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CORPORATE GOVERNANCE IN CENTRAL EUROPE: THE ROLE OF BANKS

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Abstract

This paper analyses the banking systems of former Czechoslovakia, Hungary and Poland in a comparative perspective with the aim of determining whether they can play a role in improving the corporate governance of large enterprises. Five dimensions are investigated: non-performing loans, changes in bank behaviour, the framework for bank/industry relations, prudential regulation and supervision, and competition. It is shown that bank behaviour changed dramatically in 1992 in response non-performing loans which came to light and tighter bank regulation. Nonetheless, the analysis suggests that to involve banks in corporate governance now is not without risks and that banking supervision in particular needs to be strengthened further.

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Introduction*

Since the fall of the Berlin Wall the countries in eastern Europe have undergone a dramatic transformation. Institutions and laws have been remoulded to serve the needs of a market economy. Spontaneous market forces that had been fettered before have been liberated. While entrepreneurs have responded swiftly to the changed incentives and private sector growth has been brisk, output and employment in large enterprises has continued to contract. Given the substantial part of output accounted for by large enterprises, sustained and rapid growth will require that these enterprises are restructured where possible and liquidated where necessary. Substantial investment is also needed in many cases. In turn this means that there must be interested owners or creditors who can take and implement decisions: in other words, there must be effective corporate governance.

Some analysts have proposed that banks should be actively involved in enterprise restructuring (van Wijnbergen (1992)) and corporate control (Corbett and Mayer (1991) and Mayhew and Seabright (1992)). Others are more sceptical and have suggested that there should be a complete break with the past and that banks should stop lending to newly privatised enterprises (McKinnon (1991)). Again, others advise that the role of financial intermediaries should be strengthened but feel that existing banks are not in a position to provide effective control (Steinherr (1993) and Sarcinelli (1992)). Can *existing* banks already play a constructive role in corporate governance in central Europe? That is the question addressed

* The views expressed in this paper are my own and do not necessarily reflect those of the BIS or of its shareholders. I have benefited from discussions at the BIS and the HWWA Institute. Especially helpful have been comments on an earlier draft by Horst Bockelmann, Joseph Bisignano and Palle Andersen. I am indebted to staff at the Czech, Slovak, Hungarian and Polish National Banks for many interesting discussions and for providing information which has greatly facilitated my work.

in this paper.[1] In order to answer this question, the banking systems of former Czechoslovakia, Hungary and Poland are compared in terms of five aspects: non-performing loans, changes in bank behaviour, the framework for bank/industry relations, prudential regulation and supervision, and competition. It is shown that bank behaviour changed dramatically in 1992 in response to non-performing loans which came to light and tighter bank regulation. Nonetheless, banks continue to be weighed down by non-performing loans, although to varying degrees, and banking supervision needs to be strengthened further. The analysis suggests that to involve banks in a major way in corporate control at this stage is not without risks.

It has not been easy to document this paper adequately. The availability of data on banks in central Europe is limited and they are not always reliable; different accounting standards make cross-country comparisons difficult; and reporting formats and definitions have changed over time as statistical systems have been brought into line with the needs of a market economy. The banking field is also changing rapidly. A note of caution is therefore in order. Although care has been taken in the selection and use of data, the picture that emerges from this paper is probably best looked upon as a snapshot which describes in outline a complex and rapidly evolving situation. Partly as a result of data availability, this paper concentrates on the former Czechoslovakia, Hungary and Poland. These are also the countries where the banking sector appears sufficiently developed to consider a larger role in enterprise control and restructuring. Many of the data series extend to the end of 1992. Since then, developments in the banking sectors of the Czech and Slovak Republics have been rather different, but little official information on the Slovak banks has been made public. The analysis therefore focuses mainly on developments up until the end of 1992, which also in many respects marked a watershed for the banking sectors in the countries in question, as will be described below.

Section 1 provides an overview of mechanisms used by shareholders and creditors to control the management of large companies and examines the arguments for involving banks in the control of enterprises in

[1] The wider issue of which system of corporate governance should be chosen is beyond the scope of the paper, and consequently no attempt is made to weigh up the relative merits of anonymous security markets, majority shareholders, investment privatisation funds and banks.

central Europe. It sets the scene for the analysis undertaken in the subsequent sections.

Section 2 considers whether existing banks are able to control enterprises effectively. It concentrates on banks' problem loans and whether measures already taken or in hand are likely to recapitalise banks to a sufficient degree, examines changes in bank behaviour to detect whether banks have become more prudent in their lending policies and investigates whether the legal environment for bank/industry relations is conducive to banks playing a more active role.

Section 3 asks who monitors the monitor: how well are banks themselves controlled. The focus is on bank regulation and supervision as well as competition between banks. The final section draws conclusions.

1. Corporate governance and the role of banks

Even though the concept of "corporate governance" may be new, the problem itself has been well-known in central European economies for many years and was the subject of the intense debates on reform that took place in several countries in the 1960s in particular. The centrally planned economies depicted in western textbooks never existed as such. Plans were not drawn up by planning bureaucracies in isolation and then handed down to enterprises to execute. They were the result of several rounds of reiterated positions and negotiations between enterprises, the ministries responsible and the planning agency. The planning agency and relevant ministries faced a serious problem of corporate control: how to obtain the best performance from enterprises whose managers and workers had their own objectives and who were the only ones to have the necessary information to judge the feasibility of plans, enabling them to manipulate the bargaining process to their own advantage. The demise of central planning can be explained in part by the failure to solve the two main problems of corporate control: how to obtain undistorted information and to credibly punish poor performance. Moreover, the two are linked: in the absence of reliable information poor performance was difficult to identify and punish.

When the eastern European countries embarked on reform, they freed themselves from the constraints of the plan but at the same time lost the control mechanism it had provided, however weak it may have

been. The degree to which insiders had taken effective control over enterprises during the 1980s was revealed: employees through workers' councils in the case of Poland and managers in Hungary. Only in Czechoslovakia had the original control structure remained more or less intact.

With the demise of central planning, new ways had to be found to mitigate the inefficiencies that can arise from the different preferences of owners and creditors (the principals) and management (the agents). Given the intricate difficulties of managing state-owned enterprises,[2] privatisation is widely seen as providing an important part of the answer. The argument for private enterprise is based on the disciplinary force exerted by competitive markets. Competition in input and product markets would force managers to maximise the value of the firm regardless of the method of corporate governance, and firms in which managers pursued their own goals to the detriment of competitiveness would be eliminated over time through an evolutionary selection process. The ingredients of corporate governance, in this view, are privatisation, competition and properly functioning bankruptcy procedures. However, several arguments would seem to support more active policies towards corporate control than relying solely on the Darwinian process of natural selection through competition and bankruptcies. These are related to the cost of bankruptcy proceedings, their credibility and, more generally, the restructuring needs of many companies in eastern Europe.

The use of bankruptcy is costly because it is designed to protect creditors, not owners. If effective corporate control is lacking, managers can erode shareholder wealth until it reaches a point where creditors' capital may be endangered. While the costs of bankruptcy procedures to shareholders are evident, those to society can be large too. Less capital is used for productive purposes as the discretionary use of funds by management wastes resources for consumption purposes, and the knowledge of the partial misuse of enterprise capital reduces the supply of such capital. To the extent that corporate control mechanisms can prevent capital from being wasted the costs to society are reduced correspondingly.

The weeding-out of weak firms through bankruptcy proceedings may also not be credible. This would be the case if the number of bankruptcies

[2] For a detailed overview of the issues and the arguments in favour of private ownership, see the annex in EBRD (1993).

were very large. Substantial changes in relative prices and the sudden exposure to foreign competition of formerly protected enterprises have indeed made many of them unprofitable. To some degree the impact of these changes has been alleviated by depreciated real exchange rates, but there is a limit to the fall in real wages that can be endured. Therefore stringent bankruptcy regulations can be expected to lead to a sudden wave of bankruptcies, as was the case in Hungary in 1992. The associated job losses, coming on top of the declines in employment of the last few years, might be so great as to threaten the stability of the Government. Faced with a choice between sudden declines in employment and a relaxation of bankruptcy regulations or other means of support, governments are likely to opt for the latter. The limited capacity of commercial courts to cope with bankruptcy cases may further undermine the plausibility of applying this instrument on a large scale. For these reasons, relying on bankruptcy alone to improve corporate control may not appear credible.

What central Europe needs most is effective management able to restructure firms and adapt them to the new market environment. The speed with which such management is likely to emerge is related to the ownership and control structure of firms. In firms with a wide shareholder base the control of management becomes a public good. Each individual owner reaps only a minor part of the benefits his monitoring activities may generate, leading to an undersupply of monitoring. As a result, firms with weak control structures are more likely to erode shareholder wealth and to face bankruptcy. Without effective management and strongly expressed owner interests, bankruptcy proceedings may end in liquidation rather than a restructuring of the firm's obligations. Effective enterprise control would reduce these costs.

Policies to support the emergence of effective corporate governance are therefore required during the transition. Market economies have developed different answers to the problem of controlling management, although none of them is without weaknesses.[3] It can be said that there are essentially two main types of corporate control mechanisms. One relies on widely dispersed share ownership, combined with highly liquid securities markets and a sophisticated market infrastructure. Share price movements and the potential threat of takeovers provide here the

[3] The issues involved are discussed from both a historical and theoretical point of view by Bisignano (1992).

disciplinary forces for management. This type of control is widespread in the United States and the United Kingdom. The other model is characterised by concentrated share ownership. Shareholders with a substantial stake in a firm can reap a large enough portion of the fruits of effective monitoring to make such activity worthwhile. Large deviations by management from the path of maximising the value of the firm can be detected by shareholders, which can then induce the necessary corrections, including the replacement of management. In many countries this monitoring function is carried out partly by banks which hold the firm's debt and have the additional advantage of privileged access to information. Shareholder control with a large role for banks is predominant in continental Europe and Japan.[4]

Clearly, actual systems of corporate control are less distinct than this stylised picture suggests, as a number of mechanisms to monitor and control management are usually employed in combination and there is a wide continuum of institutional arrangements within a given country and across countries. Nonetheless, this stylised view of the Anglo-Saxon and the continental European and Japanese approaches is often used to focus discussion on the essential advantages and disadvantages of each model.

Most observers have concluded that corporate control through anonymous securities markets is, for the foreseeable future, not a realistic option for eastern Europe.[5] Securities markets, in their view, are likely to emerge only slowly in eastern Europe, and it will take even longer until they are liquid and effective enough to play a major role in corporate control.[6]

[4] For a more detailed discussion see Franks and Mayer (1992) and Prowse (1994).

[5] See for example Tirole (1991), Corbett and Mayer (1991), Mayer (1992), Mayhew and Seabright (1992), Stiglitz (1992), Phelps et al. (1993), Blommestein and Spencer (1993). The EBRD (1993) has argued the same in its 1993 annual report.

[6] Some have argued further that even if there were a realistic possibility of instituting liquid securities markets in eastern Europe, the resulting increase in the liquidity of investments could have a negative effect because it would lessen the incentives for investors to monitor their investments. This point has been made by Phelps et al. (1993, p. 33): "All of this means that there is a rather direct trade-off between the appearance of robust stock markets in eastern Europe, which play the function of providing impersonal valuations of enterprises and of assuring the liquidity of investment (hence making exit more easy), and the development of financial institutions with strong incentives to become involved in the monitoring of company performance .... the increased liquidity associated with the quick development of a stock market may come at a very significant cost in terms of the effectiveness of the restructuring process". On a more fundamental level, there may well be a trade-off between the benefits of commitment through longer-term loans and the higher degree of competition allowed by shorter-term investments and loans, discussed by Mayer (1988) and Hellwig (1991).

The apparently beneficial role of banks in continental Europe and Germany has prompted some analysts to suggest that financial system reform in eastern Europe should aim at strengthening banks and transforming them into effective monitors of enterprises and active agents for corporate restructuring.[7] Phelps et al. (1993) and EBRD (1993) are rather sceptical about whether existing banks in eastern Europe can already play such a substantial role in corporate governance, pointing to the weaknesses of existing banks: symbiotic relationships with enterprises, lack of expertise in credit evaluation, absence of modern accounting systems and the legacy of bad debts. They conclude that it might be better to rely on new banks yet to be created or to emerge through the gradual widening of the financial services provided by investment funds. Is their scepticism justified? Hrncír (1994) does not seem to believe so, noting that "the above line of reasoning seems to underestimate the adjustments taking place both within the existing banks and in their environment". The following sections present an analytical view of the banking systems in former Czechoslovakia, Hungary and Poland, aimed at gathering evidence on their strengths and weaknesses.

2. Are banks able to control enterprises?

Under central planning the rudimentary banking system was in effect part of the budget. Whether enterprise investments were financed by budgetary grants or by bank loans was almost immaterial, as revealed for example by the treatment of repayment difficulties: a common means of resolving them was to reduce the – under central planning – enterprise-specific turnover tax. A major element of the transformation of the formerly planned economies to a market economy was the creation of a two-tier banking system. The commercial portfolios of the former monobanks which combined central and commercial banking functions were distributed among newly created commercial banks according to sectoral (Hungary) or regional criteria (Czech and Slovak Republics, Poland). Over the last few years banks have started to develop credit

[7] See for example van Wijnbergen (1992) and Corbett and Mayer (1991). This approach was consciously applied in the Financial Sector Adjustment loan to Poland by the IBRD in April 1993. See also van Wijnbergen (1993) for a detailed description of the approach taken.

appraisal and approval methods, to systematically evaluate their portfolios, and more generally to develop the banking skills and monitoring capabilities that are characteristic of banks in market economies. Is this process sufficiently advanced to allow banks now to play a larger role in corporate governance and the restructuring of enterprises? An important part of the answer is related to historical legacy of bad loans, which impair banks' balance sheets and may distort credit decisions. Some indications may also be gathered by looking at changes in bank behaviour. No less important are the legal regulations which define and circumscribe banks' activities.[8]

2.1 Non-performing loans

The appearance of a large portfolio of non-performing loans was to be expected once the reform of eastern European economies was under way. With the change to a market economy, the entire economic logic on which central planning had relied was suddenly overturned. Instead of the plan, consumer demand was now to hold sway and transmit its signals through liberalised prices to enterprises. Imports which had formerly been allowed on a needs basis only were suddenly given free access to domestic markets. Captive export markets withered away with the collapse of the CMEA trading system. Large changes in relative prices, strong import competition and the loss of export markets added up to an economic shock which could not have been anticipated in either its timing or extent and which made many enterprises unprofitable and unable to service their obligations. Such a transformation of the economic environment would have put any banking system under severe strain. Much smaller economic shocks stemming from financial market liberalisation have led to substantial banking problems in a number of industrialised countries. In Norway, Sweden and Finland, for example, problem loans

[8] The development of the banking sectors up until the end of 1991 is described by Catte and Mastropasqua (1993) and Thorne (1993). Buch (1993) surveys more recent developments. Overviews of the development of the banking sector in Hungary are provided by Nyers and Lutz (1992), Sagari and Chiquier (1992), Vittas and Neal (1992), Varhegy (1994), Estrin et al. (1992) and OECD (1993). The banking system in the Czech and Slovak Republics is analysed by Vojtisek (1992) and OECD (1991), while recent developments in the Czech Republic are in Hrncir (1993,1994) and OECD (1994). Developments in Poland are surveyed by Wyczanski (1993) and Kokoszczynski (1994) as well as OECD (1992). A concise overview of the issues is to be found in Dornbusch (1991).

Table 1

Non-performing loans (1992)

Items	Czechoslovakia	Hungary	Poland
Non-performing loans[1] as % of total loans			
National source[2]	19	28	26
IMF estimate[3]	15–20	15–20	25–60

[1] Defined as bad or doubtful, but excluding substandard loans. [2] Czechoslovakia: Czech Republic only, including substandard loans at the end of 1992 (Hrncír, 1993); Hungary: National Bank of Hungary Annual Report, non-performing loans as percentage of credit to enterprises; Poland: mid-1992 in Reuters 23.11.1992. [3] Calvo and Kumar (1993). In the case of Czechoslovakia, they emphasise "considerable uncertainty". For Poland data are for seven commercial banks.

rose to between 12 and 17% of total loans at the end of 1992 (BIS (1993), p. 174).

Non-performing loans in banks' portfolios did indeed emerge in the wake of economic transformation and substantial dislocations. Initially, however, they could not be identified easily because of inadequate accounting standards, the absence of auditing and tax rules which discouraged provisioning. Although the situation has since improved considerably, uncertainties remain. Moreover, once many enterprises are illiquid or insolvent they "contaminate" the economic environment if they are allowed to remain in operation because bankruptcy rules are either weak or not enforced. As they do not pay suppliers, these in turn cannot pay their suppliers and as payment arrears spread so does the difficulty of distinguishing good from bad enterprises. Subject to this important qualification, estimates for non-performing loans are shown in Table 1. According to national data, about a third of loans are non-performing, although variations between banks are considerable and average figures have to be interpreted with caution.[9] The IMF estimates are provided for comparison and serve to highlight the difficulty of determining the precise amount of problem loans (Calvo and Kumar, 1993).

[9] Available information on the situation of individual banks is consistent with the total figures provided in the table. For example, the Hungarian Credit Bank and the Budapest Bank both show non-performing loans of 25-30% of total lending at the end of 1992 according to information published in specialised Hungarian newspapers. In Poland, more than a third of the loans of the state commercial bank Wielkopolski which, owing to its relatively good portfolio position, was privatised in 1993, were non-performing loans at the end of 1992.

Despite the high proportion of non-performing loans, the banking systems appear to show rather satisfactory capital-to-asset ratios, which is surprising given the generally low degree of provisioning. The discrepancy can be explained in part by the different accounting standards on which these figures are based. The amount of non-performing loans given in the table is on an international accounting standards (IAS) basis, whereas capital-to-asset ratios are generally provided on national accounting standards. The differences can be substantial. For example, Hungarian Banking Supervision figures showed the capital-to-asset ratio of the banking system to be around 7% in mid-1993, while at the same time a programme to recapitalise the major banks was in preparation (see below) in order to raise their ratios from –15% to 0%.

What stands out from this glance at the health of banks' balance sheets is that many of them are clearly weighed down with large amounts of non-performing loans. Banks in such a precarious situation are not able to control effectively the management of enterprises they have lent to. Their large exposure to clients makes them vulnerable, as the bankruptcies of clients may dramatically expose their weak capital base. Latent or overt losses affecting banks can also have serious implications for the economy as the "stock" problem of bad loans is translated into a "flow" problem of credit misallocation. Banks are under pressure to lend to distressed borrowers at the expense of sounder customers by capitalising accrued but unpaid interest. As a result, the emerging private sector may be starved of funds.

Large portfolios of non-performing loans tend to perpetuate the symbiotic relationships between enterprises and banks which were inherited from the past (Dooley and Isard, 1991). They also reduce banks' ability to play a more active role in corporate governance and enterprise restructuring. It is therefore of particular relevance to see how problem loans have been dealt with.

Countries have addressed problem loans and the resulting weak capital bases in various ways and have sometimes changed their approach over time. The issue became more acute in 1992 owing to deteriorated economic conditions and the tightening of the regulatory environment. This paper does not summarise or discuss the respective merits and drawbacks of the different proposals which have been advanced on how to deal with problem loans; there are numerous suggestions in the

literature[10] and convenient summaries do exist, for example in Schmieding and Buch (1993). Instead, we have endeavoured to understand the general approaches countries have followed and to examine whether a permanent solution has been found and, if so, what this implies for corporate governance.

Despite the variety of approaches, which are described in detail in the box, certain patterns are discernible in the way countries have set about recapitalising banks and addressing non-performing loans. Table 2 attempts a simple classification by type of loans and approach. Several points can be made:

- The countries which had to deal with a well-defined stock of old loans carrying low interest rates[11] have resorted to budgetary interest subsidies to make these loans viable as a counterpart to liabilities yielding a market-related rate of return.

- Where there were problem loans which could be identified clearly, either because they were old loans with low interest rates (Hungary and Czechoslovakia) or because they could be identified as non-convertible currency assets and liabilities of the foreign trade bank (Czechoslovakia), countries have preferred to hive these loans off the banks and have put them into separate organisations, at least for a while.

- Where such a distinction has not been possible because the non-performing loans were made after the reform process started, countries have employed two different approaches. Czechoslovakia and Poland have preferred to recapitalise banks and let them deal with the loans themselves. Hungary, which until mid-1993 had shown a clear preference for hiving bad loans off into a separate organisation, has since also opted for the recapitalisation route.

- Except for an early and limited attempt in 1991 to deal with what then appeared to be a small amount of problem loans (inherited from the

[10] Early papers were by Hinds (1990) and Brainard (1991). More recent proposals include Begg and Portes (1993), Bruno (1992), Caprio and Levine (1992), Corbett and Mayer (1991), Hardy and Lahiri (1992), Lane and Folkerts-Landau (1992), Levine and Scott (1992), Long (1992), Marrese (1992), Mayhew and Seabright (1992), Stiglitz (1992), Schmieding and Buch (1992), van Wijnbergen (1993) and Phelps et al. (1993).

[11] Czechoslovakia and Hungary. Old loans in Poland were wiped out during the 1989 hyperinflation.

Table 2

How problem loans have been addressed

Item and country	Hiving off of problem loans and corresponding liabilities into a separate institution	Hiving off of problem loans into a separate institution and swapping for government bonds	Leaving problem loans with banks combined with a capital injection	Recurrent budgetary subsidies for low-interest loans Government	guarantee for problem loans
Old low-interest loans (housing, preferential credit, inventories)					
Czechoslovakia	●			●	
Hungary		●		●	
Poland			eliminated through hyperinflation		
Other non-performing loans:					
Pre –1993					
Czechoslovakia			●		
Hungary		●			●
Poland			none		
In 1993/94					
Czechoslovakia	●		●		
Hungary		●	●		
Poland			●		

Source: See box on pp. 20–22.

past) in Hungary, no country has resorted to the use of government guarantees for problem loans. All have preferred more transparent measures.

Whichever way is chosen to deal with undercapitalised banks, the final measure of success or failure must be whether the problem of non-performing loans has been solved in a durable manner. This depends in the first instance on whether banks' capital has increased sufficiently to allow them to sever the symbiotic lending relationship with large clients. It also depends on finding a solution to the problem of enterprises which had previously relied on the continued flow of credit to survive. Such loans had, in the past, been in effect a substitute for fiscal subsidies. The termination of this lending would push many enterprises into bankruptcy and perhaps liquidation, leading to job losses. This requires either a broad consensus on the need for major adjustment in the enterprise sector or, if the impact on unemployment is considered excessive, the introduction of alternative support facilities for enterprises. In the absence of either a political consensus or of alternative means of supporting unviable enterprises, the political pressure on banks to lend will remain strong and perhaps irresistible as long as banks are not privatised.

Table 3

The cost of bailing out banks

A worst-case scenario (as a percentage of GDP, 1992)

Item	Czechoslovakia	Hungary	Poland
Credit to enterprises	74	28	21
Non-performing loans (% of loans to enterprises)	30	30	30
Estimated annual interest cost of			
Fully recapitalising banks	2.8	2.1	2.3
Measures taken by 1993	2.4	1.5	0.6

Note: This scenario is based on simple back-of-the-envelope calculations, assuming that provisions and collateral are zero and that banks have no capital against their loans to the enterprise sector. This can be viewed as a worst-case scenario. Non-performing loans are assumed to be 30% of total loans to enterprises, and the interest rates used for converting recapitalisation costs into annual payments are 10% for former Czechoslovakia, 20% for Hungary and 30% for Poland. The annual interest costs thus calculated overstate the budgetary costs to the extent that interest income is taxed, which can reduce the net costs by up to two-fifths. Enterprise credit is taken from monetary surveys at the end of 1992.

Measures to deal with problem loans

Czech and Slovak Republics

Measures taken by the end of 1992

- Long-term loans at low interest rates (loans for housing, nuclear power and newly-married couples) have been receiving a budgetary subsidy covering the difference between the loan rate and the discount rate since 1990.

- Perpetual inventory loans carrying a fixed interest rate of 6% accounted for more than 40% of the total credit granted by Komerční Banka and General Credit Bank of Bratislava in 1990. When interest rates rose to above 20% in 1991, these loans threatened their solvency as their (unweighted) capital-to-asset ratio was only 1.5%. In 1991, Kčs. 110bn out of a total of Kčs. 180bn of these loans was transferred to a newly-created agency (consolidation bank) and the loans were rescheduled with a maturity of eight years and an interest rate of 300 basis points over the discount rate.

- To increase banks' capital base, the National Privatisation Fund issued Kčs. 50bn worth of bonds in 1991 and handed these over to the commercial banks free of charge. Kčs. 12bn were interest-free and used to increase banks' capital. The remainder carried a coupon of 200 basis points over the discount rate and had a maturity of five years, intended to allow banks to write off bad loans made before 1990 to enterprises with good prospects. Repayment of the Kčs. 12bn part is in currency, while the remaining Kčs. 38bn of the bonds will be repaid in the form of shares in privatised enterprises.

- Together, these measures improved the capital-to-asset ratio (national definition) of the two commercial banks to 4.5 at the end of 1991 (6 if general reserves are included).

Measures taken in 1993

- In June 1993, the Czech and Slovak Ministries of Finance took over the risks associated with the Kčs. 95.5bn of the Foreign Trade Bank's foreign assets and Kčs. 74.4bn of its liabilities incurred in non-convertible currencies during the period of central planning. In December 1993, the Czech and Slovak Governments injected Kčs. 4.05bn into the bank and transferred Kčs. 40bn of bad and doubtful debt into separate "collection units", raising the capital adequacy ratio to 6.25%.

Hungary

Measures taken by the end of 1992

- Low-interest housing loans provided homeowners with a subsidy equivalent to 2½% of GDP in 1989. These loans were transferred to a special housing loan fund in 1989 and the savings bank (OTP) was given government bonds bearing market interest rates instead. In 1991 households were given a choice between having half of the debt written off and paying market interest rates on the other half or of having the subsidy on the total loan gradually withdrawn over several years. Most households opted for the first solution and also paid a substantial proportion of their mortgages early.

OTP losses due to the write-off were covered with government bonds. In 1992 the housing loans were returned from the housing loan fund to the OTP with a government guarantee and budgetary subsidies to cover the difference compared with market interest rates.

- In 1991, the Government guaranteed bad loans made before 1987, totalling Frt. 10.5bn, much of which had gone to coal mines. In addition, it was agreed that banks would pay only very small dividends over the next years, enabling them to gradually improve their capital bases. Privatisation was expected to lead to a further capital injection.

- New accounting rules and banking and bankruptcy laws in 1992 led to a dramatic increase in non-performing loans. The Government's response was a credit consolidation scheme, the major features of which are described below:

– The Ministry of Finance proposed to banks that bad loans extended to resident enterprises before September 1992 be swapped for government bonds. Banks were to receive twenty-year government bonds with a variable coupon at market interest rates. The bond/debt replacement ratio was set at 50% for loans made before 1992 and 80% for loans made during 1992. Debt of enterprises designated by the State Asset Holding Company and the State Property Agency was fully replaced by government bonds.

– 14 banks and 60 savings cooperatives participated in the scheme. A total of Frt. 120.5bn of bad debts was swapped for Frt. 98.8bn worth of government bonds.

– The bad debts were placed in the Credit Consolidation Fund, which is managed by the Hungarian Investment and Development Corporation (MBFRt). The latter received a banking licence in 1993.

– Involved in the scheme was the debt of 1,885 companies, 116 of which were engaged in bankruptcy proceedings and 549 were being liquidated. 110 companies, of which 85 were bankrupt or undergoing liquidiation, accounted for 75% of the swapped bad debts.

Measures taken in 1993

- Most of the details of the 1992 consolidation scheme were decided during the first half of 1993.

- In December, a bank recapitalisation programme was voted by parliament to bring the capital adequacy ratio of the banks to 0% by the end of 1993 and to increase it further to 8% in the course of 1994. The banks received government bonds worth Frt. 114.4bn in 1993 in return for an increased equity stake for the Government. An additional capital injection or government guarantees are planned for 1994.

Poland

Measures taken by the end of 1992

- The nine state-owned commercial banks were instructed in 1992 by their owner, the Ministry of Finance, to create debt work-out departments and assign bad debts to them, refrain from lending to borrowers whose loans had been classified as doubtful and unrecoverable and to start evaluating all deliquent customers with a view to

taking action against them. By the end of the year, each work-out department had about fifteen staff, though not all bad debts had been assigned to them. In September the Ministry established a monitoring unit which evaluates relations between banks and major problem borrowers on a monthly basis.

Measures taken in 1993

- A major effort was made in 1993 to solve the problem of non-performing loans, accelerate the restructuring of enterprises and improve the capital bases of banks through the "Enterprise and Bank Restructuring Programme" which recapitalises banks by infusing fresh money and provides incentives to restructure debt. The support of the trade unions has made it possible to include provisions for expediting the commercialisation and privatisation of large state-owned enterprises. In particular:
  - The capital-to-asset ratio of nine major banks has been raised to 12% by issuing government bonds to banks free of charge. The total value of these bonds is 21 trillion zloty (1.4% of 1993 GDP). They attract interest at market rates, have a maturity of fifteen years and are to be repaid in equal instalments, starting in 1994.
  - State-owned commercial banks have been granted the right to conduct "conciliation procedures", Chapter 11-type bankruptcy procedures under Polish bankruptcy law, without the involvement of courts for a period of three years. Creditors holding at least 20% of a firm's debt can initiate this procedure and force other creditors to agree to restructuring programmes, provided they have been accepted by creditors holding 50% of the firm's debt. The Treasury has to give up its claims on a pari passu basis.
  - Creditors holding 30% of enterprise debt can convert it into equity, triggering the fully automatic transformation of state-owned enterprises into joint stock companies (without the works council being consulted). Creditors can request the transformation without entering into debt/equity swaps (at the end of 1992 Poland had 8,200 state-owned enterprises and only 770 commercialised ones).
  - Banks are given one year to deal with bad debt. If the debtor is not viable or does not agree to a restructuring plan, banks have to file for bankruptcy or sell the bad asset.
  - Trade union support for the programme was sealed with the signing of the enterprise pact in February 1993. Works councils gave up their right to block the transformation of state enterprises in return for receiving 10% of a firm's shares upon commercialisation and positions on the management and supervisory boards.

- The Government will retain ownership of key enterprises in the energy, mining, steel and defence sectors, where privatisation will be on a case-by-case basis.

- A special fund will deal with "sensitive" enterprises administered by the Council of Ministers and managed by the Industrial Development Agency. Annual budget ceilings and harsh conditions reduce the incentive for enterprises to access this "lifeline".

- The Government is given incentives to privatise banks through the Polish Bank Privatisation Fund, which was created in December 1992 as a result of several donor countries shifting the contributions they had made earlier to the stabilisation fund for the zloty (which was never used). Conditional upon an IMF standby programme and an IBRD Enterprise and Financial Sector Adjustment Loan, this fund will service the Treasury bonds issued to banks once they are privatised.

- Through restructuring and liquidation the programme is likely to affect 2,000 state-owned enterprises employing more than half a million workers.

Has the stock problem of non-performing loans been solved with the measures taken? It is in the nature of such a question that it cannot be answered definitely. A rather crude back-of-the-envelope calculation may nonetheless put the problem into perspective and is summarised in Table 3. This calculation presents a kind of worst-case scenario. Non-performing loans are presumed to lead to a full loss and not to be backed by any provisions. The loans are furthermore assumed not to be backed by any capital. A full recapitalisation must then replace all non-performing loans with government bonds and, in addition, inject fresh capital. The annual interest cost of the operation is taken as an estimate of the recapitalisation cost. The larger the amount of credit to enterprises as a percentage of GDP, the larger the potential problem is likely to be. In Czechoslovakia, enterprise debt to banks is a high 74% of GDP, compared to 28% in Hungary and only 21% in Poland. Broadly in line with national estimates, where these are available, the calculation assumes that non-performing loans amount to 30% of total credit to enterprises. After the separation of the Czech and Slovak Republics, this figure can be presumed to overstate the problem in the Czech Republic and understate it in the Slovak Republic. Indeed, data for the Czech Republic alone show that non-performing loans account for roughly a fifth of total enterprise loans, with a provisioning level of a quarter (Hrncír, 1993).

The annual interest burden of this worst-case scenario is large, ranging from just over 2% of GDP in Hungary to nearly 3% of GDP in Czechoslovakia. It is useful to compare this rough estimate with the actual cost of the measures taken so far. This gives some idea, in a necessarily highly preliminary way, of the extent to which the problem has been solved. The annual interest costs of the various recapitalisation measures in Hungary, including the ones planned for 1994, are about 2% of GDP. The cost of the 1993 recapitalisation in Poland is likely to be of the order of 0.6% of GDP. Directly comparable figures cannot be calculated for Czechoslovakia, but a reasonable estimate would probably be of the order of 2½%.

Clearly, these crude comparisons should not be taken literally. Simplifying assumptions had to be made, some of which may be over-pessimistic. For example, provisions have increased recently and the stabilisation of output may indicate that a larger proportion of the problem loans will be recoverable than previously thought. If, however, these estimates are a reasonable approximation of the true situation, they would suggest a rather differentiated picture. In former Czechoslovakia,

the problem of non-performing loans appears close to solution. However, such an aggregated description for the country as a whole may hide large differences between the Czech and Slovak Republics. Indeed, the figures in Hrncír (1994) suggest that banks in the Czech Republic are relatively sound and can deal with any remaining problem loans on an ongoing basis through provisioning. The negative equity of the major Hungarian banks was eliminated by the end of 1993. They may achieve a relatively sound capital-to-asset ratio during 1994, depending on the measures taken. By contrast, non-performing loans appear to continue to be a major problem in Poland.

What has been the reaction of the authorities? In Hungary, recapitalisation of the major banks is under way. Its aim is to increase the capital-to-asset ratio of major banks from 0% at the end of 1993 to 8% in the course of 1994. The precise measures and the details of how they are to be implemented, however, have still to be worked out. In Poland, the National Bank has publicly stated that, in addition to the bank recapitalisation undertaken in 1993, further capital infusions are necessary, in particular in the cooperative banking sector. Its preliminary estimates of the amounts required are more than twice the amounts made available in 1992. Only in the Czech Republic are the authorities confident that banks can outgrow the problem through provisions and write-offs, provided output does not decline further and most enterprises can be restructured rather than liquidated.

Concerning the flow of credit to major problem debtors, only Poland has taken measures to provide alternative means of supporting large loss-making enterprises which cannot be liquidated for social or political reasons. The Enterprise and Bank Restructuring Law, passed in early 1993, provides a special facility to give support, subject to annual budget ceilings, to enterprises which are willing to enter the facility. The conditions for doing so, however, are harsh and involve major adjustment on the part of enterprises. No comparable measures have been taken in the other countries. Hungary has concentrated the ownership of strategic enterprises – whether profitable or loss-making – under the State Asset Holding Company. It is unclear, however, whether problem enterprises will be supported through cross-subsidisation or other means. The Czech Republic has been most reluctant to extend some kind of safety net under enterprises and has concentrated instead on making mass privatisation work, signalling its commitment to let the markets give their verdict on

the prospects of enterprises. This commitment could, however, be tested once the newly privatised companies are no longer sheltered from the bankruptcy law.

2.2 Bank behaviour

The regulation and supervision of banks was improved substantially in 1992 (Section 3). How have banks reacted to the new legal framework? One possibility would have been to continue lending to their old customers, perpetuating the symbiotic relationship that had developed over time. Whether banks have actually done so can only be answered by looking at detailed corporate accounts, which are not generally available. There is, however, another, more indirect way of gathering evidence of bank behaviour by examining whether banks have capitalised interest payments due from enterprises by comparing them to enterprise borrowing. Should net borrowing by enterprises exceed net interest payments, then interest capitalisation would clearly have been an important macroeconomic phenomenon and enterprises would have received net funds from banks. We would interpret such a finding as indicating that bank lending has continued to be dominated by passive, accommodating behaviour. Conversely, higher net interest payments than net borrowing would suggest that on aggregate enterprises have not received new funds but have either accumulated arrears outside the banking system or paid banks more in interest charges than they received in new loans.

Estimates of the actual amount of interest capitalisation are shown in Table 4. Enterprise net borrowing is calculated from monetary surveys by netting (exchange rate adjusted) changes in assets and liabilities. Net interest payments are estimated by applying average interest rates for enterprise loans and deposits to outstanding stocks. The ratio between the two indicates the degree to which interest has been covered by new bank loans. Except for Poland in 1991, enterprises have paid banks more in interest than they have received in new loans in recent years. While interest capitalisation may have been important for some enterprises, clearly it was not for the sector as a whole. The development of the ratio is interesting and provides a perspective on the change in bank behaviour. The increase of the ratio in 1991 could be interpreted as indicating a more accommodating lending stance in the wake of large shocks. In 1992, however, bank lending to enterprises as a proportion of interest due

Table 4

A measure of interest capitalisation

Net enterprise borrowing from banks as a percentage of net interest due

Country	1990	1991	1992
Czechoslovakia	67	83	38
Hungary	25	30	−51
Poland	82	101	16

Sources: BIS calculations based on monetary surveys and interest rates of the State Bank of Czechoslovakia, the National Bank of Poland and information on the net change in the financial position of enterprises (including bonds) provided by the National Bank of Hungary. Net enterprise borrowing is estimated by netting changes in assets and liabilities, adjusted as far as possible for exchange rate changes and changes in stocks not due to flows.

declined sharply and actually turned negative in Hungary, where enterprises repaid part of their loans.

A similar picture emerges if we focus on net enterprise borrowing from domestic banks (Table 5). Net lending to enterprises expanded during 1991. This accommodative stance was, however, abruptly reversed in 1992, when net lending to enterprises in Poland declined by 7 percentage points of GDP and enterprises actually reduced their outstanding liabilities in nominal terms in Hungary. Lending declined, too, in Czechoslovakia, but nonetheless remained above its 1986–89 average.

One interesting question is whether this evidence signals a more general move towards harder budget constraints. If tighter bank lending behaviour is seen by market participants as an isolated attempt by banks

Table 5

Net enterprise borrowing from domestic banks

As a percentage of GDP

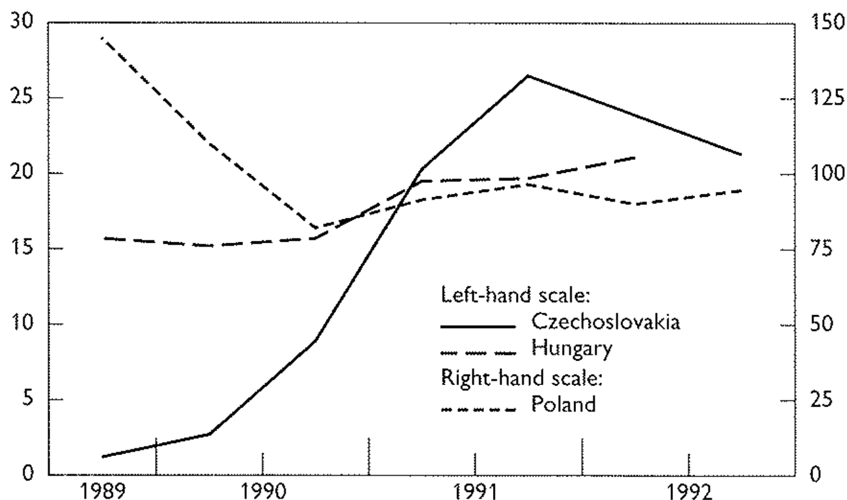
Country	1986–89	1990	1991	1992
Czechoslovakia	−0.1	2.4	6.4	2.9
Hungary	1.2	1.1	1.6	−2.5
Poland	4.8	7.3	8.0	1.1

Source: Estimates based on monetary surveys, corrected insofar as possible for stock adjustments not related to financial flows and changes in the exchange rate. Data on the "net change of the financial position" in Hungary are taken from the bulletin of the National Bank of Hungary.

Graph 1

Inter-enterprise credit

As a percentage of bank credit to enterprises



Source: BIS estimates based, inter alia, on Hrncír (1993), Calvo and Coricelli (1993), Schmieding and Buch (1992) and the Central Statistical Office of Poland (Statistical Bulletin, various issues).

to improve their position which ultimately lacks government and parliamentary support, then enterprises might try to avoid the pressure by relying more on other means of credit, namely inter-enterprise and tax arrears. This would be the case, for example, if unemployment was expected to become the overriding concern of political decision-makers, inducing them to underwrite enterprise losses and liabilities. In contrast, if the tightening of budget constraints was perceived to be economy-wide and to enjoy general support, then inter-enterprise arrears would be expected to stabilise as enterprises find it more difficult to avail themselves of such credit. Data on inter-enterprise credit suffer from numerous shortcomings. Coverage is partial, the means of collecting these statistics has often changed over time and definitions are not comparable between countries, with Poland for example reporting normal trade credit and arrears together and Czechoslovakia showing only payment arrears. Therefore Graph 1, which shows the development of inter-enterprise credit by combining data from different sources, should be interpreted with caution. It is worth noting, though, that the

trend in all countries is towards a stabilisation of inter-enterprise credit, suggesting that the development of tighter budget constraints is not confined to the banking sectors, but is part of a more general change in the economy. The stabilisation shown in the graph is also consistent with anecdotal evidence. Another piece of evidence documenting changed bank behaviour is the widening of the spread between lending and deposit rates (Graph 2).

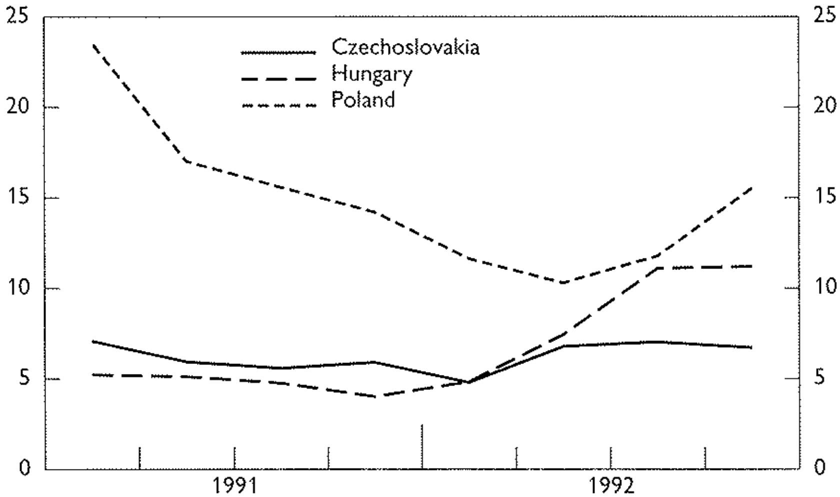
How should we interpret these changes? A priori, several interpretations would seem consistent with the data. Reduced lending to enterprises could reflect a more prudent attitude to lend on the part of banks, resulting from the new market environment, new banking laws and regulations which have revealed the extent of non-performing loans to a much greater degree than before. In this view, the complete transformation of the economic system has rendered obsolete information which banks had previously accumulated on enterprises. At the same time, it has increased dramatically uncertainties and market risk. Banks which behave in a prudent way can be expected to reduce lending as the optimum level of credit rationing (Stiglitz and Weiss, 1981) increases with reduced informational capital and increased uncertainty. An economy-wide credit crunch may result.[12] The increased spread between lending and borrowing rates may, in this case, reflect the attempt by banks to increase income in order to generate the provisions necessary to cover non-performing loans.

Another interpretation of reduced bank lending to enterprises focuses on budget deficits. The growing financing needs of government have, given the state of development of securities markets in eastern Europe, to be financed mainly by the banks. Attractive interest rates on Treasury bills may have induced banks to lend more to government at the expense of enterprises. The need to finance budget deficits may also have led to an increase in the implicit taxation of financial intermediation through minimum reserve requirements.

Reduced lending to enterprises may also reflect low credit demand. Enterprises may have considered interest rates and the level of economic uncertainty too high to embark on ambitious investment projects.

[12] Asymmetric information requires information-gathering and monitoring services. Real disturbances such as exogenous shocks or major policy changes may reduce the effectiveness of this information processing because the banks' capacity to screen borrowers is limited and exacerbated furthermore by the reduction of the net worth of borrowers. Gale (1992) has shown this can result in a no-lending equilibrium in general, and Uhlig (1992) shows in a stylised model of financial markets in eastern Europe that a low-growth, no-intermediation equilibrium can result.

Graph 2
The interest rate spread*
Quarterly averages, in percentages



* Lending minus borrowing rate.
Source: Central bank bulletins.

Investment has indeed declined, although it remains relatively high by the standards of many market economies.

If we are to judge whether bank behaviour has changed and thus obtain some indication of banks' readiness to take on a larger role in the corporate governance and restructuring of enterprises, we need to distinguish between these interpretations. This is what the following paragraphs try to do.

For government treasury departments the transformation to a market economy has led to the disappearance of low-interest financing options and the elimination of interest-free overdraft facilities at the former monobank.[13] Relatively independent central banks have taken their place and the laws governing them severely restrict the amount of finance they can provide to governments directly. This has forced governments to turn to commercial banks in order to meet their financing needs. They have

[13] On the issue of government finance under central planning and the changes during the transition, see Cheasty (1992).

started to issue Treasury bills with very short maturities, most of which are sold to commercial banks. While the emergence of widely traded government paper has been beneficial to the development of securities markets,[14] the amount of financing sought by government may have constrained the amount of funds available to the dynamic and growing segment of the enterprise sector. There are two ways in which it may have done so. The first relates to the classic crowding-out argument. By absorbing a large part of domestic credit the amount of credit available to the economy is correspondingly diminished. The second way in which financial intermediation may be impeded is the taxation of banks. Financing requirements may have pressed governments to raise taxes on banks or at least to keep them from falling, resulting in financial repression and disintermediation.

In the wake of the systemic transformation, expenditure pressures on government have increased while tax revenues have declined.[15] As a result, deficits in Hungary and Poland have widened rapidly, reaching about 7% of GDP in 1992 (Table 6). Czechoslovakia, in contrast, was able to contain its fiscal deficit. Increasing deficits in Hungary and Poland have led to a growing part of domestic credit being absorbed by the Government. Higher fiscal deficits and a higher government share in total credit may create a presumption of crowding out, but the growing demand for funds could well have been met by a larger supply either because savings were rising or because other borrowers were demanding less. The development of household saving is measured by changes in financial wealth[16] (Table 6). Household saving has risen markedly in Hungary and Czechoslovakia in recent years. In Poland, the picture is less clear because it is influenced by the hyperinflationary period of 1988–89. Compared to these years and the first year of stabilisation, household saving has declined but it rose in 1992 to a higher level than in 1986–87.[17]

Taking the development of budget deficits and household saving together, developments in the three countries have been markedly

[14] The issuing of government paper has greatly supported the emergence of securities markets by providing benchmark interest rates and making paper which, unlike shares, is actively traded available to the new stock exchanges. It has also increased the range of monetary policy instruments by allowing central banks to conduct open market operations.

[15] The reasons do not concern us here. A concise summary of the major causes can be found in BIS (1992), while a more detailed account is given in the various papers in Tanzi (1992).

[16] With adjustments being made for changes in stocks which do not reflect changes in flows, like the transfer of old housing debt from households to the Government.

[17] For a longer-term perspective on saving behaviour in central Europe, see Andersen (1992).

Table 6

Household net financial saving and government use of saving

As a percentage of GDP

Country	1986–89	1990	1991	1992
Household net financial saving				
Czechoslovakia	2.2	–0.1	5.9	5.3
Hungary	0.5	3.9	10.3	9.0
Poland	7.4	11.0	5.0	6.6
General government deficits				
Czechoslovakia	1.3	–0.1	2.0	1.6
Hungary	2.2	–0.4	4.6	7.5
Poland	2.1	–3.1	6.5	6.8
Credit to government (% of total domestic credit)				
Czechoslovakia	–11.8	8.5	6.6	2.9
Hungary	46.8	42.4	46.2	50.9
Poland	9.1	–1.5	31.3	43.3

Sources: Estimates based on monetary surveys, corrected insofar as possible for stock adjustments not related to financial flows and changes in the exchange rate, and BIS data bank.

different. In Czechoslovakia, small budget deficits combined with increased household saving have meant that the potential supply of funds for the enterprise sector has risen. Higher credit demand from the public sector in Hungary appears to have been met largely by increased household saving. Only in Poland has the widening of budget deficits appeared to have led to some crowding out.

Enterprise borrowing fell in 1992. If this decline reflected a large government borrowing requirement which reduced the availability of credit to enterprises the interest rate on government debt would – other things being equal – be expected to rise in comparison with that on loans to enterprises, as governments have to offer conditions which induce banks to shift lending in their favour. In Hungary, the converse happened in 1992. Interest rates on government paper declined relative to those on lending to enterprises. This is inconsistent with the crowding-out hypothesis and suggests that other factors played a part. In Poland, the interest spread on bank lending to enterprises and bank lending to government remained broadly stable in 1992 despite the large increase in government demand for credit. While inevitably some uncertainty remains, the conclusion may be drawn that crowding out was not a major factor in

Table 7
Tax revenues from financial institutions in Hungary

Item	1988–90	1991	1992	Preliminary budget 1993	Revised budget 1993
Revenues (Frt. bn)	31.1	44.5	−0.2	25.0	6.0
As a percentage of					
Total revenue	3.2	4.0	0.0	1.5	0.6
GDP	1.7	1.9	0.0	0.8	0.2

Sources: OECD (1993) and Reuters 3/6/93.

preventing the enterprise sector from gaining access to credit in the period to end-1992.

Can the widening interest rate spread be explained by increased taxation of banks? Pressures to find ways of financing fiscal expenditures may have expressed themselves in efforts to extract taxes from the banking sector. One way to increase tax revenues would have been to limit the deductibility of provisions from taxable income,[18] which was the practice in all countries before 1992. With the introduction of mandatory provisioning in 1992, tax deductibility was introduced, too, leading to a de facto reduction in direct taxation. Indeed, direct tax revenues from banks all but disappeared that year. Detailed figures on budgetary revenues from banks are available for Hungary and are shown in Table 7. Until 1992, 3–4% of budgetary revenues had come from the corporate profits tax on banks, which was equivalent to almost 2% of GDP. The introduction of the tax-deductibility of provisions combined with the deterioration of portfolios in 1992 led to the disappearance of this source of revenue and largely explains the deterioration in government finances that year. Initial projections for corporate income taxes from banks in 1993 had to be scaled down in mid-year as the need to provide greater budgetary support for the recapitalisation of banks was felt more acutely.

While direct taxes were reduced, indirect taxes on the banking system could still have been raised, for example through compulsory reserve requirements. This indirect tax on banking has been relatively low in

[18] In Hungary, risk reserves were even made subject to a special tax in 1989, when banks were required to invest them in low-yielding housing fund bonds and thus relieve the budget.

Table 8
The taxation of financial intermediation

Country and item	1991	1992
Czechoslovakia		
Average reserve ratio	6.6	4.3
Cost of reserves (% of GDP)	0.4	0.4
Resulting increase in interest rate spread (in basis points)		20
Hungary		
Average reserve ratio	18.3	17.5
Cost of reserves (% of GDP)	1.5	1.1
Resulting increase in interest rate spread (in basis points)		310
Poland		
Average reserve ratio	14.3	10.5
Cost of reserves (% of GDP)	1.8	0.9
Resulting increase in interest rate spread (in basis points)		360

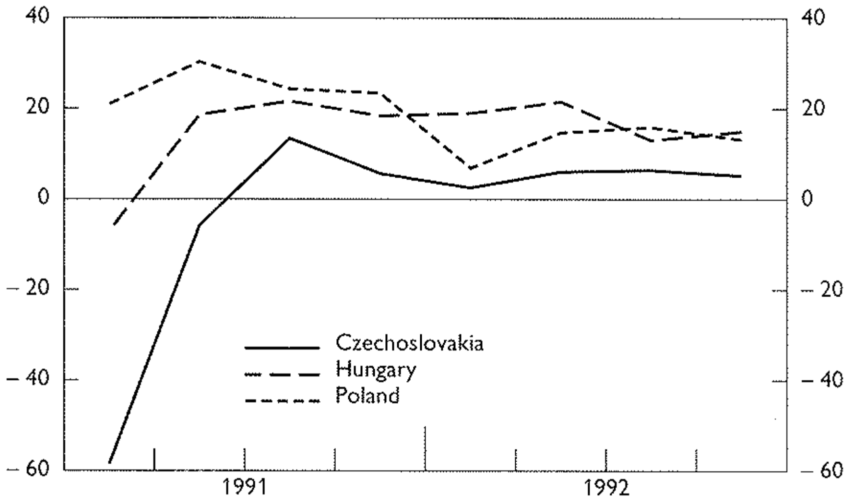
Source: Estimates based on information in central bank bulletins and annual reports. The average compulsory reserve ratio has been calculated by dividing actual compulsory reserves by liabilities subject to reserve requirements. The cost of reserves is the opportunity cost of not being able to invest in short-term government paper or in the interbank market. The part of the spread attributable to compulsory reserve requirements is taken from Table 10.

Czechoslovakia, where revenue considerations have been less important, but quite significant in the other countries (Table 8). In Hungary and Poland, the cost of compulsory reserves amounted to over 1% of GDP in 1992, quite a substantial amount. Compared to 1991, however, the taxation through reserve requirements actually decreased. Therefore the widening of the spread cannot be explained by reserve requirements.[19]

In sum, the decline in the growth in credit to enterprises observed in 1992 and the marked widening of spreads do not seem attributable to

[19] In Hungary, this tax has been used to compensate partly for the loss of revenue incurred by the National Bank because a large part of the credit it has extended to the Government is non-interest-bearing, stemming from revaluation losses on foreign currency loans. In Poland, most of the tax has been earmarked for the agricultural support fund. By increasing the spread between borrowing and lending rates, the indirect taxation of banks has reduced the attractiveness of their services and induced customers to bypass the banking sector. A few large highly rated enterprises in Hungary have turned to the bond market and many more have sought loans from abroad. The latter expanded by $500 million during 1992 alone. We estimate the contribution to the spread of the implicit taxation through reserve requirements at more than 300 basis points in the case of Hungary and Poland. This estimate is consistent with those published by the National Bank of Hungary

Graph 3
Real borrowing rates*
Annualised rates, in percentages



* Quarterly averages of monthly lending rates deflated by the producer price index in the following quarter.

growing fiscal deficits. There is no evidence of a crowding-out effect. From this evaluation it should not, however, be concluded that fiscal deficits do not matter. Household saving may decline and enterprises' demand for funds as well as banks' willingness to lend to them may well increase. Fiscal deficits could then become a constraint on lending to enterprises, and there are indeed indications that this may already have started to happen in 1993. However, it would appear that the changed behaviour of banks during 1992 cannot be attributed to fiscal pressures.

Can the decline in bank lending to enterprises be explained by the reluctance of enterprises to borrow? Enterprises could have reduced their borrowing because of high real interest rates, which made investment projects appear unprofitable, or they could have cut back on investment for any given interest rate because economic uncertainty has increased. Under the first hypothesis we would expect the decline in borrowing to coincide with a rise in real interest rates. The second one is more difficult to discern from the credit rationing behaviour of banks. We can observe a simultaneous decline in borrowing and investment but will

find it almost impossible to detect which was the cause and which the effect. One clue may be provided by a closer examination of the decline in net borrowing by enterprises. If this decline is mainly due to an accumulation of assets, we may interpret this as favouring the view that uncertainty has led to lower investment, which in turn has led to reduced borrowing. In contrast, if the decline in net borrowing is mainly due to reduced lending the credit rationing hypothesis would seem to be supported.

Real interest rates were high in 1991–92, ranging from roughly 5–10% in Czechoslovakia to 15–20% in Hungary and 15–30% in Poland (Graph 3). These rates were high enough to have deterred potential borrowers. What is important for the analysis, however, is whether the rise in interest rates coincided with the decline in bank lending to enterprises which took place in 1992. This does not seem to have been the case. Real interest rates rose to high levels in 1991, the same year that borrowing by enterprises expanded substantially. In 1992 real interest rates remained high, but lending to enterprises dropped dramatically. The timing of these events suggests that real interest rates are not a good explanation of reduced lending.[20] Anecdotal evidence from commercial banks is consistent with this view.

Has increased uncertainty induced enterprises to invest and hence borrow less or has the decline in lending been the cause of reduced investment? As these developments have coincided, this question cannot be answered in a definitive manner. Nonetheless changes in the financial assets and liabilities provide some indications (Table 9). The major shift between 1992 and 1991 has taken place on the lending side. Lending by banks to enterprises diminished dramatically while enterprises' accumulation of assets was more or less unchanged. This could be seen as an – admittedly weak – sign that the initiative to reduce lending may have come from banks, particularly as enterprises also reduced their asset

[20] It may be worth pointing out that high interest rates cannot necessarily be expected, a priori, to lower credit demand in an eastern European context. "Good" borrowers would be expected to reduce their demand for credit as projects that were profitable at lower interest rates would no no longer be so. In contrast, "bad" borrowers might actually increase their demand for credit in order to pay their higher interest bill on outstanding debt. With many companies being insolvent and struggling to maintain liquidity the presumption that higher interest rates could lead to higher credit demand does not lack plausibility. These companies realise that they have no chance of survival in a market environment with the present burden of debt; some may be viable with debt reduction, others not, but in both cases it is rational for them to react to distress with further borrowing, as they find themselves in an end-game situation where they have little to lose. Whether this demand is satisfied depends ultimately on the behaviour of banks.

Table 9

Changes in financial assets and liabilities of enterprises

As a percentage of GDP

	1991	1992	Change (in % points)
Czechoslovakia			
Lending to enterprises	14.2	10.3	–3.9
Assets of enterprises	7.7	7.3	–0.4
Hungary			
Lending to enterprises	5.2	0.4	–4.8
Assets of enterprises	3.5	3.0	–0.5
Poland			
Lending to enterprises	10.7	4.5	–6.2
Assets of enterprises	2.7	3.4	0.7

Source: Estimates based on monetary surveys of central banks, corrected insofar as possible for stock adjustments not related to financial flows and changes in the exchange rate.

accumulation somewhat in two countries. Another argument in favour of this interpretation is the fact that economic uncertainty in 1992 was no greater than in previous years, given the substantial progress with economic transformation and the stabilisation of output in Czechoslovakia and Hungary and the resumption of growth in Poland. Also, gross fixed investment had already declined in 1991 and remained roughly constant during 1992. This points again to credit rationing rather than reduced investment demand.

Overall then, the evidence reviewed points, although by no means conclusively, towards credit rationing behaviour by banks. The National Bank of Hungary (1993, p. 93) too comes to this conclusion, and Bod (1993, p. 10) clearly states: "Banks have become prudent in their lending... Owing to the credit crunch, [net domestic credit] has increased at a rate much lower than would have been permissible...". In a situation of great uncertainty, eroded informational and organisational capacity of banks owing to radically changed economic conditions, and reduced net worth of many borrowers, credit rationing is a normal reaction of banks in market economies. It would augur well for the developing financial systems of eastern Europe if the interpretation of bank behaviour in Czechoslovakia, Hungary and Poland as credit rationing were indeed correct, as it would imply that they may be able to shoulder larger

responsibilities in the control and restructuring of enterprises in the not too distant future.

Two further pieces of evidence would seem to support the interpretation of the reduction in lending to enterprises as prudent behaviour on the part of banks. The first is the coincidence between the decline in lending and the introduction of new banking laws and regulations which substantially tightened the regulatory environment of banks (described in Section 3). In the absence of convincing alternative explanations for the credit crunch in 1992, the fact that the new regulations were introduced in that year creates a presumption of a relationship between the two. A tighter regulatory environment may well have led to more prudent bank behaviour.

Secondly, the amount of non-performing loans rose substantially in 1992, largely as a result of improved prudential regulations. It has been argued above that prudent banks would react by widening the spread between lending and borrowing rates in order to generate the necessary provisions. This interpretation is supported by a closer inspection of factors explaining the widening of the spread observed in 1992.

A crude attempt to gauge the relative importance of different factors can be made with the help of a simple simulation model.[21] It is described in the appendix in greater detail and basically breaks down the balance sheet of the banking system into its main elements. Categories of assets and liabilities are distinguished according to the remuneration received or paid on them. Combined with information on interest rates, a profit condition is derived which describes the real rate of return on capital as a function of interest rates and inflation. By imposing a target rate of return the model can be solved for the spread between borrowing and lending rates. The contribution of non-performing loans to the spread is then calculated by comparing the spread with and without those loans. Needless to say, the results should not be taken literally but should rather be seen as broad indications of orders of magnitude because the parameters used in the simulations paint only a very stylised picture of reality and are furthermore based on data which may not always be entirely reliable. They have been assembled using different sources, including balance-sheet information in accordance with national accounting standards, which can be misleading, in particular as far as the capital-to-asset ratio is concerned.

[21] Compare OECD (1993).

Table 10

Decomposition of the interest rate spread

Based on stylised facts at the end of 1992

Item	Czechoslovakia	Hungary	Poland
Actual spread in December	6.7	13.0	15.5
Baseline simulation	4.9	11.7	14.4
Difference	1.8	1.3	1.1
Difference compared with baseline			
Without non-performing loans	–1.6	–4.6	–7.2
Without compulsory reserves	–0.2	–3.1	–3.6
With inflation = 0	–0.6	–1.7	–5.7

Source: See Appendix and Appendix Table 1.

In addition, the model simplifies reality substantially and completely ignores credit risk. As lending interest rates generally contain a risk premium, we would therefore not expect the model to explain the observed spread completely. We have assumed that 30% of loans are non-performing, in line with the national estimates presented above. Concerning the target real rate of return, we have used 10% in our calculations. This assumption may not accurately reflect reality well in 1992, but in the medium term the banking industry should achieve rates of return comparable with those in other countries and industries. Newly established smaller commercial banks as well as new entrants are likely to demand at least such a rate on their investments.

Simulation results are reported in Table 10 while assumptions are shown in Appendix Table 1. The difference between the actual spread at the end of 1992 and the simulated spread is, given the stylised nature of the model, surprisingly small.[22] A number of observations can be made:

– Bad loans explain a large part of the spread, between 160 and 720 basis points. Given that the amount of classified bad loans before 1992 was

[22] Although this difference may be accounted for by a variety of factors, including measurement errors, two interpretations seem to merit particular attention. The difference could have arisen because reported data on non-performing loans may have understated the actual situation; in this view, the additional unexplained spread would reveal indirectly the total amount of bad loans. An alternative hypothesis would view the difference as the premium banks have to charge to compensate for the risk of default. Given that the simulation model completely ignores risk, it appears reasonable to ascribe at least part of the unexplained difference to credit risk.

small, it seems plausible to conjecture that the emergence of the problem of non-performing loans in the course of 1992 contributed substantially to the widening of the interest rate spread. This would support the interpretation of cautious behaviour by banks.

– Compulsory reserves "explain" more than 300 basis points of the spread in Hungary and Poland, reflecting the substantial amount of taxation of financial intermediation implicit in these reserves.[23]

– It is worth mentioning that non-performing loans, compulsory reserves and inflation interact in such a way that, like a lens, each magnifies the effects of the others.[24] For example, higher nominal inflation tends to increase the distortionary effects of non-performing loans.

Although the decomposition is thus not strictly additive, non-performing loans and compulsory reserves together appear to explain, to a substantial degree, that part of the spread that appears excessive relative to spreads in industrial countries. Since bank taxation through compulsory reserves did not increase during 1992 but non-performing loans did, the presumption must be that the latter to a large extent explain the widening spread.

2.3 Bank/industry relations

Another facet of the question of whether banks are able, in principle, to play a more active role in corporate control and enterprise restructuring relates to the legal framework. Providing means of securing loans, laws and regulations can encourage banks to play a bigger role. Of particular importance are bankruptcy regulations and how they are applied in practice. The availability of collateral is another crucial factor, as is the degree to which banks can control enterprises directly through share ownership.

Lender/borrower relations are fragile by their very nature. A borrower's willingness and ability to repay a loan can never be known with absolute certainty. Even if they were, the borrower would still be faced with incentives to maximise the return on his equity rather than the firm's value, inducing him to undertake projects which are riskier than

[23] As has been discussed, this taxation did not, however, increase during 1992, but rather declined and therefore cannot explain the widening in the spread.

[24] More precisely, there are substantial interaction terms between the different elements of the simulation model. See Appendix.

those it would be in the lender's interest to undertake. Loans covenants can reduce somewhat the divergent interests that exist between borrower and lender but cannot eliminate them entirely. Over the years capitalist practice has developed mechanisms to support mutually beneficial relationships despite the known divergence of interest. The main ones are hostages, the switching of asset control in periods of distress and close monitoring by the lender. Hostages in modern times are mostly in the form of collateral, which gives the lender a claim to an asset which he can realise in the event of default. The switch of control from the equity owner to the lender in the event of illiquidity is facilitated by bankruptcy laws.[25] Short-term loans which are rolled over repeatedly but can be withdrawn at short notice help underpin close bank monitoring. Ownership of shares in the borrower's firm can help reduce moral hazard by influencing investment strategy, bring about a change of management earlier than bankruptcy laws and increase the lender's ability to monitor the borrower's behaviour.

All these mechanisms for supporting financial markets by providing the means to control borrowers were largely irrelevant under central planning. Lending then was entirely passive. As the economic transformation gathered speed, however, their significance was increasingly appreciated. Some of these mechanisms imply a shift of economic control to banks, which has not been unopposed. Concern that the abrupt implementation of bankruptcy laws might damage the economy has further delayed the full implementation of these capitalist mechanisms. Nevertheless, major changes in bank/industry relations have occurred (Table 11).

New bankruptcy laws have been introduced in former Czechoslovakia and Hungary. In Poland, the applicability of existing laws has been broadened and their use has been facilitated by the Enterprise and Bank Restructuring Law of February 1993.[26] In principle, these laws form a solid basis for changing incentives as well as for effective bankruptcy proceedings.

Former Czechoslovakia passed a new bankruptcy law in 1991, which became effective in 1993. The concern here was to synchronise bankruptcy regulations with mass privatisation. It could have been counterproductive to subject enterprises to potentially disruptive

[25] See Aghion et al. (1992) and Mayhew and Seabright (1992).

[26] The importance of bankruptcy rules for a functioning banking system is analysed by Miszei (1994).

Table 11

The framework for bank/industry relations

Item	Czechoslovakia	Hungary	Poland
Rules for share ownership	Ownership of shares is restricted to a maximum of 10% of own capital and 25% of capital and reserves. Limit does not apply to debt/equity swaps, where shareholdings have to be reduced to the legal limit within 2 years.	Ownership of shares is restricted to a total of 60% of own capital and that of one enterprise (direct and indirect) to 15% of capital for universal banks and 40% for investment banks. Limits do not apply to separately recorded and handled shareholdings arising from debt/equity swaps for a maximum period of 6 months.	Ownership of purchased shares is restricted to 25% of bank capital but the President of the National Bank of Poland can raise this limit to 50%.
Bankruptcy regulations	New bankruptcy law in force since April 1993 in the Czech Republic and since June 1993 in the Slovak Republic. Creditor-initiated scheme based on illiquidity. Proceedings against privatised companies can begin 2 months after share distribution. Companies then have 3 months to pay or to settle, with the possibility of a further 3-month extension. Lack of judges and administrators is likely to make the process time-consuming.	Bankruptcy law of 1986 had been ineffective, as had measures to improve it. New bankruptcy law in force since January 1992. Debtor has to declare bankruptcy after being in payment arrears of more than 90 days. Creditors can file for liquidation after payment is 60 days overdue. After declaration of bankruptcy, parties have 3 months to come to agreement on reorganisation and debt restructuring. Only one bankruptcy is allowed within a three-year period. Rejection of reorganisation triggers liquidation procedure.	For state-owned enterprises, the law allows the founding ministry to liquidate the enterprise upon failure to pay the dividenda, a capital tax. For joint stock companies the provisions of the commercial code of 1934 apply (as amended by the Insolvency Act of 1990). The Enterprise and Bank Restructuring Law of February 1993 extends the possibility to conduct "arrangement proceedings" from the courts to banks for 3 years. Minority creditors can be forced into a restructuring agreement if creditors holding more than 50% of debt approve the agreement.

Table 11 (continued)

Item	Czechoslovakia	Hungary	Poland
Bankruptcy practice	Few bankruptcies so far.	During 1992 14,000 firms filed for bankruptcy and liquidation. Courts are overloaded (the Budapest court had 8 judges and handled 147 restructuring and 337 liquidation cases in 1992). Long delays result.	Few bankruptcies because process is lengthy (about three years) and recovery limited because other claims usually rank higher; for ministries, there is little incentive to liquidate their enterprises.
Collateral	Owing to finished restitution and small-scale as well as mass privatisation, situation with respect to security of title to real property has improved.	Problematic. Collateral demands by banks are very high, but in general there is little collateral available because most titles to real property remain undefined or subject to legal disputes. Typically only about 30% of the value of collateral proves to be recoverable.	Problematic. Absence of legal titles to real property of state-owned enterprises is the rule. Land registration partial and incomplete. Mortgages do not prevent owner from further disposing of land. Enforcement slow and partial because other claimants rank higher (wages). Non-possessory pledges of movables legally uncertain.
Credit guarantees	Credit guarantees given to small businesses through the newly created Czech-Moravian Guarantee and Development Bank.	Credit Guarantee Corporation active since March 1993. Guarantees up to 80% of principal for loans of less than Frt. 100 million to Hungarian companies with less than 300 employees. Financed partly by fees, partly by privatisation revenues.	National Bank of Poland guarantees some bank credit to private enterprises up to 60% of the difference between face value of loan and value of collateral.

Table 11 (continued)

Item	Czechoslovakia	Hungary	Poland
Preferential credit	Very little preferential credit. Some interest subsidies for loans to newly-wed couples and subsidies and deferment of interest payments for small businesses through the Czech-Moravian Guarantee and Development Bank.	Negligible, limited to special facilities for small, private entrepreneurs financed in part by foreign grants (START loans, E-loans).	Some preferential credit is extended, in particular for agriculture, housing and central investments. The form of subsidy is partly in form of budgetary appropriations and partly in form of interest capitalisation. Interest paid on compulsory reserves is channelled into the agricultural support fund, which buys farmers' debts from banks.

Sources: Banking and bankruptcy laws, OECD country surveys, Central European 1/2/1993, Reuters.

bankruptcy procedures without giving new owners at least some time to take control and improve the prospects of their new enterprises.

The bankruptcy law in Poland had been broadly adequate, but the problem was that it did not apply to the bulk of problem enterprises, which were legally constituted as state-owned enterprises. The Enterprise and Bank Restructuring Law of April 1993 paved the way for the quasi-automatic transformation of state-owned enterprises into joint stock companies, hence subjecting them to the bankruptcy law. Combined with provisions designed, for a limited period of time, to allow banks to conduct bankruptcy proceedings themselves without involving the courts, the degree of control gained by banks has been considerable, although it is too early to judge to what extent this new instrument will be used.

The number of actual bankruptcies in the Czech and Slovak Republics and Poland has remained small. This is not necessarily a sign that these laws are not working. The threat of losing control over their enterprise is a powerful incentive for managers to come to an agreement with creditors before they file for bankruptcy. Creditors, on the other hand, may be inclined to restructure debt and make changes in enterprises without using the court system because of the high costs involved. Judges and receivers with relevant knowledge are scarce, ownership of land remains disputed in many cases, and consequently proceedings are slow. It is not uncommon for bankruptcy proceedings which end in liquidation to cover only a fraction of creditors' claims. Thus incentives on both sides are conducive to an agreement outside the formal bankruptcy proceedings. Low numbers of formal bankruptcy cases are therefore not necessarily a good indicator of how effective the laws are.

Arguably the most radical bankruptcy law was promulgated in Hungary in 1992. It is debtor-initiated, meaning that debtors who are in arrears to creditors, regardless of the amount of their outstanding debt, have to declare themselves bankrupt to the courts. Such provisions might also lead to many bankruptcies in industrialised countries, where it is not uncommon to pay suppliers after the due date.[27] It has done so in Hungary, where a total of 14,000 firms have filed for bankruptcy in the year. Courts have not been able to handle these cases rapidly and the fact

[27] For a detailed analysis, comparing payment arrears in transition countries with those in industrialised countries, see Fan and Schaffer (1993). Involuntary trade credit is quite common in industrialised countries. About two-fifths of enterprises in Belgium, France, Italy, the Netherlands and the United Kingdom tend to pay more than fourteen days after the due date.

that creditors must agree unanimously to the restructuring of debt has allowed small creditors to hold out and delay the process further. The large number of bankruptcies has been a major factor in the rapid rise in non-performing debt.

The availability and security of collateral continues to be a problem. Banks have tightened collateral standards, but uncertain rights to real property in Hungary and Poland in particular have limited the usefulness of collateral so far. Legislation which ranks other claims such as wage payments higher than loan contracts has also been problematic. Legal uncertainty surrounding non-possessory pledges of movables like inventories has further limited the availability of collateral. Foreclosure is also made difficult by the fact that courts are overburdened. As a result of these factors it is quite common for the realised value of available collateral to be only a third of its assessed value.

The shortening of loan maturities has been pronounced. Long-term loans, where were common under central planning, have all but disappeared and it has become difficult to obtain loans with a maturity of more than one year in Hungary and Poland. Only in the Czech Republic do enterprises still have access to loans with maturities of up to four years, although in practice most loans tend to have shorter terms. The ensuing periodic rollover has given banks more scope to influence borrower behaviour. It has also increased their incentives to monitor borrowers more carefully.[28] Evidence from enterprises[29] suggests that banks have exploited this potential for increased control of borrowers, as reflected for example in the very high priority the latter have attached to remaining up to date in their payments to banks.

While banks can exert some control over enterprises through the process of periodically renewing short-term loans and through the threat of bankruptcy, there remains a divergence of interest between shareholders and creditors. Shareholders tend to maximise the return on equity, disregarding the risk their strategy may pose to bondholders. Bondholders, on the other hand, tend to be overcautious, emphasising the probability of repayment and neglecting the upside potential a somewhat riskier enterprise strategy would have for equity holders (Prowse,

[28] The corporate control function of debt has been emphasised by Jensen (1986). Lane and Folkerts-Landau (1992) and Scharfstein (1992) stress the importance of this mechanism for eastern Europe.

[29] For example Pinto et al. (1993) and Fan and Schaffer (1993).

1990). Those divergences of interest can be attenuated if bondholders also hold equity, allowing them to reap some benefit from riskier enterprise strategies and also giving them more control over and information on the firm's management. There is a risk, however, that ownership of shares by banks could bias their lending behaviour and induce them to deviate from prudent lending practice if firms in which they own shares are in financial difficulty.

The new banking laws in eastern Europe have struck a balance between these two considerations. Share ownership by banks has been allowed, but is restricted to between 15 and 25% of equity. Where equity is acquired in the process of enterprise restructuring through debt-for-equity swaps, these restrictions do not apply and the limits are waived for a certain period of time in Hungary and Czechoslovakia. In Poland, limits can be waived by the National Bank.

Banks' means of control have been increased, but the fact that small new enterprises have no track records, the uncertain legal situation regarding property titles and the limited availability of collateral have constrained credit availability for new and small enterprises. Partly as a countervailing measure, but also partly based on the view that the social returns of the rapid development of a dynamic class of entrepreneurs exceed the private returns, various support programmes for small enterprises have been created. These have taken the form of subsidised credit, sometimes paid for by foreign grants, and credit guarantees, which are not fundamentally different from measures taken in other European countries, for example in Germany by the Kreditanstalt für Wiederaufbau (KfW). The Czech Republic created the Czech-Moravian Guarantee and Development Bank for this purpose; Hungary established the Credit Guarantee Corporation and various subsidised credit facilities administered by commercial banks; in Poland, these functions are still carried out by the National Bank.

3. Control of banks

The potentially damaging effects of a large portfolio of non-performing loans have been recognised in all countries and measures to alleviate the situation have been taken. Bank behaviour appears to have changed substantially and the foundation has been laid for a more active role to be played by banks in the monitoring and control of enterprises. The degree to which banks can be entrusted with such a role, however, depends crucially on whether they themselves are subject to effective control. In principle, banks should be easier to control than enterprises because their performance is easier to observe (Diamond, 1984). To what extent this is actually the case depends in particular on the prudential regulation of their activities and effective supervision, ensuring that the rules are actually implemented. It also depends on the discipline exerted by competition between banks. Both of these factors are reviewed in this section.

3.1 Prudential regulation and supervision

A number of modifications in the banking environment have already been touched upon in Section 2. A more detailed overview of the changes in prudential regulation and the supervision of banks is provided here. All countries either introduced new banking laws in 1992 or made substantial amendments to existing ones. In addition, central banks issued regulations which substantially tightened the regulatory environment for banks. The modifications are summarised in Table 12, while the following paragraphs attempt to highlight the most important points:

- New loan classification schemes have been introduced, reducing the scope for banks to conceal non-performing loans. Problem loans are classified as substandard, doubtful or loss and the criteria used are relatively similar, based on a combination of payment delays and the financial situation of the borrowers.

- It has become mandatory to provision for non-performing loans. International standards are used as regards the provisioning percentage applicable to each category of loans. In general, transitional provisions are in force permitting banks to reach the required level of provisions over a period of up to three years. Provisions can be made out of pre-tax income.

Table 12

Prudential regulation and supervision of banks

Item	Czechoslovakia	Hungary	Poland
Two-tier banking system since	1990	1987	1989
Main legal basis for banking	Act No. 21/1992 Collection of Laws on Banks, effective 1992.	Act No. LXIX of 1991 on Financial Institutions and Financial Institutions Activities, effective 1992.	The Banking Law of 31st January 1989 with various amendments, of which a major one in 1992, Journal of Law of 1992 No. 72, item 359.
Accounting standards	New chart of accounts since 1991, based on French model. Substantial differences compared with IAS in particular with respect to provisioning. In Czech Republic major banks started in 1992 to publish both national and IAS accounts.	New accounting law introduced in 1992. Decrees 181/1991 and 47/1992 reduced scope for banks to overstate profits. Substantial differences compared with IAS remain, in particular with respect to delayed provisioning and treatment of accrued interest.	New chart of accounts since 1991 based on French model. Implementation has experienced difficulties, in particular with respect to treatment of restructured non-performing loans. Substantial differences compared with IAS, but gap is narrowing.
Example:	*Komerční Banka result in 1992: IAS: Kcs. –4.3bn, national: Kcs. +4.8bn.*	*Capital adequacy of Budapest Bank in 1991: national 6%; IAS: 3.6%.*	*Capital adequacy of major commercial banks in 1992: national: 5.5–13.4%; IAS: some of these banks have negative net worth.*
Loan classification	Mandatory loan classification scheme introduced in 1992. Problem loans are classified as substandard, suspicious or non-performing depending on payment delay, liquidity and solvency of borrowers, and other circumstances such as bankruptcy proceedings.	Mandatory loan classification since March 1992 (decree 3/92 of the State Banking Supervision). Substandard: payment delay but payment expected within 60 days, or collateral covers asset and can be sold within 180 days; doubtful: will cause a loss but extent not known, or collection expected between 60 and 360 days and collateral covers asset and sale possible within 360 days of due date; bad: expected delay more than 360 days, or expected loss greater than 50%, or debtor involved in liquidation proceedings.	Mandatory loan classification introduced in 1992. Substandard: payment delay less than 3 months or deteriorating financial conditions such as consecutive losses for 3 months; doubtful: payment between 3 and 6 months overdue, or serious situation like capital losses; loss: payment more than 6 months overdue, bankruptcy or liquidation proceedings initiated or other factor making a major loss likely.

Table 12 (continued)

Item	Czechoslovakia	Hungary	Poland
Provisioning	General reserves: up to 2% of total assets. Specific provisions: substandard: 20%; suspicious: 50%; non-performing: 100%.	General reserves: 1.25% of balance-sheet total and 1% of guarantees. Specific provisions: substandard: 20%; doubtful: 50%; loss: 100%.	Specific provisions: substandard: 20%; doubtful: 50%; loss: 100% (calculated net of collateral values and government guarantees). Full level of provisions to be reached by end of 1993.
Taxation of provisions	Specific provisions are tax-deductible.	Specific provision can be made before tax since December 1991. Allocations to general reserves are to be made out of after-tax income.	Specific provisions have been tax-deductible in principle since 1992 and accrued but unpaid interest is no longer taxed.
Capital adequacy	6.25% of risk-weighted assets by end-1993; 8% by end-1996. Banks created after 1991: 8%.	8% of risk-weighted assets by end-1992, but deadline may be extended by State Banking Supervision until end-1994.	8% of risk-weighted assets by end-1992 with the possibility of a longer transitional period determined on a case-by-case basis by the National Bank. New banks starting operations after 5/1993 have to achieve 15% in the first year and 12% in the second.
Minimum capital for new banks	About $18 million.	About $13 million.	About $6 million.
Exposure rules	As a proportion of capital: individual customers max. 25%; entities with special relationships (e.g. more than 10% of shares owned by bank): max. 20%; banks in Czech/Slovak Republic or in OECD area: 80%; ten largest debtors: max. 230%. To be attained by end-1995, with transitional provisions.	As a proportion of capital: individual customers max. 25%; total of large loans max. 600%. Restrictions on insider lending.	As a proportion of capital: individual customers (including guarantees) max. 15% and any one loan agreement max. 10%. President of the National Bank can relax these rules by allowing banks to count long-term loans towards capital and can increase the limit to 50%.

Table 12 (continued)

Item	Czechoslovakia	Hungary	Poland
Deposit insurance	100% state guarantee for deposits by natural persons at former state banks pending the introduction of a deposit insurance scheme.	Deposit insurance introduced in June 1993. All deposits made since then, including foreign exchange accounts, are insured up to Frt. 1 million. Membership of the scheme is compulsory for banks. Costs are initially 0.5% of capital and an annual payment of 0.02% of deposits for normal banks and 0.03% for high-risk banks. Deposits made by the state and by other banks and certificates of deposit are excluded. Before, all household deposits were covered by a 100% state guarantee.	100% state guarantee for all savings deposits in state-owned banks and banks which already existed in February 1989. Plans to introduce an insurance scheme with compulsory application by banks but with admission based on selection criteria. Premium rebates are envisaged for lower-risk banks, e.g. those which have a stronger capital base.
Supervision	Responsibility of the Czech and Slovak National Banks. Supervision departments were established in 1991. Inter alia, capital, liquidity, credit exposure and forex exposure regulations have been issued. Monthly monitoring of banks based on banks' submission of balance sheets, profit and loss statements and selected ratios. Appropriate disciplinary powers. On-site inspection carried out.	Responsibility of the State Banking Supervision, an independent government organisation. Relies on monthly reporting by banks of balance sheets, profit and loss statements and ratios. Wide range of disciplinary means at disposal and relatively effective organisation. Sometimes conflict with the State Asset Holding Company as owner of banks. On-site inspection used.	Responsibility of the National Bank of Poland. Relies on monthly reporting from banks of balance sheets, profit and loss statements and ratios. Monitoring and enforcement capacity not very strong. Large number of small banks and frequent difficulties in that sector have made "firefighting" almost constant and have interfered with the development of supervisory capacity.

Sources: Banking laws and central bank regulations and reports, supplemented by Reuters, BBC monitoring service, MTI-Econews, various newspapers and staff visits and evaluations.

- New accounting rules based on European models have been introduced and accounting standards have been tightened. Nevertheless, differences compared with international accounting standards (IAS) remain, as shown by the discrepancy between national and IAS figures where both are available. For example, Komerční Banka showed a profit in 1992 under national accounting rules, but a loss under IAS accounting rules. Compared to 1991, discrepancies appear to have narrowed somewhat and are likely to continue to do so as attempts to find foreign partners and to privatise banks gather speed.
- Capital standards based on the recommendations of the Basle Committee have been introduced and domestic bank supervisors have issued guidelines for the weighting of assets and the calculation of capital. Provision has been made for transitional arrangements, but it nonetheless appears likely that many banks will have difficulty in meeting the targets in the near future.
- Raised minimum capital requirements for new banks have put an end to the proliferation of small and undercapitalised banks, which are difficult to supervise.
- The risk to banks' solvency of the failure of large customers was addressed with the introduction of exposure rules.
- Deposit insurance is planned in the Czech and Slovak Republics and Poland. It was introduced in Hungary in 1993. This step is not of major importance for preventing runs on banks as most deposits had been, explicitly or implicitly, insured by the Government. Its significance lies in the levelling of the playing field as the heightened riskiness of banks has led to a concentration of deposits in "safe" state banks which are either too big to fail or benefit from a government guarantee.

While bank regulations have been tightened and to a large degree brought into line with international practice, implementing them has not been easy. This is partly due to the difficulties of establishing reporting systems for banks and to the lack of experience of the supervisory agencies. All countries have established such agencies, either in the form of departments of the central bank (Czech and Slovak Republics and Poland) or of a separate government body (Hungary). Initially, as was to be expected, the new supervisory bodies experienced difficulties, partly

because of the inexperience of staff and the absence of established procedures for off-site and on-site inspection. These difficulties have been recognised, however, and have been addressed in all countries, often with the help of technical assistance. The quality of bank supervision has been increasing as a result and should, in due course, lead to an effective supervisory capability.

Despite substantial progress, a fundamental problem of bank supervision remains its credibility. If banks do not or cannot comply with the new regulations, perhaps because the gap between the initial situation and the newly required standards is too wide, bank supervisors may be faced with a difficult choice between regulatory forbearance and the closure of banks. The new regulations impose rules on central European banks which were originally designed for banks in mature industrial economies, while the central European economies are in the midst of a systemic transformation of their economies. Given the banks' initial situation, many of the new rules could not be complied with immediately. To some extent the countries in question have attempted to deal with these circumstances through transitional provisions which phase in the new regulations over time. It appears, however, that the weakness of banks' balance sheets was underestimated in many cases, so that even transitional provisions cannot be complied with. This is, for example, the case with the capital adequacy rules in Hungary.

Under these circumstances it is difficult to enforce high regulatory standards. Strict application of the law might require the closure of a large segment of the banking industry or of major banks. Mergers with other banks may provide a partial solution but can work only if potential partners have a strong capital base, which in most cases appears unlikely. The threat to close large banks is not credible because of the large costs associated with it.[30] There is an obvious danger of time inconsistency here. If the regulatory rules are such that banks can comply at reasonable cost to themselves and the economy, then the imposition of such rules can be expected to lead to changed bank behaviour and efforts to comply.

[30] Banks are repositories of information on customers which is likely to be bank-specific and cannot easily be transferred. Insofar as this is the case, bank closures destroy organisational information in the economy with damaging consequences for economic activity (Abel and Bonin, 1994). Recent research has attributed the persistence of the Great Depression to the destruction of organisational capital due to the large number of bank failures. The seminal paper in this literature is Bernanke (1983). A recent summary of the arguments and the state of the debate is to be found in Calomiris (1993).

The Government and the legislature are then in a position to induce changed behaviour through better regulations and tighter supervision.[31] This is not the case when banks can argue that compliance with the regulations would be prohibitively costly or simply impossible. The Government can then be expected to show regulatory forbearance if many banks or a large bank do not comply with the rules, and the banks know this.

In practice governments have opted for a mixed strategy to overcome the lack of credibility of the new regulatory regimes. To some extent they have shown regulatory leniency and have extended the period for complying with the new regulations. At the same time, they have helped banks meet the standards in question through measures to improve banks' balance sheets (Section 2.1). They have also shown a willingness to merge and even close smaller banks. There is little doubt that regulatory practice has become increasingly tight. Nonetheless, a number of banks exist which still do not even meet the minimum capital requirements of about $10 million. Therefore it may be too early to judge to what extent the regulation and supervision of banks has been transformed into a credible instrument which can shape the structure and behaviour of the banking industry.

3.2 Competition

Competition between banks is essential if banks are to play a larger role in corporate control and restructuring. Without competition, banks would have substantial discretion concerning how to use their control of enterprises. A political concern might be that this power could easily be abused. The economic concern is related to incentive effects. Banks would have fewer incentives to provide effective control of management and thus improve the efficiency of enterprises because, if the loans portfolio is in generally poor condition, this could be hidden in higher spreads between the lending and borrowing rates. To some extent these concerns can be mitigated through bank regulation and supervision, but experience suggests that this alone may not be enough to control banks.[32] It is the constant pressure of competitors which prevents banks from paying too

[31] In game-theory parlance they are able to occupy a Stackelberg leadership position.

[32] It is normally assumed that bank supervisors act in the public interest. But they are also likely to have their own interests, which may include maintaining a reputation for being effective supervisors. This can lead them to be biased towards leniency, with the result that failing banks may be closed or merged too late (Boot and Thakor, 1993).

low interest rates on deposits or charging too high rates on loans. This pressure, working towards a narrowing of spreads, induces banks to keep their loan portfolio performing. One of the means to do this is to monitor borrowers closely and to exert effective control over the management of borrowing enterprises. Therefore competition is necessary if banks are to play a constructive role in corporate control.

The degree of competition is difficult to judge. A clear sign of effective competition would be a fall in the price of financial services or an increase in the variety and quality of services at a given price. A declining spread would indicate competitive forces at work. The spread is, however, influenced not only by competition but also by the emergence of more prudent behaviour on the part of banks linked to the sharp rise in non-performing loans. The widening of the spread owing to changed bank behaviour, given its extent, is likely to override any factor in favour of a narrowing. Therefore an analysis of competitive forces in the banking sector has to fall back on more indirect indicators. Three types of such indicators are considered here: the concentration of the banking industry, the number of banks, and access of domestic residents to foreign banking services. Progress with the privatisation of banks is another useful indicator because competition may remain weak as long as banks are controlled by governments.

Commercial banks in central Europe have been created only in the last few years, with the former monobank being divided up into a central bank and a number of commercial banks. The loan portfolio was distributed to the new commercial banks, while most of the deposits remained initially with the specialised savings institutions, channelled to commercial banks in the form of refinancing credits through central banks. Table 13 provides an overview of major banks, their relative size and their specialisations at the end of 1992. Czechoslovakia then can be seen to have the most concentrated banking system, followed by Hungary. The banking industry was more decentralised in Poland.

The degree of concentration of both loans and deposits was very high at the beginning of the reforms and has remained so, as shown in both the share of loans held by major banks and the mismatch between the loan portfolio and deposits (Table 14). A high concentration of banking was to be expected initially. It is more revealing of the forces of competition whether the banking system has become less concentrated over time. This does indeed seem to be the case, although consistent and up-to-date

Table 13

Major banks in Czechoslovakia, Hungary and Poland

End-1992

Country and banks	Assets (in $ million)	Specialisation and remarks
Czechoslovakia		
Česká spořitelna	9715	Czech Savings Bank
Komerční Banka	9603	Major Czech bank
Československá Obchodní Banka	7128	Former foreign trade bank
Slovenská Štátna Sporiteľňa	4336	Slovak State Savings Bank
Všeobecná Úverová Banka	4235	Major commercial bank in Slovakia
Investiční banka	3756	Czech former state investment bank
Investičná A Rozvojová Banka	1390	Slovak Investment and Development Bank
Agrobanka	1273	Czech commercial bank
Živnostenská Banka	684	Czech commercial bank
Hungary		
OTP	8723	National Savings Bank
Magyar Hitel Bank	3358	Commercial bank
Kereskedelmi Bank	3071	Commercial bank
Magyar Külkereskedelmi Bank	2061	Former foreign trade bank
Budapest Bank	1733	Commercial bank
Post Bank and Savings Corporation	1446	New, rapidly growing bank
Poland		
PKO BP	6014	State Savings Bank
PKO SA	5722*	Savings Bank specialised in forex accounts
Bank Handlowy w Warszawie	5329	Former foreign trade bank
BGZ	4156	Bank for the Food Economy
Bank Przemysłowo-Handlowy	2044	Regional, one of 9 state commercial banks
Bank Śląski	1836	Regional, one of 9 state commercial banks, privatised in 1993
Powszechny Bank Gospodarczy	1493*	Regional, one of 9 state commercial banks
Wielkopolski Bank Kredytowy	1289	Regional, one of 9 state commercial banks, privatised in 1993
Powszechny Bank Kredytowy	1224	Regional, one of 9 state commercial banks
Bank Gdański	1204	Regional, one of 9 state commercial banks
Pomorski Bank Kredytowy	1037	Regional, one of 9 state commercial banks
Bank Zachodni	915	Regional, one of 9 state commercial banks
Bank Depozytowo-Kredytowy	704	Regional, one of 9 state commercial banks

* At end-1991.

Sources: BREE consulting; Euromoney, December 1993; The Banker, September 1992; Ministry of Finance and Polish Development Bank, 1992, The Banking System in Poland, Warsaw.

time series on the degree of concentration are not available. Outstanding loans in the Czech Republic have clearly become less concentrated – despite the separation from the Slovak Republic, which would have tended to work in the opposite direction. For Hungary, a slightly outdated

Table 14
Indicators of competition in the banking sector

Item	Czechoslovakia	Hungary	Poland
Concentration in the banking system	At the end of 1991, the 8 major banks held more than 90% of loans. The two major commercial banks accounted for 70–80% of commercial loans in 1991. In the Czech Republic 4 major banks accounted for 68% of total credit, while the savings bank held 48% of deposits in early 1993.	5 largest banks held 71% of total *assets* of the banking system in 1992. If the savings bank is excluded, 4 major commercial banks accounted for less than half of total *loans* in 1992.	Private banks held less than 15% of total credit, while the 9 major commercial banks had more than 2/3 of debt of state-owned enterprises to the domestic banking system.
Loan-to-deposit ratios	At the end of 1991 primary deposits stood at more than 300% of loans for the savings banks and at about 50% of loans for the two main commercial banks.	Primary deposits to loans at the end of 1991 were 73% for four major banks and 166% for the savings bank.	9 major commercial banks financed their lending to more than 80% from primary deposits in 1992.
Ownership	After mass privatisation, over 50% of shares of most former state banks are privately held, with the notable exception of the savings bank in Slovakia. The state retains substantial minority stakes.	At the end of 1991, 38% directly owned by the state and 28% indirectly through state enterprises. In 1992 ownership was concentrated in the State Asset Holding Company, which now owns more than 75% of the major banks.	7 commercial banks and 4 specialised banks are entirely state-owned. Most of the other (small) banks are entirely privately owned.
Privatisation	Majority ownership of major banks privatised through mass privatisation in 1992.	Privatisation of two major banks (Foreign Trade Bank and the Budapest Bank) under preparation.	Export Development Bank (1992); Wielkopolski Bank Kredytowy and Bank Slaski (1993). Privatisation of other commercial banks under preparation.

Sources: Central bank bulletins and annual reports, OECD (1993), Die Presse 7/6/93.

time series is available, as shown in Table 15. What is noticeable is the rise in the market share of the medium-sized banks at the expense of the four large commercial banks. The large banks' share of total loans fell from 70% in 1989 to only 53% two years later, while that of medium-sized banks increased from 8% to 24%. This may be partly ascribed to the establishment of new, smaller banks, but it is also partly due to the consistently

Table 15

Changes in the Hungarian banking system

Item	1989	1990	1991
Share of total loans (%)			
Four large commercial banks	70	61	53
Medium-sized banks	8	15	24
Savings banks	18	23	23
Deposit to loan ratio (%)			
Four large commercial banks	61	65	73
Medium-sized banks	71	73	89
Savings banks	264	169	166

Source: OECD (1993).

higher interest rates the large banks have charged on loans. Evidence of competition is also discernible in the normalisation of deposit-to-loan ratios, with banks building up their own deposit base and the savings bank gradually stepping up its lending activities.

The number of banks, in particular those with foreign participation, has increased substantially (Table 16), probably contributing to the competitive pressure. This influence has not been uniform and it is therefore useful to consider different segments of the market for banking services separately. In some segments the entry of new banks appears to have indeed improved competition, for example in trade finance and on the deposit side. In contrast, the market for loans, especially larger ones, continues to be dominated by a few banks with the necessary capital base to extend such loans (Abel and Szekely, 1994).

In 1992 banks continued to be owned predominantly by the state in Hungary and Poland,[33] while in the Czech and Slovak Republics majority stakes in the banks were privatised through mass privatisation. In Poland, the first state commercial bank was privatised in April 1993 and a second one later in the year. In Hungary, preparations are advanced for the privatisation of the Hungarian Foreign Trade Bank.

A strong element of competition for domestic banks has been the improved access of domestic enterprises to foreign banking services and

[33] Government control of banks was even tightened in Hungary through the concentration of shares in the State Asset Holding Company.

Table 16

Number of banks

Country and item	1990	1991	1992
Czechoslovakia			
Total	23	39	61
of which: with foreign participation	*6*	*15*	*19*
Hungary			
Total	29	36	38
of which: with foreign participation	*8*	*14*	*13*
Poland			
Total	43	89	94
of which: with foreign participation	*1*	*7*	*11*

Source: Central banks.

of households to instruments denominated in foreign currency.[34] On the deposit side, foreign currency deposits have become available to households. They have used their newly-gained freedom to diversify their portfolios by increasing their holdings of foreign exchange accounts with domestic banks (see Table 17). As a result, the scope for banks to set deposit rates has been reduced. Even though capital mobility is restricted in principle, banks have been forced to offer interest rates on foreign exchange accounts which are competitive with those obtainable abroad because households can otherwise convert their domestic currency into foreign exchange through the kerb market, where rates are close to official exchange rates. This allows them to switch their holdings of deposits denominated in domestic currency into foreign exchange accounts if desired. As a result banks have to offer interest rates on domestic currency deposits which, after allowing for devaluation expectations, are competitive with those offered on foreign exchange accounts.

Competition on the asset side of banks' balance sheets has come from enterprises' increased access to loans from foreign banks, permitting some of them to circumvent the domestic banking system, particularly in Hungary and the Czech Republic. These loans are partly related to foreign direct investment but the phenomenon is more general. Often foreign

[34] A good analysis of the Hungarian case and its implications for monetary policy is to be found in Riecke (1993).

Table 17

Indicators of financial sector developments

Item and country	1986–89	1990	1991	1992
Broad money (as a percentage of GDP)				
Czechoslovakia	68.9	67.9	71.4	83.3
Hungary	49.1	48.0	57.8	61.5
Poland	47.6	32.6	31.7	36.0
Currency to deposit ratio				
Czechoslovakia	14.0	15.5	14.5	13.4
Hungary	31.0	26.4	23.8	23.0
Poland	22.5	24.8	27.4	23.4
Household foreign currency holdings (as a percentage of financial assets)				
Czechoslovakia	0.3	3.5	8.0	13.6
Hungary	1.5	15.0	20.9	18.5
Poland	40.4	57.8	47.2	44.7

Note: Figures are not strictly comparable over time as methods of compiling monetary surveys have changed.

Source: Monetary surveys of central banks.

trade partners assist domestic enterprises in their foreign borrowing activity. The amounts borrowed by enterprises directly from abroad have risen substantially in the recent past and may be close to $1 billion in the Czech Republic and Hungary.

The concentration in the banking system, the number of banks, privatisation and foreign competition can together provide no more than a glimpse of the competitive forces at work in the banking sector. Nevertheless, all these indicators seem to point towards an increase in competition. Whether the extent of the increase is already sufficient to exert a strong disciplinary force on banks is more difficult to judge.

Summary

How effectively enterprises in central Europe are monitored and controlled by owners and creditors will have an important influence on growth prospects. Without effective governance, insider-controlled enterprises will continue to pay wages which bear little relation to productivity and will block resources which might be used more profitably elsewhere. Providers of outside finance, particularly banks, will be reluctant to risk their capital in enterprises over which they have insufficient control. Can existing banks play a role in corporate governance in central Europe? Broadly speaking, there are two views. One holds that banks should take a more active role in corporate governance and the restructuring of enterprises. The other suggests that banks are burdened by non-performing loans, are colluding with enterprises and are generally incapable of a constructive role in the economy.

Much of the discussion to date has taken place against the background of theoretical arguments and anecdotal evidence. This paper has presented empirical facts which shed some light on the situation of banks in former Czechoslovakia, Hungary and Poland. It has documented how the problem of non-performing loans has been addressed and has shown that banks have become much more prudent in their lending behaviour. It has argued that this change in behaviour is linked to the changed economic and legal environment banks are facing, supporting the contention that banks, like enterprises, react to changed constraints and incentives. Clearly, banks should be allowed to play a more active role only if they themselves are subject to effective control. Two dimensions of the governance of banks have been examined. One is prudential regulation and supervision. These were tightened substantially in 1992 and have arguably played a large role in the more prudent behaviour of banks. The other one is competition between banks, which seems to have increased too.

Although the perception that banks have responded to the changed legal and economic environment by behaving in a much more prudent manner seems to suggest that they are already able to play a larger role in corporate governance, this alone is clearly insufficient. Curtailed lending to enterprises may not only reflect prudent behaviour, but also the limited capacity of banks to evaluate risks and monitor borrowers in a market environment. Building up those skills will take time. In addition, non-performing loans remain a matter of concern – if to varying degrees – and there is still great scope for improving bank supervision. Finally, competition between banks, although increasing, appears to remain weak in major segments of the market.

One difficulty in the preparation of this paper has been that in many areas the basis for drawing strong conclusions is lacking owing to the limited availability and uncertain reliability of data. The banking field is also one which is evolving rapidly. The picture painted here is therefore probably best looked upon as a preliminary outline of the issues and problems involved. Conclusions must of necessity be highly tentative. Clearly, the environment in which banks are operating and their behaviour have changed much more than seems to be commonly acknowledged. It has also, however, become evident that the difficulties that remain to be overcome are substantial. Therefore the involvement of banks in corporate governance and restructuring is not without risks, a situation which is unlikely to change in the near future.

Annex:
A simple model of the spread between borrowing and lending rates

The goal is to analyse the factors which contribute to the spread between borrowing and lending rates. This is done with the help of a simple model which describes the spread as a function of inflation, non-performing loans, and compulsory reserve requirements.

Our starting point is the highly stylised balance sheet of the banking system shown below. Assets consist of performing (*L*) and non-performing loans (*NPL*) as well as compulsory reserves (*R*). Liabilities are deposits and other borrowings (*D*) and own capital (*CAP*).

Stylised balance sheet of the banking system

Assets (A)	Liabilities
Performing loans (*L*)	Deposits and borrowings (*D*)
Non-performing loans (*NPL*)	
Compulsory reserves (*R*)	Own capital (*CAP*)

Banks receive interest income on performing loans (*L*x *i*) and on compulsory reserves (*R*x *r*). Expenses are interest paid on deposits and borrowings (*D*x *d*) and operating costs (*C*). The stylised profit and loss statement is then:

Stylised profit and loss statement

Revenues	Costs
Interest on performing loans (*L*x *i*)	Interest on deposits (*D*x *d*)
Interest on compulsory reserves (*R*x *r*)	Operating costs (*C*)
	Profit (*P*)

The banking system's profit can be expressed as:

$$(1)\quad P = L \times i + R \times r - D \times d - C$$

The profit expressed as a percentage of assets is the so-called rate of return on assets (*RORA*):

$$(2)\quad RORA = \frac{P}{A}.$$

The rate of return on equity (*RORE*) is defined as

$$(3)\quad RORE = RORA \times \frac{A}{CAP}.$$

The real rate of return on equity (*RRORE*) is defined as

$$(4)\quad RRORE = \frac{1 + RORE}{1 + \pi} - 1$$

with π being the inflation rate. The lending rate (i) can be expressed as a function of the borrowing rate (d) augmented by the spread (s):

$$(5)\quad i = d + s.$$

Through substitution of (1), (2), (3) and (5) into (4) and solving for the spread we obtain:

$$(6)\quad s = \frac{\frac{CAP}{A}[(1+\pi)\times RRORE + \pi] - \frac{R}{A}\times r - \left(\frac{CAP}{A} - \frac{NPL}{A} - \frac{R}{A}\right)\times d + \frac{C}{A}}{\left(1 - \frac{NPL}{A} - \frac{R}{A}\right)}.$$

The extent to which the amount of non-performing loans, compulsory reserve requirements or other factors such as inflation contribute to the spread can be calculated by solving this equation twice. First a "baseline solution" is obtained by inputting the parameters of the banking system to be analysed. Then the parameter whose influence on the spread we wish to determine is set to zero and the equation solved a second time. A comparison of the two solutions gives a rough estimate of the contribution of the parameter in question to the interest rate spread.

Appendix Table 1

Data and assumptions used in the simulations

Item	Czechoslovakia	Hungary	Poland
Borrowing rate	6.6	18	34
Inflation	11	23	43
Interest on compulsory reserves	0	3	0
Capital-to-asset ratio (%)	5	4.5	9.5
Deposits as a percentage of liabilities	45	57	61
Operating costs as a percentage of assets	2.4	4.0	2.3
NPL as a percentage of assets	14	14	14
Target real rate of return	10	10	10

Sources: Interest and inflation rates are taken from central bank bulletins. Interest rates are for December 1992. Inflation is the 1992 average, which is taken to be a reasonable expectation of inflation expectations. For Hungary, data are from OECD (1993). The stylised facts for this country are for the four large banks, not the entire banking system. Non-performing loans are taken from national sources as reported in Table 1. Compulsory average reserve ratios are taken from Table 8. Balance-sheet information for Czechoslovakia is the average of ratios in 1991 for Komerční Banka, Investiční Banka, and General Credit Bank Bratislava, taken from the Eura-CD database. Balance-sheet ratios for Poland are own calculations based on information on the six to nine major commercial banks, as reported in Ministry of Finance, The Banking System in 1991, and Gazetta Bankova.

In order to solve the equation, a real rate of return has to be assumed (*RRORE*). A useful guide in setting the target rate of return is a comparison with other industries or with the banking sector in other countries. Some arbitrariness is inevitably involved. Therefore it is useful to know how sensitive simulation results are to the target real rate of return. Sensitivity analysis suggests that results do not vary greatly over the range of plausible values.

It may be worth pointing out that the contributions of various factors to the interest rate spread as calculated with this simple model are not additive. Owing to multiplicative linkages in (6), the simulated contributions do not sum to zero. Interaction effects are, however, small, so the simulated contributions are reasonably precise. The data and assumptions used in the simulations are shown in Appendix Table 1.

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