks in country *j*.

Because the dependent variable AF_{ij} is ordinal (i.e., 1 = no obstacle; 2 = obstacle; 3 = serious obstacle; 4 = major obstacle) we apply a qualitative response regression model, namely an ordered logit model[8]. It is important to note for the interpretation of this type of model that the parameter estimates cannot be directly interpreted as elasticities, but rather give an indication of the direction of the effects.

We also run the regression in the same specification as above, but use "cost of finance" as dependent variable, so that

$$CF_{ij} = \beta_1 FS_{ij} + \beta_2 FD_j + \beta_3 MACRO_j + \beta_4 CON_j + \beta_5 FBI_j + \beta_6 CBC_j + \beta_7 BRIE_j + \beta_8 SOB_j + \varepsilon_{ij} \quad (2)$$

where CF stands for cost of finance, with everything else being same as before. Unless mentioned otherwise, we use data for 2005 (including

[7] See, for example, Opler *et al.* (1999). For a discussion of target capital structures in TCs see chapter four of de Haas (2005).
[8] See, for instance, Liao (1994).

BEEPS). The reasons for selecting the variables contained in (1) and (2) and the data used are described in the following.

Firm size. Because small firms tend to face greater informational barriers and higher fixed cost associated with accessing financial services, they are likely to experience greater credit constraints than large firms[9]. Also, small (and young) firms often lack collateral and a credit history and are hence more risky for lenders. Creditors are thus inclined to prefer lending to larger customers. Stiglitz and Weiss (1981) have shown that with asymmetric information banks have a motive to ration credit demand, and because of their higher riskiness smaller firms are likely to be more affected by credit rationing than larger firms. The role of firm size will be discussed in more detail below in the context of the large-bank barriers and the foreign-owned-bank barriers hypotheses.

As information on firm size is incorporated in the BEEPS data, we can easily include a firm size variable in our regression. From the analysis in the preceding section we already know that small firms have less favourable financing conditions than large firms, so we should obtain a negative coefficient estimate in regressions (1) and (2), as an increase in the firm size variable on the right hand side (2 stands for small firms, 3 for medium firms and 4 for large firms) should lead to improved financing conditions (i.e., lower values for AF and CF).

Financial deepening. The more advanced the financial sector of its home country, the easier it should be for an individual firm to access finance. Deeper financial markets imply that more funds are obtainable through the financial sector, and hence firm (and household) financing should be more readily available. One widely used indicator of the size of financial intermediation is the private credit provided by deposit money banks and other institutions, divided by GDP. Because financial markets in most TCs are heavily dominated by the banking sector, domestic credit relative to GDP makes a useful proxy for financial deepening[10]. The data is taken from the EBRD Country Database.

Macroeconomic environment. Macroeconomic uncertainty makes business planning more difficult, affecting firms' investment decisions and financing behaviour (e.g., Federer, 1993; Servén, 1998; Baum et al., 2006). A volatile macroeconomic environment increases financing risk and therefore

[9] See, for example, Beck and Demirgüç-Kunt (2006) and Beck *et al.* (2005, 2008).

[10] We also tried per capita income as a proxy for financial deepening, which yielded very similar results to those presented in tables 8 and 9.

financial intermediaries will demand a higher risk premium or collateral from firms they extend loans to, making financing conditions dearer. Macroeconomic volatility should thus have a negative effect on access to and cost of finance. As proxy for macroeconomic stability we take the CPI average for the period 2000-2005, using data from the IMF's International Financial Statistics. Higher values for the MACRO variable hence imply a higher inflation environment, and therefore the coefficient estimates for MACRO should be positive.

Concentration in the banking sector. Another factor influencing financing conditions might be concentration in the banking sector. The literature has identified two ways by which financial sector concentration could affect business lending. On the one hand, a high concentration in banking could have adverse effects especially for small firms through its effect on relationship lending, so that the restructuring of the TCs' financial sectors might mostly benefit larger companies while SMEs will be left on their own[11]. As pointed out by Chick (2000), competition is likely to entail concentration in the banking sector. If banking becomes more concentrated – a process that can already be observed in the TCs – large companies will be favoured recipients of loans and other financial services whereas small and medium companies, especially in peripheral regions, might find it more difficult to get finance[12]. The so-called large-bank barriers hypothesis postulates that large banks tend to have difficulty extending relationship loans to informationally opaque small businesses (Berger et al., 2001). Large banks, which typically provide transaction lending and other wholesale capital market services to large corporate customers, tend to have organisational structures that are designed for efficient transaction-based

[11] Under relationship lending, according to Berger *et al*. (2001, pp. 2129-30), "information is gathered by the lender beyond the relatively transparent data available in the financial statements and other sources readily available at the time of origination. The information is gathered through contact over time with the firm, its owner, and its local community on a variety of dimensions. The lender may gather data from the provision of past loans and other services to the business. Information may also be garnered from contact with the borrower's customers and suppliers, and from the lender's knowledge of the borrower's interaction with the local community. This information is used in making additional decisions over time regarding renewals, additional loans, renegotiations, and monitoring strategies, and is not shared with other potential lenders. The production of relationship information is costly, and the costs are likely to be passed on to the relationship borrowers." The counterpart to relationship lending is pure transactions lending, under which due diligence and contract terms are based on information that is relatively easily on hand. Each transaction stands on its own, and information from the relationship between the lender and the borrower, if any, is irrelevant.

[12] Petersen and Rajan (1994) show that a close lending relationship with an institutional creditor increases the availability of finance for small firms.

lending. This lending is based on "hard" information such as quantitative financial ratios, collateral and credit scores. They often offer standardised credit policies based on easily observable, verifiable, and transmittable data. In contrast, relationship information often involves "soft" data, e.g. information about the character and reliability of the firm's owner, and may be more difficult to quantify, verify and communicate through the layers of management and ownership of large banking organisations (Berger & Udell, 2002). Furthermore, large banks may find it more difficult to engage in relationship lending than locally-owned institutions, as relationship lending may require local knowledge which large banks that are headquartered away will find more difficult to build up (Berger et al., 2001)[13]. The large-bank barriers hypothesis thus predicts that higher concentration in banking would lead to a worsening of financing conditions of small firms, which in the BEEPS sample (as in the real world) make the majority of firms.

On the other hand, a high concentration in banking might create a quasi-monopolistic situation, which could help banks to establish a mutually beneficial relationship with firms. Petersen and Rajan (1995, p. 408) argue that because a "monopolistic creditor […] shares in the future surplus generated by the firm through the future rents she is able to extract", "she may be more willing to offer credit than a similarly placed lender in a competitive market." Credit market competition thus may impose constraints on the ability of the firm and creditor to intertemporally share surplus, making lending relationships less valuable to a firm because it cannot expect to get help when most in need[14]. Petersen and Rajan are able to show that significantly more young (and small) firms in the US obtain external financing in regions of the US with concentrated markets than in regions with competitive markets. Hence, the monopolistic-creditor hypothesis would

[13] A large body of empirical work seems to support the *large-bank barriers hypothesis*. For example, Berger *et al.* (1995) find that large banks in the US tend to devote a lower proportion of their assets to small business lending than smaller institutions. Haynes *et al.* (1999) find that large banks lend to larger, older and more financially secure businesses relatively more often than do small banks. That is, they seem to focus on firms that are most likely to receive transactions loans. Another study by Goldberg *et al.* (2002) finds that large banks have a tendency to base their small business loan approval decisions more on financial ratios, while the existence of a previous relationship with the borrowing firm mattered more to small banks. A recent Bank Environment and Performance Survey (BEPS) conducted by the EBRD in 2005 with a random sample of 220 banks in 20 TCs also revealed that small banks devote a much higher share of their lending to SMEs than large banks (de Haas *et al.*, 2007). For further references see Berger *et al.* (2001, pp. 2131-3).

[14] Petersen and Rajan (1995) note that this argument dates back to Schumpeter, who suggested that a monopolistic economy offers better incentives for innovation because an innovator can recoup her investment in research and development through future rents.

predict a positive effect of increased concentration in the banking sector on financing conditions.

Thus, the literature points to two different effects of banking concentration on relationship lending and thus on the financing conditions of businesses. To analyse the effect of concentration with the BEEPS data, we use the share of assets of the five largest banks in total banking assets, taken from the EBRD country database.

Foreign bank involvement. Similarly, the involvement of foreign banks could have different effects. On the one hand, foreign institutions are likely to bring innovation and spur the efficiency of financial intermediaries and markets of financially less developed countries and thus improve financing conditions. With the entry of foreign financial intermediaries, domestic institutions will find themselves exposed to increased competitive pressure from more sophisticated and cheaper foreign intermediaries. Banks that extend their operations abroad are likely to be among the most efficient in their home country and can be expected to outperform the local banks. This is likely to set new standards in management and efficiency, and enhance the quality and range of financial products offered. Foreign institutions may choose to enter the market via direct penetration or cross-border acquisitions of intermediaries. Domestic institutions will increasingly face pressure to improve their own efficiency by cost-cutting and organisational restructuring to secure profitability. The competitive pressure should thus erode the local banks' rents and lead to a more efficient financial market with better credit conditions for domestic firms and households[15].

On the other hand, a dominance of foreign banks could also turn out to be problematic if they cherry-pick their clients. The foreign-owned-bank barriers hypothesis states that foreign-owned banks are less likely to lend to informationally opaque small businesses than domestically-owned banks (cf. Berger et al., 2001). The argument is similar to the large-bank barriers hypothesis: because banks entering a foreign market are likely to be large and headquartered far away from small local businesses, they will find it difficult to extend relationship lending to these borrowers. In addition, cultural and language barriers, as well as non-familiarity with the local markets, may make it more difficult and hence costly to gather and process locally-based relationship information. However, a qualification needs to be made concerning the way foreign banks enter the market. A major reason for market entry through the acquisition of domestic banks is to get hold on the local knowledge of the bank's management and staff and the already

[15] Evidence suggests that the entry of foreign banks has had a positive impact on the efficiency and stability of TCs' banking sectors. See Bonin *et al.* (2005), Fries and Taci (2005), Fries *et al.* (2006) and de Haas and van Lelyveld (2006).

existing business relations of these banks. One would thus expect foreign banks to carefully maintain this local knowledge, making the argument of the foreign-owned-bank barriers hypothesis a less strong one if they enter the market through M&As[16].

To measure the effect of foreign bank involvement of financing conditions, we include data on the assets of foreign-owned banks relative to assets of all banks; the data are again taken from the EBRD country database.

Cross-border bank lending. Cross-border credit provides an additional means of finance; firms might bypass their home country's financial markets and fully finance their operations through foreign financial markets or, more likely, seek complementary finance abroad. The option of obtaining finance abroad, of course, refers not only to cross-border banking activities but also to the possibility of placing bonds in foreign markets or seeking listings in the securities markets of the major financial centres. Given the dominance of bank financing in TCs, however, we will focus on banking activities and thus add cross-border credit to specifications (1) and (2), using data on foreign claims of BIS reporting banks (which the Bank for International Settlement (BIS) publishes in its Consolidated Banking Statistics) and set these relative to GDP (for which we use data from the IMF's WEO database)[17].

Because an increase in cross-border credit flowing into the economy should improve financing conditions for domestic firms, the estimates for the CBC coefficients should be negative. One caveat here is that the BIS

[16] Interestingly, the results of the already mentioned BEPS suggest that newly created foreign banks in TCs actually have a higher share of lending to SMEs than privatised foreign banks. Both newly created (41.1 per cent) and privatised foreign banks (27.0 per cent), however, still direct lower shares of their loan portfolios to SMEs than private domestic banks (47.0 per cent) (de Haas *et al.*, 2007, p. 8). At large, empirical evidence seems to support the *foreign-owned-bank barriers hypothesis*. Clarke *et al.* (2001, p. 20), for example, note that "[i]n general, foreign banks appear to allocate greater shares of their lending portfolios to commercial and industrial loans, providing indirect evidence that foreign banks may be more important in the market for loans to large companies." De Haas and Naaborg (2005) find that albeit foreign banks in the TCs in many cases had a strong initial focus on multinationals and large domestic companies, most have gradually started to lend more also to SMEs.

[17] Foreign claims refer to claims on borrower's resident outside the country in which the bank is headquartered. Foreign claims can be disaggregated into cross-border claims and local claims booked by foreign offices. The latter refer to claims on residents of the country in which the foreign office is located. For example, claims on Czech residents booked by an Austrian bank's Czech-located subsidiary would be reported by Austria as local claims on the Czech Republic. Commercial banks and other deposit-taking institutions in 27 jurisdictions report to the BIS Consolidated Banking Statistics, which are estimated to cover more than 95 per cent of international banking business. For details on the compilation of the BIS Consolidated Banking Statistics see BIS (2003).

Consolidated Banking Statistics also comprises local lending by foreign bank subsidiaries, i.e., parts of the lending included in the FBI measure is included here as well.

Banking reform/institutional environment. There is a vast literature that has studied the relationship between law and finance and how the legal and institutional framework affect the development of an economy's financial system[18]. The consensus view that has emerged is that a deficient legal system and a weak institutional environment cause financial sector distortions and thus impede financing conditions. Conversely, a better legal and institutional environment should lead to better financing conditions. As a proxy for the institutional environment in TCs, we can handily use the EBRD transition indicators for the progress made in banking reform and interest rate liberalisation. The measurement scales for the indicators range from 1 to 4+, where 1 represents little or no change from a rigid centrally planned economy and a 4+ represents the standards of an industrialised market economy (with 0.3 decimal points added or subtracted for + and – ratings)[19].

Role of state-owned banks. Lastly, we include a variable describing the importance of state-owned banks in TCs. The impact of state-owned banks on financing conditions is not obvious. From one perspective, state-owned banks might lead to misallocation of resources by engaging in directed lending. In the worst case, state-owned banks could be misused for political lending or even nepotism. Moreover, because state-owned banks in most cases are not exposed to full market competition, they might have a tendency for being sluggish, distorting the efficient allocation of capital. La Porta et al. (2002) provide empirical support for this view.

On the other hand, state-owned banks are less subject to pressure from capital markets and might have objectives other than increasing their

[18] The most prominent studies in this field are La Porta *et al.* (1998) and Levine (1998). For a discussion of the nexus between law, finance and economic growth in TCs see chapter two of de Haas (2005).

[19] The classification system for the banking reform and interest rate liberalisation indicator is as follows: 1) Little progress beyond establishment of a two-tier-system. 2) Significant liberalisation of interest rates and credit allocation; limited use of directed credit or interest rate ceilings. 3) Substantial progress in establishing bank solvency and of a framework for prudential supervision and regulation; full interest rate liberalisation with little preferential access to cheap refinancing; significant lending to private enterprises and significant presence of private banks. 4) Significant movement of banking laws and regulation towards BIS standards; well-functioning banking competition and effective prudential supervision; significant term lending to private enterprises; substantial financial deepening. 4+) Standards and performance norms of advanced industrial economies: full convergence of banking laws and regulations with BIS standards; provision of full set of competitive banking services See EBRD (2006, pp. 198-9).

profit, i.e., they might have the political mandate to help the development of particular sectors with long-term importance to a country's economic development or to foster the finance of small firms that otherwise might have problems obtaining a loan. Moreover, Micco and Panizza (2006) show that state-owned banks may play a useful credit-smoothing role over the business cycle because their lending is less responsive to macroeconomic shocks than the lending of private banks. From this angle, the involvement of state-owned banks could have positive effects on the financing conditions of businesses, particularly those of smaller firms[20]. To examine the effect of state-owned banks we add a variable for the asset share of state-owned banks as per cent of total bank assets to our specifications (1) and (2). The data is taken from the EBRD Country Database.

RESULTS

The estimation results are presented in Tables 8 and 9. Because a lower value for AF (CF) means that a firm is experiencing less problems with access to finance (cost of finance), a negative coefficient in Table 8 (9) means an improvement in financing conditions, and vice versa. The results for the determinants of access to finance presented in Table 8 are pretty consistent and robust. Column I shows the baseline scenario, i.e., the results if all variables in equation (1) are included. As expected, firm size has a negative coefficient, which means that the larger the firm the less problems it is likely to have with accessing finance. When omitting other variables as in columns III to IX to check for robustness, the coefficient for firm size remains unchanged and highly significant.

The results for the other variables in table 8 are equally robust, except for foreign bank involvement and cross-border credit (which will be discussed in more detail below). As predicted by theory, more macro volatility has a negative effect (and thus a positive coefficient estimate) on access to finance. Surprisingly, we find positive coefficients also for banking reform for all regressions, which suggests that reforms in the banking sector's institutional environment have actually worsened access to finance – contradictory to what the "law and finance" literature would suggest. There are at least three possible explanations for this result. First, reforms in bank's institutional environment might have caused a period of reshuffling, where banks had to adjust to new legislation and regulation, so that the positive

[20] Nitsch and Diebel (2007) give an interesting account of how state banks in China engage in a particular form of relationship lending, which they term "*guānxi* economics".

effects of banking reforms only come to the fore in the medium run[21]. The second explanation is that new regulations and banking supervision have caused banks to introduce standardised credit procedures based on easily observable, verifiable, and transmittable data to comply with the new rules of the game. According to this explanation, which follows the argumentation of the large-bank barriers hypothesis, relationship lending would lose importance, which would mostly harm small firms, which constitute the majority of businesses. A third explanation is that banking reform has reduced the problem of soft budget constraints, where unprofitable (often state-owned) enterprises receive too much credit from state-owned banks[22].

The results for the effect of financial deepening are again as expected; deeper financial markets improve access to finance. A variable where the effect should be unambiguous (i.e., the coefficient should be negative) is cross-border credit. And yet in two out of eleven regressions we get a positive coefficient, which might be due to specification problems or the way we constructed the variable.

Regarding the effect of state-owned banks, the estimates suggest that a higher asset share of state-owned banks as per cent of total bank assets goes along with less favourable conditions for firms' access to finance. As the TCs with the highest shares of state-owned banks are indeed the ones with the lowest levels of domestic credit to GDP ratio and the weakest institutional environment, a high level of state-bank involvement might also be an indication for misguided financial market reform (or even complete lack of reform).

According to the estimates in table 8, concentration in the banking sector apparently improves firms' access to finance, supporting Petersen and Rajan's (1995) monopolistic-creditor hypothesis. This result is interesting as it stands in contrast to a relative large sample of studies in support of the large-bank barriers hypothesis (cf. footnote 13).

[21] Admittedly, this argument is not overly convincing as the transition process has been going on for quite a while now.

[22] On the soft budget constraint see Maskin (1999).

Table 8: Determinants of Access to Finance (AF)

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
No. of obs	7,136	7,137	7,136	7,136	8,083	7,136	7,136	7,699	7,136	7,136	7,136
FS	-0.2916 ***		-0.2921***	-0.2922 ***	-0.2333 ***	-0.2932 ***	-0.2892 ***	-0.2792 ***	-0.2893 ***	-0.2453 ***	
	(0.0336)		(0.0336	(0.0336)	(0.0312)	(0.0336)	(0.0336)	(0.0321)	(0.0336)	(0.0660)	
FBI	0.1157	0.1372		0.0231	0.4469 ***	0.3650 ***	0.8003 ***	-0.0992	0.2435 *	0.3231	
	(0.1375)	(0.1373)		(0.1122)	(0.1221)	(0.1325)	(0.1061)	(0.1267)	(0.1359)	(0.2898)	
CBC	-0.0031	-0.0035	-0.0018		-0.0050 **	0.0053 **	-0.0171 ***	-0.0005	-0.0150 ***	-0.0031	0.0037
	(0.0027)	(0.0027)	(0.0022		(0.0025)	(0.0024)	(0.0021)	(0.0023)	(0.0024)	(0.0027)	(0.0024)
MACRO	0.0137 ***	0.0129 ***	0.0141***	0.0138 ***		0.0076 ***	0.0099 ***	0.0214 ***	0.0105 ***	0.0138 ***	0.0150 ***
	(0.0026	(0.0026)	(0.0026	(0.0026)		(0.0025)	(0.0026)	(0.0024)	(0.0026)	(0.0026)	(0.0026)
BRIE	0.6896 ***	0.6963 ***	0.7089***	0.6413 ***	0.4559 ***		0.5173 ***	0.7373 ***	1.0253 ***	0.6889 ***	0.7943 ***
	(0.0951)	(0.0950)	(0.0922	(0.0855)	(0.0802)		(0.0935)	(0.0843)	(0.0879)	(0.0951)	(0.0929)
FD	-0.0241 ***	-0.0238 ***	-0.0257***	-0.0264 ***	-0.0194 ***	-0.0185 ***		-0.0296 ***	-0.0179 ***	-0.0241 ***	-0.0327 ***
	(0.0031)	(0.0031)	(0.0024	(0.0023)	(0.0028)	(0.0030)		(0.0030)	(0.0030)	(0.0031)	(0.0027)
SOB	0.0113 ***	0.0115 ***	0.0108***	0.0106 ***	0.0132 ***	0.0084 ***	0.0148 ***		0.0139 ***	0.0113 ***	0.0087 ***
	(0.0017)	(0.0017)	(0.0016	(0.0015)	(0.0014)	(0.0016)	(0.0016)		(0.0016)	(0.0017)	(0.0016)
CON	-0.0185 ***	-0.0184 ***	-0.0187***	-0.0196 ***	-0.0173 ***	-0.0240 ***	-0.0152 ***	-0.0154 ***		-0.0185 ***	-0.0194 ***
	(0.0020)	(0.0020)	(0.0020	(0.0017)	(0.0019)	(0.0018)	(0.0019)	(0.0017)		(0.0020)	(0.0020)
FS*FBI										-0.0877	-0.2053 ***
										(0.1078)	(0.0400)

Source: Author's calculations.

Note: Standard errors are in parentheses. *** denotes statistical significance at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Table 9: Determinants of Cost of Finance (CF)

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
No. of obs.	7,207	7,208	7,207	7,207	8,150	7,207	7,207	7,754	7,207	7,207	7,207
FS	-0.2596 ***		-0.2596 ***	-0.2596 ***	-0.2035 ***	-0.2609 ***	-0.2608 ***	-0.2388 ***	-0.2621 ***	-0.1319 **	
	(0.0327)		(0.0327)	(0.0327)	(0.0305)	(0.0327)	(0.0327)	(0.0313)	(0.0327)	(0.0651)	
FBI	0.2108	0.2134		-0.0447	0.6091 ***	0.4334 ***	0.6409 ***	0.1179	0.3486 ***	0.7758 ***	
	(0.1343)	(0.1342		(0.1099)	(0.1202)	(0.1290)	(0.1039)	(0.1250)	(0.1335)	(0.2832)	
CBC	-0.0085 ***	-0.0086 ***	-0.0062 ***		-0.0109 ***	-0.0017	-0.0171 ***	-0.0084 ***	-0.0227 ***	-0.0085 ***	-0.0013
	(0.0026)	(0.0026	(0.0021)		(0.0024)	(0.0023)	(0.0020)	(0.0022)	(0.0023)	(0.0026)	(0.0023)
MACRO	0.0084 ***	0.0079 ***	0.0090 ***	0.0086 ***		0.0030	0.0059 **	0.0138 ***	0.0047 *	0.0084 ***	0.0099 ***
	(0.0026)	(0.0026	(0.0026)	(0.0026)		(0.0025)	(0.0026)	(0.0024)	(0.0026)	(0.0026)	(0.0026)
BRIE	0.5906 ***	0.5967 ***	0.6286 ***	0.4609 ***	0.4162 ***		0.4708 ***	0.6883 ***	1.0057 ***	0.5882 ***	0.7093 ***
	(0.0937)	(0.0936	(0.0904)	(0.0849)	(0.0793)		(0.0911)	(0.0834)	(0.0864)	(0.0937)	(0.0914)
FD	-0.0152 ***	-0.0154 ***	-0.0183 ***	-0.0218 ***	-0.0116 ***	-0.0102 ***		-0.0187 ***	-0.0082 ***	-0.0152 ***	-0.0246 ***
	(0.0030)	(0.0030	(0.0023)	(0.0023)	(0.0028)	(0.0029)		(0.0029)	(0.0030)	(0.0030)	(0.0027)
SOB	0.0070 ***	0.0072 ***	0.0061 ***	0.0049 ***	0.0089 ***	0.0045 ***	0.0091 ***		0.0102 ***	0.0069 ***	0.0044 ***
	(0.0017)	(0.0017	(0.0016)	(0.0015)	(0.0014)	(0.0016)	(0.0016)		(0.0016)	(0.0017)	(0.0016)
CON	-0.0227 ***	-0.0228 ***	-0.0229 ***	-0.0258 ***	-0.0228 ***	-0.0274 ***	-0.0207 ***	-0.0192 ***		-0.0227 ***	-0.0236 ***
	(0.0020)	(0.0019	(0.0019)	(0.0017)	(0.0018)	(0.0018)	(0.0019)	(0.0017)		(0.0020)	(0.0019)
FS*FBI										-0.2359 **	-0.1829 ***
										(0.1041)	(0.0382)

Source: Author's calculations.

Note: Standard errors are in parentheses. *** denotes statistical significance at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Turning to the effect of foreign bank involvement on access to finance, we get positive coefficients for all regressions but one (in column VIII, where the variable for state-owned banks is omitted; the result is not significant, however). The results of eight out of nine regressions thus suggest that an increased activity of foreign banks impedes firms' access to finance, giving support to the foreign-owned-bank barriers hypothesis. To analyse the effect of an increase in foreign bank activity for firms of different size, we construct a new variable, FBI*FS, which is nothing but the product of the firm size variable with the foreign bank involvement variable. Adding this variable to the baseline scenario yields the result presented in column X. The estimates for the other variables are virtually unchanged, but now we also obtain a negative estimate for FBI*FS. This can be interpreted as follows: the larger the firm and the higher the involvement of foreign banks, the better this firm's access to finance. In other words, regression X suggests that large firms will benefit from foreign bank activity, whereas foreign bank involvement has no positive effect for smaller firms. In column X, the estimate for FBI*FS is not significant, but if we omit FS and FBI, FBI*FS becomes significant at the 1 per cent level (Column XI).

The estimates for the determinants of cost of finance presented in table 9 are virtually the same as those in table 8 and confirm the patterns just described. Small firms face higher charges than large firms; a dominance of foreign and state-owned banks tends to make finance more costly; and foreign bank activity disproportionately favours larger firms.

SUMMARY AND CONCLUSIONS

The analysis of the BEEPS has shown that firms' financing conditions in TCs are still considerably constrained. While progress has been made in establishing market-based financial systems, a large share of firms in TCs still has no bank loans – either because they get excluded from bank finance or because conditions are unfavourable. Particularly smaller firms face restrictions in access to finance, with about 60 per cent of small firms in the CEB and SEE countries and about 70 per cent of small firms in the CIS countries having no bank loan in 2005.

To analyse the determinants of access to and cost of finance we combined the BEEPS data with variables such as foreign bank ownership and concentration in the banking sector and estimated an ordered logit model. The results indicate that a heavy reliance on foreign and state-owned banks have adverse effects on the average firms' financing conditions. Albeit the entry and operations of foreign banks should also have positive effects such as a transfer of knowledge to and an increase in the efficiency of TCs'

financial sectors, foreign bank activity seems to benefit only larger firms, with smaller firms being more or less left out. A further finding is that, according to our estimates, a higher concentration in the banking sector improves financing conditions for firms, as suggested by the monopolistic-creditor hypothesis.

One should be cautious, however, to mechanistically interpret these findings – in the sense that a policy conclusion is drawn that, for example, state-owned banks should be privatised or that the role of foreign banks should be limited. As discussed, the effects of foreign bank entry, for instance, are multiple and foreign banks can also bring important benefits in terms of improved financial technology and efficiency to the respective host economies. Also, the EBRD's 2005 survey on banking activities in TCs suggests that the lending behaviour of banks – especially of domestic private and newly created foreign banks – is changing and that their focus is slowly shifting away from lending to large and foreign enterprises towards SME lending (de Haas et al., 2007). Nevertheless, the fact that a large proportion of firms in TCs – and especially small firms – still has no or only limited access to the formal financial sector is striking and should give cause for concern. Policymakers and financial market regulators in TCs, as well as multilateral financial institutions, ought to provide a framework in which banks, be they domestic or international, have an incentive to extend credit to all types of customers.

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