Gambling Banks and Firm Financing in Transition Economies*

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A transition from centrally-planned towards market-based economies in Central and Eastern European Countries (CEEC) in the early 1990's, resulted in mass privatisation programmes and the transformation of the state-controlled banks, the main (and sometimes the only) financial intermediaries in those countries. Given the unique institutional background, the focus of this paper is upon answering the following two questions: First, whether, and if so how, the emerging financial structures of firms in transition economies differ from the structures in Western financial markets? Second, what are the factors that affect bank loan supply schedules in transition economies, and to what extent do they differ between the selected countries? Results from data sets for firms in the Czech Republic, Hungary, and Poland suggest lower debt ratios than those reported for the G-7 countries. Although some evidence of improvements in bank financial intermediation has been found, the range of factors that affect the supply side of loans in selected countries indicates the importance of further institutional reforms in transition economies (JEL G32, P34).

Keywords: bank lending, enterprise debt, firm financing, transition economies

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I. Introduction

Stock and bond markets in the Central and East European Countries (CEEC) are in an embryonic stage. Bank loans have been the predominant source of external financing in these countries during much of the 1990s and the only other significant source of external investment financing has been tax and social security arrears. In the absence of other financial institutions, the banks are also required to monitor the performance of enterprises, with a view to replacing the soft budget constraint and helping new private enterprises.

The banks' dual role in CEEC may prove to be very difficult since the majority of new firms have no credit history, while the banking sector is inexperienced. In contrast to Western financial markets, new enterprises in CEEC are clustered, having all started in the early 1990s, and in this sense the asymmetry of information between banks and enterprises is stronger in the transition economies than in the West (Cornelli et al. 1996). Consequently, 'adverse selection' by banks, followed by 'credit rationing' for new enterprises is a likely outcome (Stiglitz and Weiss, 1981). In addition, CEEC banks are predominantly controlled by the state and often burdened with non-performing loans. It is well-documented in the literature that incentives for banks to make high-skewed loans (even if these offer negative expected value) grows as the contributed capital of borrowing enterprises declines and as they approach insolvency (Stiglitz, 1994).[1] The presence of a large amount of non-performing loans in undercapitalised state-controlled banks undermines the economic value of the capital of CEEC banks and increases the banks' 'gambling' incentive.[2]

Given this institutional background of CEEC financial markets and their importance for market reforms in these countries, it is important to analyse banks' loan supply schedules, and to compare the results with those of relevant studies in Western financial markets. The comparison

1. This is also the thrust of the literature on the U.S. deposit-insurance reform. See Kane (1995).

2. In effect, the situation where both enterprises and banks are state-controlled seems to create yet another dimension of the moral hazard problem which is often not present in Western countries. In transition economies, with a long history of soft budgeting, both banks and state enterprises may 'gamble' for bailouts. This may sometimes result in a strategic alliance between the banks and enterprises accompanied by 'soft' loans.

among CEEC is particularly important because these countries followed different approaches in the privatisation of enterprises, reforming their banking systems, and encouraging the involvement of banks in corporate governance.

Our analysis is based upon corporate sector data in the Czech Republic, Hungary and Poland during the period 1993 to 1995. It extends the analysis carried out by Rajan and Zingales (1995) and Cornelli et al. (1996) for G-7 and transition economies respectively. The results appear to confirm predictions that there should be relatively low debt levels in transition economies (Mayer 1990; McKinnon 1991). These relatively low debt ratios seem to be persistent during the period 1993 to 1995. Although we found evidence of improvements in bank financial intermediation, the differences in the factors that affect the supply side of loans in selected countries indicate the importance of further institutional reforms in transition economies.

The rest of the paper is organised as follows. In the following section, we outline alternative theoretical views and empirical evidence on banks' lending in transition economies and formulate hypotheses which provide a basis for the empirical analysis. In section three we analyse balance sheets and the extent of leverage in non-financial companies in the Czech Republic, Poland, and Hungary. Banks' loans supply schedules in selected CEECs, between 1993 and 1995 are examined and compared in section four. Concluding remarks and policy implications are given in section five.

II. The Behaviour Of Banks in Transition Economies

A. Theoretical models

According to recent literature, debt plays a complementary monitoring role to equity.[3] Because creditors do not participate in upside gains their monitoring role seems to be particularly warranted when tight financial discipline is needed (Aghion and Bolton, 1992). Given the well-documented soft budgeting problem in ex-communist countries, debt

3. For a summary of the literature on the monitoring/control roles of debt and equity see Shleifer and Vishny (1997).

seems to be a desirable monitoring device in transition economies.[4] On the other hand, transition economies are characterised by a high degree of economic uncertainty, a weak legal framework for debt collection, and poor monitoring competence of creditors. These create an environment in which creditors are likely to demand large premiums to compensate for higher risk, and are hesitant to lend to highly leveraged companies due to asset-stripping opportunities on the part of owners and managers (Baer and Gray, 1995; p.73). Consequently, equity financing is likely to be more common and ratios of debt to total assets are likely to be low (McKinnon, 1991; Mayer, 1990).

The growing literature on transition economies does not give a clear answer to the role of banks in the allocation of financial resources and the monitoring of companies in such economies. The majority of authors point to the weaknesses of banks, such as a large portfolio of non-performing loans, cross-ownership with enterprises, lack of expertise, etc. An extreme view is that banks should cease lending to privatised enterprises in transition economies (McKinnon, 1991). On the other hand, other authors support the active involvement of banks in corporate financing and monitoring on the grounds of lack of alternatives and banks' superiority in information gathering (Corbett and Mayer ,1991; Wijnbergen ,1992).

The impact of debt overhang upon the functioning of banks in transition economies has been investigated by a number of authors, including Dewatripont and Maskin (1990), Perotti (1993), Berglof and Roland (1995), Mitchell (1994), Stiglitz (1994). These studies can be classified into two groups. Studies in the first group (Dewatripont and Maskin,1990, and Perotti,1993) see the non-performing loans as a possible reason for adverse selection by banks. The authors in the second group (Berglof and Roland (1995), Mitchell (1994) and Stiglitz (1994)), regard non-performing loans as a contributing factor to moral hazard problems in transition economies.

For example, Dewatripont and Maskin (1990) find that adverse selection in centralised banking systems occurs more often than in decentralised banking systems, where there will be only a few, very large, banks, which will see previous capital contributions as sunk costs

4. The need for debt monitoring is even more important given the embryonic state of the institutions providing equity financing in these countries.

at the time of the refinancing decision, and therefore may be prepared to refinance bad loans. In decentralised credit markets, there will be more small-to-medium size competing banks. Adverse selection is less likely to happen in this scenario, because entrepreneurs will be financed by more than one creditor. Subsequent creditors will have an informational disadvantage and would, therefore, have to pay rent to the initial creditor. This 'informational' rent would discourage the refinancing of unprofitable projects and would serve as a commitment device to terminate unprofitable projects.

Perotti (1993) explains the lending bias of banks in a transitional economy in which banks have non-performing loans to SOEs. When an old debt is senior to any junior debt, the banks will have an incentive to refinance bad loans ex post, even though SOEs are often less profitable and more risky than new private enterprises. The higher the accumulated old debt, the higher the lending bias will be, for banks are residual claimants in the SOEs, whereas in new private enterprises they are ordinary creditors. The non-performing loans, therefore, undermine the economic value of bank capital and increase the bank's incentive to gamble by preferring SOEs.

Berglof and Roland (1995) and Mitchell (1994) conceptualised the banks 'gambling incentive' as yet another manifestation of soft budgeting in transition economies. Berglof and Roland (1995) show that banks may seek to refinance non-performing loans because of the softness of governments towards over-indebted SOEs. By allowing troubled borrowers to survive, banks hide the real extent of their non-performing loans, and gamble for bailouts financed by taxpayers' money. Mitchell (1994) argues that banks are likely to be passive creditors in economies in transition, and they may choose not to initiate bankruptcy proceedings against insolvent debtors because the consequent defaults might highlight their own poor financial condition. The higher the level of non-performing loans, the higher the level of passivity.

Similarly, Stiglitz (1994; p. 186) suggests that banks may be biased toward SOEs and that may have an incentive to gamble for bailouts, as long as ... "there are some institutions within the society that have the capability of making loans – and that have an incentive to make large gambles or believe that any losses they will incur will be made good by

the government".[5]

On the basis of the arguments discussed above, we identify the following hypotheses regarding the levels of leverage in non-financial companies and of bank lending in transition economies:

Hypothesis 1: Ratios of debt to total assets are likely to be low intransition economies (McKinnon, 1991).

Hypothesis 2: Increase in new bank loans is related to the level of long term debt in previous years (Perotti, 1993).

Hypothesis 3: Banks in transition economies favour state-owned enterprises (Berglof & Roland, 1995).

B. Summary of empirical evidence

Different methods have been used in the literature for the analysis of bank lending practices in transition economies. The first approach focuses on the flow of funds between banks and enterprises by comparing net interest payments with the change in enterprise borrowings, the difference representing the amount of new funds received by enterprises from the banks.[6] If interest payments are higher than net new borrowing this would imply that banks are working well, in that there is no lending bias and the problem of bad debts is being tackled.[7] Conversely, if net new borrowing exceeds interest payments, banks are operating in a passive way, without monitoring enterprises or assessing their borrowing capacity.

Dittus (1993) reported that in Hungary and the Czech Republic, enterprises paid more interest to banks than they received in new loans

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5. This may not necessarily be the same soft budget constraint as that defined by Kornai (1992), who places emphasis upon state 'paternalism'. For more on alternative definitions of soft budgeting see Schaffer (1997).

6. This measure was first used by Dittus (1993; p.15) as an analogy to the "resource transfer" concept of the IBRD; p.15.

7. Enterprise net new borrowing was calculated from a monetary survey by netting changes in liabilities and assets. Net interest payments were estimated by applying average interest rates for enterprise loans and deposits to outstanding stocks. Results were reported as net enterprise borrowing from banks as a percentage of net interest due; Dittus (1993; p.16).

in 1991. In Poland, however, banks continued to behave in an accommodating manner, and provided more in new loans than they collected in interest in 1991. In 1992, enterprise borrowing declined sharply in all countries concerned. Consequently, the ratio of enterprises' borrowing and interest due dropped, suggesting that enterprises in the aggregate did not receive new funds and either accumulated arrears outside the banking system or paid banks more in interest charges than they received in new loans. The drop in the ratio was particularly sharp in 1992 in Hungary, where Bonin and Schaffer (1994) found that money was flowing from low profitability firms to banks, suggesting the absence of a soft budget constraint.

The second approach to the analysis of banks' behaviour is to examine the distribution of bad loans, and, particularly the extent of their concentration in the least profitable companies, for a high concentration would suggest lending bias and passivity on the part of the banks. The situation in Poland was reviewed by Gomulka (1993) who found that bad debt formed a high proportion of total debt, both for banks and for enterprises, and that bad debt was highly concentrated, with the most highly indebted companies accounting for 62% of bank debt, but only 11% of revenues in 1992. Bonin and Schaffer (1994) reported a moderate concentration of bank debt in low profitability firms in Hungary at the end of 1992, with the most highly indebted companies accounting for 11% of revenues and about 41% of bank debt. The worst companies, based on profitability, accounted for 10% of employment and 20% of bank debt. The authors offer two possible explanations for the different concentration of bad debts in Hungary and Poland: "Either the scale of the bad debt problem in Hungary is smaller than in Poland, or indebtedness problems in Hungary are more evenly spread among firms" (Bonin and Schaffer, 1994; p.12).

Finally, and most important from the viewpoint of this study, cross-sectional differences in leverage between enterprises can be examined in order to analyse lending practices. Baer and Gray (1995) report the results of a World Bank Survey on borrowing patterns for approximately 200 Polish firms in 1993 and found that the allocation of new loans was positively correlated with the creditworthiness of the borrower. This, together with complementary data on five out of the nine leading commercial banks, suggests that the credit allocation process was improving in 1993.

Cornelli et al. (1996) test the influence of several factors on the allocation of bank credit in Poland and Hungary in 1992. They run a series of cross-sectional regressions, with leverage as the dependent variable and tangibility, size, profitability and a dummy variable for state ownership, as explanatory variables. If the banks are operating effectively, they should be lending to firms with better collateral and higher profitability. On the other hand, demand for bank loans could be negatively related to the profitability of firms, because high-profit firms might be able to rely on internally generated funds. The main variables, tangibility and profitability are significant, and negatively correlated to debt/assets ratios in Poland and Hungary, while size and state ownership also seem to have a positive effect on levels of leverage. In regressions with changes in the debt/assets ratio, tangibility has a significant and negative coefficient in Poland, but a positive (though not significant) coefficient in Hungary, while the coefficient for profitability remains negative and significant. Finally, the dummy variable for state ownership has a positive and significant coefficient. The authors interpret the results as evidence of credit rationing and lending bias in both Poland and Hungary.

III. Accounting Data and the Analysis of Leverage in the Czech Republic, Poland and Hungary

Our sample contains accounting data for Czech, Hungarian, and Polish non-financial companies for the period 1993-1995. All of the data are provided by the companies and are collected by market research companies in the relevant countries on behalf of a unique company accounts database, *Amadeus*. The *Amadeus* database presents data on the basis of international accounting standards and covers only the largest companies on the basis of the following criteria: turnover greater than 12 million USD, number of employees greater than 150, and total assets greater than 12 million USD.[8] Given the fact that all CEEC inherited very large non-financial companies, it is probable that the sample represents a significant proportion of non-financial companies in

8. For a company to be included in the database at least two of these criteria must be satisfied.

these countries.

The accounting systems in the Czech Republic, Poland and Hungary are in a state of transition from systems designed to facilitate central planning toward those intended to provide relevant information to prospective investors. Recent changes in accounting regulations and practices in these countries seem to comply with the EU directives.[9] Although substantial progress has been made, reform is still required in several areas for which there was no standard practice under the old system. For example, the absence of an accounting standard for long-term liabilities is partly due to a lack of a tradition of accounting for interest. Accounting for stockholders' equity and consolidation accounting are other areas where more detailed principles are needed (Jermekowiz and Rinke, 1996). As a consequence, balance sheet formats in the Czech Republic, Hungary and Poland are rather different from those found in the OECD countries used in the study by Rajan and Zingales (1995). For example, deferred taxation, minority interests and lease transactions are not included in the balance sheets of Czech, Hungarian and Polish enterprises, while equipment leases are recorded separately as off-balance-sheet items (Alexander and Archer, 1998). No clear distinction is made between operating and capital leases for accounting purposes and all lease transactions are accounted for as operating leases (Jermakowicz and Rinke 1996).[10] For the purpose of this study, deferred taxation is classified as a non-current liability, minority interests are included in shareholders funds, and lease transactions are ignored. The amounts involved are minimal and do not have a significant effect on the analysis.

Balance sheets for the sample of non-financial companies in the Czech Republic, Hungary, Poland and leading European countries are presented in table 1, with different classes of assets shown as percentages of the book value of total assets. Companies in the CEEC

9. Descriptive studies of these changes are available in Alexander and Archer (1995), Garrod and McLeay (1996) and a special issue of the European Accounting Review edited by Bailey (1995) on accounting changes in CEECs.

10. In the Czech Republic any initial downpayment is booked as a current asset and written off over the period of the leasing contract and monthly payment instalments are charged to the profit and loss account. In Hungary, accounting for capital leases was introduced in 1997. In Poland, all rental agreements are treated as operating leases (Alexander and Archer, 1998).

TABLE 1. Balance Sheets for Non-Financial Enterprises in Transitional Economies 1993-1995

	Czech Republic (%)	Hungary (%)	Poland (%)	F, I, G, UK (1991) (%)
A. 1995				
Fixed assets	53.3	47.35	53.05	42.9
- Intangible fixed assets	.81	1.18	.79	3.4
- Tangible fixed assets	44.62	42.41	47.87	32.7
- Other fixed assets	7.76	3.76	3.94	6.8
Current assets	46.58	55.87	47.09	57.4
- Stocks	17.34	23.92	19.56	18.6
- Debtors	20.83	22.85	19.73	26.7
- Others	8.34	9.1	12.21	1.8
*Cash & cash equivalent	6.67	6.14	4.92	10.3
Total assets	100	100.27	1000	100.3
Shareholders funds	54.31	55.66	60.51	36.4
Non current liabilities	20.11	6.74	7.55	25.2
- Long term debt	20.08	5.27	2.89	12.5
- Other non-current liabilities	.03	1.48	3.13	12.7
Current liabilities	23.97	41.53	31.62	39.7
- Loans	0.61	11.45	5.00	11.8
- Creditors	21.44	12.54	9.52	14.2
- Other	1.90	17.54	17.10	13.7
Total shareh. funds & liab.	100	100.27	100	101.3
Number of Companies	535	371	413	
B. 1994				
Fixed assets	51.79	50.10	44.92	42.9
- Intangible fixed assets	.80	1.36	.90	3.4
- Tangible fixed assets	44.37	44.69	40.38	32.7
- Other fixed assets	4.63	4.05	2.05	6.8
Current assets	48.95	51.72	55.06	57.4
- Stocks	18.03	21.57	19.67	18.6
- Debtors	21.74	21.10	22.98	26.7
- Others	7.59	9.05	7.24	1.8
*Cash & cash equivalent	6.41	6.50	6.72	10.3
Total assets	100.91	101.57	99.98	100.3
Shareholders funds	56.74	55.49	51.67	36.4
Non current liabilities	12.01	7.91	13.61	25.2

TABLE 1. (Continued)

-Long term debt	11.63	6.47	3.95	12.5
-Other non-current liabilities	.38	1.44	9.66	12.7
Current liabilities	31.68	39.98	34.72	39.7
- Loans	9.23	10.68	5.98	11.8
-Creditors	20.61	11.66	23.09	14.2
- Other	1.84	17.64	5.85	13.7
Total shareh. funds & liab	100.91	101.06	100	101.3
Number of Companies	1205	473	338	
C. 1993				
Fixed assets	50.85	52.15	49.16	42.9
-Intangible fixed assets	.58	1.45	1.45	3.4
-Tangible fixed assets	42.48	45.57	45.78	32.7
-Other fixed assets	3.29	5.14	1.92	6.8
Current assets	49.1	48.88	50.84	57.4
-Stocks	17.81	19.06	19.67	18.6
-Debtors	21.89	20.78	23.23	26.7
-Others	7.17	9.04	6.88	1.8
*Cash & cash equivalent	5.74	6.47	6.1	10.3
Total assets	99.95	100	100	100.3
Shareholders funds	56.16	58.55	49.64	36.4
Non current liabilities	10.95	7.04	16.58	25.2
-Long term debt	10.62	5.78	3.41	12.5
-Other non-current liabilities	.33	1.25	13.17	12.7
Current liabilities	32.32	36.01	33.78	39.7
- Loans	8.58	10	6.25	11.8
- Creditors	20.99	10.42	22.68	14.2
- Other	2.75	15.6	4.86	13.7
Total shareh. funds & liab.	99.72	100	100	101.3
Number of Companies	610	236	195	

Note: The values are percentages of the book value of the total assets for each enterprise and then averaged across all enterprises. Enterprises in transitional economies report unconsolidated balance sheets for 1993,1994, 1995; enterprises in Germany, France, Italy, and UK report consolidated balance sheets for 1991. Data for Germany, France, Italy, and UK from Global Vantage Database, as reported in Rajan and Zingales (1995). Balance sheet format in Czech Republic, Hungary, and Poland is slightly different from the format used in Rajan and Zingales. For example, items like deferred taxation, minority interest and reserves untaxed are not included in balance sheets of Czech, Hungarian and Polish enterprises. For the purpose of this study deferred taxation is classified as a non-current liability, minority interest and untaxed reserves are included in shareholders funds. Numbers involved are minimal and do not have a significant effect on the comparison. Column entries may not add to 100% due to rounding.

have a higher proportion of tangible fixed assets than do those in other European countries, with an average percentage in the Czech Republic, Poland and Hungary between 1993 and 1995 of 43.82%, 44.68% and 44.82% respectively. This may be because assets inherited from the socialist period are often recorded at the prices prevailing under the socialist system so that fixed assets may be overstated (Cornelli et al. 1996). On the other hand, a downward bias is possible because of the conservative accounting practices adopted in CEEC after the demise of communism. By contrast, the composition of current assets is similar between the two groups of countries, and in both cases stocks and debtors seem rather high.[11]

A dominant feature on the liabilities side is the high level of shareholders' funds. The average percentage of around 55% for the Czech Republic, Poland and Hungary is much higher than the average of 36.4% for firms in France, Italy, Germany and UK. These figures are consistent with findings reported in Bonin and Schaffer (1994) and Belka et al. (1994), showing a preference for equity financing in Hungary and Poland. This was explained by large downside risks, the weak legal framework for debt collection, and poor monitoring by creditors which created a possibility of managers and owners stripping assets at the expense of creditors (Baer and Gray, 1995). A further explanation was the high level of interest rates (McKinnon, 1991)[12]. A final factor is that the equity was inherited from a system in which investments were mainly financed from state funds.

The low percentage of long term debt in economies in transition, with the exception of the Czech Republic, where the percentage ranges from 10.62 in 1993 to 20.08 at the end of 1995, seems to be consistent with hypothesis 1. The percentage of short-term loans in selected countries also seems to be lower than in the European market economies. Finally, the percentage for creditors seems to be higher than that reported for

11. European companies have fewer fixed assets and more current assets in their balance sheets than US companies because of higher inventories and accounts receivable (Rajan and Zingales, 1995; p.1427).

12. The average spreads between lending and deposit rates in the Czech Republic and Hungary during 1993-95 were 6.2 and 8.2 percent respectively; Own calculation based on data from Dittus and Prowse (1996), and IMF Staff Country Reports.

the leading European countries only in the Czech Republic.

Our results are consistent with findings for a sample of non-financial enterprises in 10 developing countries reported in Booth et al. (1999). Except for one country, the developing countries in their sample have median debt levels below those reported for the G-7 countries in Rajan and Zingales (1995). According to the authors, the major source of the differences is the substantially lower amount of long-term debt in developing countries.

The analysis of leverage was based upon six different measures. The first four are 'stock-based' measures as defined in Rajan and Zingales (1995). Leverage 1 represents total liabilities divided by the value of total assets and is a good proxy for what is available to shareholders after liquidation.[13] Leverage 2 is the total of short plus long term debt, divided by total assets, while leverage 3 is the total of short plus long term debt divided by net assets, defined as assets minus creditors and other liabilities. Leverage 4 is the total of short plus long term debt divided by the sum of the book value of debt and equity. The low level of indebtedness in CEEC is confirmed by the low leverage percentages reported in table 2.

The ratios 1 to 4, are much lower in all years than the average of corresponding ratios in the UK, Germany, France.[14] The relatively low percentages of long term debt and short term loans are rather surprising given the reputation of firms in transition economies for high indebtedness.[15] The above results, however, should be treated cautiously, because of at least two biases. A downward bias could be

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13. A possible limitation of this ratio is that it includes current liabilities, pension liabilities and deferred taxes, which are normally not used for financing. Although the pension liabilities and deferred taxes do not represent a significant part of the liability structure of the companies in our sample we are aware that the quality of the ratios would depend not only on the itemisation of assets and liabilities but also on their valuation. We would like to thank an anonymous referee for this remark.

14. An increase in leverage is even more evident if we consider ratio 1 in Hungary (32%) and Poland (41%) as reported in Cornelli et al (1996).

15. It is worth noting that the most indebted companies (worst decile according to 'leverage 2' measure) accounted for 18%, 29% and 18% of the total bank debt, and only 6%, 10.5% and 4.74% of revenues in 1993, 1994 and 1995, respectively. This suggests a relatively high concentration of bank debt in non-profitable companies.

TABLE 2. Extent of Leverage in Transition Economies, 1995

Country	*N*	Leverage 1		Leverage 2		Leverage 3		Leverage 4		Leverage 5		Leverage 6	
A. 1995													
Czech Republic	526	.45	(.41)	.21	(.18)	.4	(.23)	.32	(.23)	1.17	(0)	6.82	(1)
		.3		.19		1.22		1.59		24.36		48.71	
Hungary	367	.48	(.44)	.16	(.12)	.24	(.17)	.23	(.17)	n/a		n/a	
		.28		.17		.26		.24					
Poland	367	.4	(.37)	.12	(.08)	.2	(.11)	.2	(.12)	n/a		n/a	
		.25		.16		.34		.34					
Average Cz,P,H		.44	(.41)	.16	(.13)	.28	(.17)	.25	(.17)				
Average F,G,I,UK		.66	(.67)	.24	(.22)	.33	(.32)	.4	(.4)	(3.11)		(5.21)	
B. 1994													
Czech Republic	1260	.43	(.37)	.21	(.16)	.27	(.21)	.27	(.21)	18.25	(1)	29.32	(2)
		.28		.19		.53		.53		470.99		660.11	
Hungary	473	.47	(.41)	.17	(.11)	.26	(.16)	.24	(.16)	n/a		n/a	
		.28		.19		.32		.26					
Poland	492	.51	(.49)	.11	(.05)	.21	(.09)	.22	(.1)	19.6	(4)	40.89	(7)
		.29		.15		.38		.38		153.4		174.29	
Average Cz,P,H		.47	(.42)	.16	(.11)	.25	(.15)	.24	(.16)	(2.5)		(4.5)	
Average F,G,I,UK		.66	(.67)	.24	(.22)	.33	(.32)	.4	(.4)	(3.11)		(5.21)	

TABLE 2. (Continued)

C. 1993													
Czech Republic	636	.43	(.38)	.2	(.16)	.23	(.21)	.23	(.21)	3.83	(1)	8.17	(2)
		.27		.18		1.08		1.08		59.34		82.92	
Hungary	236	.43	(.38)	.15	(.10)	.31	(.15)	0.22	(.15)	n/a		n/a	
		.25		.16		1.33		.23					
Poland	294	.49	(.44)	.1	(.06)	.18	(.11)	0.18	(.11)	148.49	(4)	200.37	(6.5)
		.27		.12		.33		.33		1571.58		1677.28	
Average Cz,P,H		.44	(.4)	.15	(.11)	.24	(.16)	.21	(.16)	(2.5)		(4.25)	
Average F,G,I,UK		.66	(.67)	.24	(.22)	.33	(.32)	.4	(.4)	(3.11)		(5.21)	

Note: Leverage measures for transition economies are for non-financial companies reporting unconsolidated balance sheets. Leverage measures for F, G, I, UK, from Rajan and Zingales (1995). Mean (median) and *standard deviation;* The value of each ratio is calculated for each company and then averaged across all companies. Leverage 1(%) is the sum of all liabilities divided by the value of total assets (non-equity liabilities for F, G, I, UK). Leverage 2(%) is the value of short term plus long term debt divided by total assets. Leverage 3(%) is the value of short term plus long term debt divided by net assets, where net assets is assets minus creditors and other liabilities. Leverage 4(%) is the value of short term plus long term debt divided by the sum of the book value of debt and equity. Leverage 5(times) is earnings before interest and tax (EBIT) divided by interest paid. Leverage 6(times) is earnings before interest, tax, and depreciation (EBITD) divided by interest paid.

caused by the use of unconsolidated accounts, and the fact that a significant part of debt may be concealed in subsidiaries.[16] On the other hand, an upward bias may be attributable to the fact that a large number of state-owned enterprises were included in the sample, while state guarantees to debtholders were ignored (Rajan and Zingales, 1995; p.1435).

Ratios 5 and 6 are basically measures of interest cover, and are more meaningful when considering financial distress and the possible transfer of control from shareholders to debtholders (Aghion and Bolton (1992), as cited in Rajan and Zingales, 1995; p.1427). The 'flow-based' measures do not suggest that firms in the Czech Republic, Hungary, and Poland have serious problems in meeting their fixed payments.

IV. Determinants of Bank Lending in the Czech Republic, Poland, and Hungary (1993-1995)

Stock and bond markets in economies in transition are in an embryonic stage. Bank loans were the dominant source of external financing in CEEC countries between 1993 and 1995 and the only other significant source of external investment financing was tax and social security arrears. This provides an excellent opportunity to analyse cross-sectional differences in the extent of bank debt between companies by controlling for equity financing, for, due to the predominance of bank loans for external financing, the factors correlated with leverage should explain the loan supply schedules of banks. However, variables that have been shown to apply in developed market economies may not necessarily be appropriate for economies in transition. For example, theories of capital structure suggest that larger, better diversified, companies have a lower probability of bankruptcy, so that banks should be more willing to lend to larger companies. In economies in transition,

16. Czech Ministry of Finance Decree (ref. no. 281/73570/1993) set out procedures for the consolidation of accounts. With regard to disclosure of information regarding group accounts, the Decree on Consolidation requires that consolidated financial statements need only be published in certain cases. However, it fails to prescribe these cases precisely or to explain how the statements should be made available to the public. It is therefore not surprising that, out of 35 holding companies which are included in the Prague Stock Exchange Index, only 9 actually published consolidated financial statements in 1994 (Zelenka, 1995).

however, the largest companies tend to be state-owned, and the supply of bank loans to them could be politically motivated. It is, therefore, necessary to control for state ownership before any conclusions are drawn with regard to the effect of size on the supply of bank loans.

We focus on factors for which there is a consensus in the literature on capital structure, namely tangibility of assets, profitability, and company size. Due to the importance of the transition from state-dominated towards market-dominated investment financing we attempted to control for state ownership. Firstly, we ran various regressions with leverage as a dependent variable and tangibility, profitability, size, and a dummy variable for state ownership as independent variables. The basic regression we estimate is

$$Leverage_{i,t} = \alpha + \beta_1 Tangibility_{i,t} + \beta_2 Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4 State_{i,t} + \varepsilon_{i,t}. \quad (1)$$

We use three different measures of leverage: total debt/total asset ratio, long-term debt/total asset ratio, and short-term debt/total asset ratio. Since debt levels in transition economies may be influenced by historic factors and inherited debt from pre-transition period we also estimated regressions for the year to year changes in the above-mentioned leverage ratios. In regressions with changes in short-term loans, the level of long term debt was used as an additional explanatory variable (table 3). If banks are lending correctly, leverage should increase with tangibility, profitability, and firm size. A positive association of leverage with a state dummy would indicate lending bias and provide support for our hypothesis 3, while a positive association between short-term loans and the level of long term debt in the previous year would provide some evidence for the 'gambling banks' hypothesis. To check the robustness of the results we run regressions for 1995 lending schedules where we average and lag explanatory variables one period in order to allow for slow adjustments and to reduce the problem of endogeneity, as suggested in Rajan and Zingales (1995).

Finally, we run covariance tests for differences in coefficients across countries in a stacked regression framework.[17] Maximum Likelihood

17. We thank an anonymous referee for this suggestion.

(ML) estimation of seemingly unrelated regressions (SURE) model is used to estimate systems of equations subject to linear cross-equation restrictions. The estimated SURE model is given by

$$TD/TA_{i,t} = \alpha + \beta_1 Tangibility_{i,t} + \beta_2 Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4 State_{i,t} + \varepsilon_{i,t}, \quad (2)$$

for i = Czech Republic, Hungary, and Poland, and t = 1993, 1994, 1995.

The relevant null hypotheses that the coefficient of Tangibility, Profitability, Size, and State, are the same across all the three countries are

$$Ho: \beta_{i,1} = \beta_1; \; Ho: \beta_{i,2} = \beta_2; \; Ho: \beta_{i,3} = \beta_3; \; Ho: \beta_{i,4} = \beta_4;$$

The relevant null (overall) hypothesis that all coefficients are the same across all the three countries is

$$Ho: \beta_{11} = \beta_{21}, \beta_{21} = \beta_{31}, \beta_{12} = \beta_{22}, \beta_{22} = \beta_{32}, \beta_{13} = \beta_{23}, \beta_{23} = \beta_{33}, \beta_{14} = \beta_{24}, \beta_{24} = \beta_{34}.$$

Estimated coefficients for our regressions are presented in tables 3-7. We first outline patterns across countries before we draw attention to differences among selected countries. The explanatory power of regressions is generally low, and it is much lower than that reported for similar regressions estimated for developed (Rajan and Zingales, 1995), and developing countries (Booth et al., 1999).[18]

Profitability seems to be negatively and significantly related to total, long, and short term leverage ratios in regressions for Czech and Hungarian enterprises (tables 3-5), but positively (though not significantly) related to the corresponding ratios in regressions for Polish enterprises. This result for Poland contradicts results reported in Cornelli et al. (1996). The reported negative correlation between

18. For example, R^2 reported for developed countries ranges from 5% to 30%, whereas for developing countries ranges from 7% to 89%. It is, however, worthwhile mentioning that Rajan and Zingales report higher R^2s for the market leverage regressions and that Booth et al. include average tax rates in their regressions.

TABLE 3: Total Bank Debt Ratio

		Intercept	*Tangibility*	*Profitability*	*Size*	*State*	*N*	*F* – stat.	R^2
Czech R	1995	.096	-.93*	–.059	.018*	–.082	478	4.02	3.3
	1994	.051	–.048*	–.152*	.021	–.076	1209	1.32*	3.3
	1993	.225*	–.106*	–.123	.005	–.042	618	4.49*	2.8
Hungary	1995	–.244*	–.013	.053	.044*	–.012	365	8.69*	8.8
	1994	.157*	–.115*	–.092	.010	–.025	466	2.76	2.3
	1993	.337*	–.038	–.164	–.012*	–.043	227	1.91	3.3
Poland	1995	–.014	.039	.019	.003	.036	124	.472	1.6
	1994	.037	.023	.003	.004	.004	306	.36	.47
	1993	.015	–.007	.017	.010	–.024	131	.56	1.8

Note: Cross-sectional variations in leverage measured by total book debt ratios; Estimated model: $Leverage_{i,t} = \alpha + \beta_1 Tangibility_{i,t} + \beta_2 Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4 State_{i,t} + \varepsilon_{i,t}$;* Significant at 5% or better; Dependent variables are total debt/total assets ratios (*TD/TA*) for respective years. Tangibility is the fixed assets/total assets ratio. *Size* is natural logarithm of sales. Profitability is operating profit/total assets ratio. State is a dummy variable, 1= state owned enterprise.

TABLE 4: Long Bank Debt Ratio

		Intercept	*Tangibility*	*Profitability*	*Size*	*State*	*N*	*F* – stat.	R^2
Czech R.	1995	.096	–.09*	–.053	.017*	–.088	478	3.94*	3.2
	1994	.045	.07	–.036	.008*	–.051	1209	1.57	.5
	1993	.119*	.038	–.006	–.002	–.024	618	.84	.5
Hungary	1995	–.049	.05*	–.017	.010*	–.016	365	2.09	2.3
	1994	.078	.046	–.056	–.001	–.027*	466	2.02	1.7
	1993	.188*	.091*	–.16*	–.014*	–.047*	227	6.92*	11.1
Poland	1995	–.127	.243*	.096	.006	–.025	62	2.74*	16.2
	1994	–.129	.072*	–.05	.002	–.003	222	1.94	3.4
	1993	–.073	.058	–.019	.009	.002	107	1.21	4.5

Note: Cross-sectional variations in leverage measured by long book debt ratios; Estimated model: $\text{Leverage}_{i,t} = \alpha + \beta_1\ \textit{Tangibility}_{i,t} + \beta_2\ \textit{Profitability}_{i,t} + \beta_3\ \textit{Size}_{i,t} + \beta_4\ \textit{State}_{i,t} + \varepsilon_{i,t}$;* Significant at 10% or better; Dependent variables are long term debt/total assets ratios (*LD/TA*) for respective years. Tangibility is the fixed assets/total assets ratio. *Size* is natural logarithm of sales. Profitability is operating profit/total assets ratio. State is a dummy variable, 1= state owned enterprise.

TABLE 5: Short Bank Debt Ratio

		Intercept	*Tangibility*	*Profitability*	*Size*	*State*	*N*	*F* – stat.	R^2
Czech R.	1995	.001	–.001	–.006	.001	.006	478	.16	.1
	1994	.007	–.05*	–.11*	.013*	–.025	1209	15.71*	5
	1993	.105*	–.14*	–.11*	.007*	–.019	618	18.89*	11
Hungary	1995	–.195*	–.063*	.07	.035*	.004	365	9.58*	9.6
	1994	.08	–.161*	.036	.011*	.002	466	9.08*	7.3
	1993	.149*	–.13*	–.005	.002	.004	227	3.21*	5.5
Poland	1995	.092	–.068*	.003	–.003	.028	124	1.86	5.9
	1994	.05	–.011	.014	.007	.021	279	.33	.5
	1993	.097	–.042	.037	.007	–.027	122	1.03	3.4

Note: Cross–sectional variations in leverage measured by short book debt ratios; Estimated model: $Leverage_{i,t} = \alpha + \beta_1\ Tangibility_{i,t} + \beta_2\ Profitability_{i,t} + \beta_3\ Size_{i,t} + \beta_4\ State_{i,t} + \varepsilon_{i,t}$;* Significant at 10% or better; Dependent variables are short term debt/total assets ratios (*L/TA*) for respective years. Tangibility is the fixed assets/total assets ratio. Size is natural logarithm of sales. Profitability is operating profit/total assets ratio. State is a dummy variable, 1= state owned enterprise.

TABLE 6: Change in Bank Lending 1994-1995

		Intercept	*Tangibility*	*Profitability*	*Size*	*State*	*LD*	*N*	*F* – stat.	R^2
Czech R.	$\Delta TD/TA$	–.051	–.005	–.097*	.006	–.005		395	2.3	2.3
	$\Delta LD/TA$	–.026	–.135*	–.152*	.021*	–.051		395	11.42*	1.5
	$\Delta L/TA$	.003	.106*	.035	–.009*	.019	–.317*	395	35.9*	31.6
Hungary	$\Delta TD/TA$	–.026	.001	–.001	–.001	.036		130	.46	1.4
	$\Delta LD/TA$	–.024	.001*	–.001	–.001	.023		130	1.91	5.8
	$\Delta L/TA$	–.002	–.001	–.001	.001	.012	–.001	130	.48	1.9
Poland	$\Delta TD/TA$	–.034	–.067	.166*	.003	.052		80	3.92*	17.3
	$\Delta LD/TA$	.136	–.033	.154	–.006	–.039		41	.61	6.3
	$\Delta L/TA$	.163	–.106*	–.097	–.006	–.004	.027	56	.95	8.7

Note: Dependent variables are change in total debt/total assets ratios, long term debt/total assets ratios, and short term debt/total asset ratios for respective years. Tangibility is the fixed assets/total assets ratio. Size is log of sales. Profitability is operating profit/total assets ratio. *State* is a dummy variable, 1 = state owned enterprise. Long term debt is the long term debt/total assets ratio; Estimated model for ΔTD and ΔLD: $\Delta Leverage_{i,t} = \alpha + \beta_1 Tangibility_{i,t} + \beta_2 Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4 State\ ownership_{i,t} + \varepsilon_{i,t}$; Estimated model for ΔL: $\Delta Leverage_{i,t} = \alpha + \beta_1 Tangibility_{i,t} + \beta_2 Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4 State\ ownership_{i,t-1} + \varepsilon_{i,t}$; * Significant at 10% or better.

TABLE 7: Change in Bank Lending, 1993-94

		Intercept	*Tangibility*	*Profitability*	*Size*	*State*	*LD*	*N*	*F* – stat.	R^2
Czech R.	$\Delta TD/TA$	–.014	.0113	–.377*	.003	.001		463	14.46*	11.2
	$\Delta LD/TA$	.020	.007	–.237*	–.001	–.013		463	7.1*	5.8
	$\Delta L/TA$	–.032	.011	–.143*	.006	.010	–.106*	463	4.68*	4.9
Hungary	$\Delta TD/TA$	.012	–.001	–.001	.001	–.01		138	.79	2.3
	$\Delta LD/TA$	–.003	–.001	–.001	.001	–.001		138	.03	.1
	$\Delta L/TA$	.013	.001	–.001	.001	–.002	.001	138	.82	3.0
Poland	$\Delta TD/TA$	.089	.055	.053	–.050	–.003		259	.87	1.3
	$\Delta LD/TA$	.135	.082	.033	–.011	–.020		111	1.13	4.0
	$\Delta L/TA$	.090	–.006	.038	–.005	.003	.137	155	.64	2.1

Note: Dependent variables are change in total debt/total assets ratios, long term debt/total assets ratios, and short term debt/total asset ratios for respective years. Tangibility is the fixed assets/total assets ratio. Size is log of sales. Profitability is operating profit/total assets ratio. State is a dummy variable, 1 = state owned enterprise. Long term debt is the long term debt/total assets ratio; Estimated model for ΔTD and ΔLD: $\Delta Leverage_{i,t} = \alpha + \beta_1\ Tangibility_{i,t} + \beta_2\ Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4\ State\ ownership_{i,t} + \varepsilon_{i,t}$; Estimated model for ΔL: $\Delta Leverage_{i,t} = \alpha + \beta_1\ Tangibility_{i,t} + \beta_2\ Profitability_{i,t} + \beta_3 Size_{i,t} + \beta_4\ State\ ownership_{i,t-1} + \varepsilon_{i,t}$; * Significant at 10% or better.

profitability and leverage levels could be partly explained by inherited bad loans.[19] However, this alone cannot explain the persistence of negative (and significant in the Czech Republic and Hungary) coefficients for regressions with the change in leverage (tables 6 and 7). Cornelli et al. (1996) regard the negative correlation between profitability and leverage levels as evidence of the inability of banks to cope with the problem of information asymmetry. Unable to distinguish between high and low quality companies, banks charge excessive interest rates, forcing companies to rely on internal sources rather than on bank loans. This, of course, is easier for highly profitable companies but creates problems for other companies which cannot achieve their optimal financial structure. The negative relationship between profitability and leverage ratios may also be consistent with an argument from the demand side, which suggests a lower demand for bank loans from more profitable enterprises.

The results support the hypothesis relating to the role of the tangibility of assets in lending decisions. Tangibility, however, appears to affect the total, long and short debt ratios differently. For example, Czech and Hungarian companies with more fixed assets tend to have higher long term debt ratios, but lower short and total debt ratios (tables 3, 4, and 5). This further implies that the short to long term loans substitution ratio is bigger than 1.[20] In Poland, tangibility seems to be positively correlated with total and long term debt ratios but negatively with short-term debt ratios. The results of regressions with changes in leverage suggest that collateral plays an important role in new lending in all countries (table 6).

Coefficients for the state ownership dummy variable are predominantly negative, except in regressions for short-term debt ratios (table 5).[21] Predominantly negative coefficients for state dummy can

19. The percentage of loans in the assets of banks in the Czech Republic dropped from 55.2% at the end of 1993 to 46.9% at the end of 1995. During the same period their investment in government securities and property rose from 4.3% to 8.4%, and from .8% to 6.5%, respectively; Hrncir (1997), p.8.

20. Booth et al (1999) report the substitution of long-term for short term debt for their sample of ten developing countries.

21. The only exception is the regression with short-term debt/total assets in 1995. The different results for the state-ownership dummy in Poland and Hungary could, perhaps, be explained by the much higher percentage of private companies in the Czech Republic

be a sign of banks increasing monitoring efforts, and do not lend support for hypothesis 3. However, positive coefficients for short-term debt ratios are also consistent with hypothesis 2, according to which state-owned enterprises might have been favoured because of inherited higher levels of long term debt. To test the latter hypothesis we included the long-term debt to total asset ratio as an explanatory variable for changes in short term debt. The negative and significant coefficients (for the Czech Republic) for long-term debt variable do not provide support for the hypothesis 2.

The size of enterprises is predominantly positively correlated to debt ratios, which is generally in the spirit of results reported in Cornelli et al. (1996) and Rajan and Zingales (1995).[22] The exceptions are regressions for changes in leverage ratios in Poland (1994-95) where a negative and statistically significant relationship has been found.

To check the robustness of the results we run regressions for 1995 lending schedules, where we average and lag explanatory variables one period in order to allow for slow adjustment and to reduce the problem of endogeneity, as suggested in Rajan and Zingales (1995). We obtain similar results for key variables, tangibility and profitability, which again suggest that Polish banks lend differently to their Czech and Hungarian counterparts, by lending less on a long-term basis to the largest companies and more to companies with better collateral.[23]

Wald statistics for the covariance test for differences in coefficients across countries are reported in table 8. The relevant null hypotheses that the coefficient of Tangibility, Profitability, Size, and State are the same across all the three countries are rejected at 5% significance level for total debt regressions in 1994 and 1995. The analysis also shows that the differences between countries are mainly due to different coefficients for size and tangibility.

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than in Poland and Hungary.

22. Except for Germany where negative and significant coefficients for size have been reported.

23. Unreported results available upon request.

TABLE 8. Covariance Test for Differences in Coefficients Across Countries

	Tangibility	*Profitability*	*Size*	*State*	Overall
1995	4.871	4.0193	15.4684*	.82587	22.0285*
1994	7.8055*	.10077	5.86221	2.9691	16.7902*
1993	2.7975	1.9368	.50097	.027829	3.9072

Note: Wald statistics for the covariance test for differences in coefficients across countries. Maximum Likelihood (*ML*) estimation of seemingly unrelated regressions (SURE) model is used to estimate systems of equations subject to linear cross-equation restrictions. The estimated SURE model is given by: $TD/TA_{i,t} = a_{i,1} + \beta_{i,1}\, Tangibility_{i,t} + \beta_{i,2}\, Profitability_{i,t} + \beta_{i,3}\, Size_{i,t} + \beta_{i,4}\, State_{i,t} + e_{i,}$, for i = Czech Republic, Hungary, and Poland, and t = 1993, 1994, 1995. The relevant null hypotheses that the coefficients of *Tangibility*, *Profitability*, *Size*, and *State*, are the same across all the three countries are: *Ho*: $\beta_{i,1} = \beta_1$; *Ho*: $\beta_{i,2} = \beta_2$; *Ho*: $\beta_{i,3} = \beta_3$; *Ho*: $\beta_{i,4} = \beta_4$; The relevant null (overall) hypothesis that all coefficients are the same across all the three countries is; *Ho*: $\beta_{11} = \beta_{21}, \beta_{21} = \beta_{31}, \beta_{12} = \beta_{22}, \beta_{22} = \beta_{32}, \beta_{13} = \beta_{23}, \beta_{23} = \beta_{33}, \beta_{14} = \beta_{24}, \beta_{24} = \beta_{34}$; * Indicates the Wald statistics above the 95% critical value of the chi-squared distribution with 2 degrees of freedom, and that the slope homogeneity hypothesis is rejected.

V. Conclusion

With non-performing loans inherited from the pre-privatisation period, cross-ownership between banks and the corporate sector, and capital markets in an embryonic stage, problems of asymmetric information and moral hazard are likely to be associated with the banking sector in transition economies. However, notwithstanding these problems, the financing role of the banking sector in CEEC is so important that it needs to be analysed and understood as comprehensively as possible. This paper has attempted to assist this process by examining the level of leverage in selected CEEC and attempting to explain the determinants of these levels. These explanations provide evidence for the analysis of the lending policies adopted by banks, and development of financial structures in CEECs' enterprises.

First, we examine the balance sheets and the actual level of indebtedness of Czech, Hungarian and Polish non-financial companies. A dominant feature on the assets side of the balance sheets is the high percentage of tangible fixed assets, much higher than that found in

leading European countries. The average percentage of fixed tangible assets in the Czech, Polish, and Hungarian corporate sector between 1993 and 1995 was 43.82, 44.68, and 44.22 percent respectively, compared to an average of 32.7% (for 1991; Rajan and Zingales) for France, Italy, Germany, and UK. On the liabilities side, Czech companies seem to have a higher percentage of long term debt and creditors than their Polish and Hungarian counterparts. However, the corporate sector in the selected CEEC has much lower leverage across the various measures than that found in leading European countries.

Our results on leverage are consistent with those reported in Cornelli et al.(1996), and they indicate the existence of asymmetry between a small percentage of heavily indebted companies with inherited non-performing loans on the one side, and the majority of the corporate sector with rather low leverage on the other side. The average liabilities-assets ratio for non-financial companies in France, Italy, Germany, and the UK was 66% (for 1991; Rajan and Zingales) whereas the average ratio for the Czech Republic, Poland, and Hungary was 45% (1993-95). Other 'stock-based' measures of leverage lead to the same conclusion. The relatively low debt ratios seem to be persistent and are therefore not merely a feature of an early phase of transition.

We found no evidence for hypotheses that banks favour state-owned enterprises (SOEs), and that the increase in new bank loans is related to the level of long term debt in previous years. With regard to the availability of collateral and profitability our results are consistent with those reported in Cornelli et al. (1996), and suggest a negative correlation with debt ratios. The only exception is a positive (though not significant) relationship for profitability reported for Poland. Polish enterprises are therefore less likely to have experienced credit rationing than their Hungarian and Czech counterparts. The size of enterprises is predominantly positively correlated to debt ratios in all the countries concerned, with some exceptions in regressions for change in ratios in Poland. Finally, the covariance tests for differences in factors across countries confirm differences in bank loan supply schedules in these countries, mainly due to the different coefficients for tangibility and size in respective years. Further research in this area is needed in order to explain whether apparent differences in bank lending and an absence of credit rationing in Poland are connected with different institutional

reforms and bank rehabilitation programmes in CEEC.[24]

We interpret these results as evidence of an improvement in financial intermediation in these countries, especially with regard to the bias towards state-owned enterprises. However, a negative relationship between profitability and new debt accumulation in the Czech Republic and Hungary may be an indication of credit rationing caused by adverse selection. Finally, the low explanatory power of regressions in this and other similar studies on bank lending transition economies seem to indicate a great scope for an improvement in the functioning of financial intermediation, and the importance of further institutional reforms in transition economies.

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