

**AN EVALUATION OF FINANCIAL
SECTOR RESTRUCTURING IN THE
CZECH REPUBLIC**

by

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A thesis submitted to
the University of Birmingham
for the degree of
Doctor of Philosophy
(Economics)



Department of Economics
School of Social Sciences
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July 2001

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SYNOPSIS

The thesis focuses on the Czech banking reform, with the objective to analyse factors affecting its profitability and efficiency. These factors are reviewed in terms of corporate governance in banks and the Czech financial sector restructuring programme. Chapter **One** addresses the importance of the financial system and the extent to which banks in transition economies can fulfill pre-requisites for allocative efficiency. Chapter **Two** describes the Czech financial restructuring programme, in terms of its impact upon the structure of banks, the development of legal framework for banks. It points out the fact that the success of the structural-institutional economic reforms were to a great part undermined by political interests. Chapter **Three** is on methodological issues. It also analyses the performance of the sample banks based on ratio analysis. Chapter **Four** provides an empirical examination of corporate governance within big banks, newly established small banks, foreign bank branches/subsidiaries, and privatized banks. While foreign banks are identified as best practice banks, domestic banks were found to lack control by owners. Significant improvements were observed at privatized banks. Chapter **Five** provides a critical evaluation of the restructuring programmes in terms of moral hazard. Chapter **Six** attempts, first, to estimate the degree of X-efficiency of banks in the Czech banking market and, second, by identifying the sources of cost and profit inefficiency by taking an econometric approach. In terms of the specific estimation technique both a Econometric Frontier Approach and Distribution Free Approach are applied. The chapter identifies that domestic banks were not worst performers. The **final chapter** gives a summary on the main empirical findings and shows avenues for further research.

**Dedicated to my mother and father,
my sisters Ayse and Zuhal**

Acknowledgement

All praise be to Allah who has ordained that “man can have nothing but what he strives for.” I am deeply indebted to my primary supervisor Professor Andy Mullineux, for his invaluable insight, criticisms and suggestions. I would also like to express my gratitude to other members of the panel of supervisors Professor Jim Ford, Dr. David Dickinson, Mike Walker and Professor Jens Hölscher. My thanks to Professor Jens Hölscher, who co-supervised this research for two years and offered numerous valuable comments and criticisms. I am also grateful for his invitations to attend symposia on the financial sector in Central and Eastern Europe, both in Germany and in the UK. Thanks to Professor Jim Ford, Dr. Dickinson and Mike Walker who also provided helpful comments and discussions. I am also grateful to Professor Frantisek Turnovec (Charles University in Prague) and Dr. Johannes Stephan (Institute for Economic Research Halle) for comments.

I am also grateful to the Alumni Association Bursary Fund that has financially supported my fieldwork in the Czech Republic. My indebtedness also goes to those who provided help in gathering primary data for this research: All the banking staff at various Czech financial institutions that I interviewed deserve thanks, in particular Mr. Miroslav Pise, the Advisor to Charmain and CEO of the Ceska Sportelna, for his help in arranging meetings and interviewees.

My deepest gratitude and indebtedness is extended to my father, who has provided me the opportunity to pursue the graduate studies at the University of Birmingham and for accompanying me to the Czech Republic. And, as well, my thanks go to my mother, my sisters Ayse and Zuhal, who always gave their best for me.

ABBREVIATIONS

CMEA	Council for Mutual Economic Assistance
CMHB	Ceskomoravska hypotecni banka (Czech-Moravia Mortgage Bank)
CNB	Czech National Bank
CSOB	Ceskoslovenska Obchodni Banka (Czech-Slovak Foreign Trade Bank)
DFA	Distribution Free Approach
FDI	Foreign Direct Investment
FSP	Foreign Strategic Partner
GE	General Electric Co.
IAS	International Accounting Standards
IPF	Investment/Voucher Privatisation Fund
IPB	Investicni a Postovni Banka
KOB	Konsolidacni Banka Praha
NBC	National Bank of Czechoslovakia
NBP	National Bank of Poland
NEE	Newly Established Enterprises
NPF	National Property Fund
PLS	Profit and Loss Sharing
SFA	Stochastic Frontier Approach
SMEs	Small and Medium size Enterprises
SOB	State Owned Bank
SOE	State Owned Enterprise
TEs	Transition Economies (comprises <u>only</u> Central and Eastern Europe)
TOZ	Permanently Revolving working capital credits (nonperforming loans) inherited

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CHAPTER ONE

CREATING AN EFFICIENT FINANCIAL SECTOR

1.1 Introduction

1. Background to the Study

Structural-institutional economic reforms (in other words, systemic transformation), and in particular, reforms to establish or strengthen financial institutions have recently started to receive significant attention in economics. This is due to the unique opportunity offered by the transition process which has enabled researchers to investigate, at first hand, the interdependency between economic growth and financial development. Indeed, while in developed market economies the financial sector and economic growth have evolved hand in hand and over long periods of time, banking systems in transition economies (TEs) needed to be established from scratch.

The performance of banks is generally assessed by looking at their role as engines of growth. The availability of external finance at low cost is crucial for investment and growth. Therefore, efficient performance of banks is seen as a prerequisite. An efficient banking sector is one which generates low spreads through the competitive pricing of both deposits and loans, and efficiently allocates scarce resources collected from savers (scarce, because it is costly for the banks to collect deposits, since they have to offer interest) to the investor who promises the highest returns with the side-condition of a low risk of default.

There is no clear-cut answer to the question of what type of system of finance for investment makes the best contribution to the successful performance of an economy. In general, two types of banking systems may be distinguished. While in bank based systems (also known as insider systems)¹ the national savings are allocated in the form of short- and long-term credits to non-financial enterprises,

¹ See for arguments in favor of insider system Yang, H. (1996, pp. 103).

banks in market based systems (also known as outsider systems) provide mainly short-term financing. In market based systems, thus, most corporate financing is conducted via the capital market. Care needs to be taken not to characterise a financial system as a market or bank based system merely by looking at the peculiarities which differentiate universal banking from specialised banking. In a universal banking system, banks are permitted to undertake commercial and investment banking activities in one institution, whereas in a specialised banking system these activities are conducted by different institutions (credit business via the commercial banks and securities business via the investment banks). The banking systems of the US and UK are characterised as market-oriented systems, whereas the banking systems of Germany and Japan are labelled as bank-oriented systems, despite the existence of universal (specialised) banks in these market- (bank) oriented systems. The main characteristics of bank-based systems vis-à-vis market-oriented systems are as follows:²

- a higher degree of indebtedness of the enterprises,
- a higher share of bank loans, particularly long-term, in corporate financing,
- long-term relations between banks and enterprises,
- high concentration of ownership and investors,
- banks' share in borrowers' equity capital
- cross shareholdings among enterprises being common,
- no frequent change of shareholders

A gradual process in establishing banking systems in developed market economies resulted in different banking systems in different countries because these were influenced by the institutional peculiarities which prevailed at that time. The bank or market orientation of a financial system is hence dependent on the regulatory frameworks of the country in question.

The creation of a capital market, where resources are allocated efficiently, is essential to achieving the transformation of the economies in Eastern Europe. This is

² For an extensive analysis of the merits of the 'bank-based' German system of finance for investment see Edwards, J.S.S. and Fischer, K. (1994).

because catch-up development needs growth, and growth depends on investment. On the one hand the financial system is expected to contribute to finance investment by offering financial products and stimulating savings. On the other hand the financial system is expected to help when investment needs to be undertaken to increase the capacity of the economy to grow, that is, when maximum use is being made of existing productive capacity.

Apart from easing the transition process by mobilising funds from savers to investors, banks in TEs have a particularly important role to play in terms of getting involved in the investment process and promoting entrepreneurship. A successful real sector restructuring with the emergence of new private enterprises, as well as the requirement to help existing state owned enterprises (SOEs) adjust to the new environment in TEs, requires the involvement of banks which are expected to combat the negative effects of informational asymmetries. Banks are necessary because the emergence of new private enterprises is associated with *ex ante* informational asymmetries, which may result in credit rationing. The situation in credit markets, where a borrower is refused credit regardless of the price he is willing to pay is termed credit rationing. This occurs when lack of information prevents lenders from perfectly distinguishing between good and bad firms. As a consequence, there is an increased demand for loans by potential borrowers who are less likely to pay all of them back. To obtain funds such high-risk borrowers are also willing to pay high interest. However, high interest rates induce low-risk investors to withdraw from the market which in turn lowers the average quality of borrowers (*adverse incentive effect*).³ Consequently, high-risk borrowers are more likely to be selected (*adverse selection effect*).⁴ Asymmetric information can create another problem known as the moral hazard problem which arises after the transaction is entered. Once a borrower has acquired a loan, his informational advantage over lenders gives him an incentive to pursue higher yielding but more risky projects. One way in which banks deal with

³ Jaffee, D. and Stiglitz, J. (1990).

⁴ Adverse selection problem was first outlined by Akerlof (1970).

moral hazard is through credit rationing.⁵ An additional factor which calls for banks is associated with SOEs which need to adapt to the new environment, and therefore require *ex post* informational asymmetries to be overcome and the new governance structure to be imposed to bridge the gap created by the withdrawal of state control via privatisation.⁶ Thus to accelerate economic growth there is a need for a competitive financial system which contributes to overcoming *ex ante* informational asymmetries and to providing finance to new private enterprises as well as one which allows for the efficient corporate control structure of SOEs by overcoming *ex post* informational asymmetries. The policy designers need therefore to pay particular attention to improving the efficiency of existing intermediaries and to enhancing their ability to detect profitable investment opportunities in order to support real sector adjustment.

The main sequence of reforms in TEs was rooted in the neo-classical approach and generally exhibited the following sequential pattern: (i) breaking up the monobank system; (ii) improving the financial position and efficiency of the state banks by dealing with the problem of bad debts, and undertaking corporatization and restructuring programmes; (iii) establishing a regulatory and supervisory function; (iv) introducing private and foreign banks; and (v) privatising SOBs.⁷ The endeavours to create allocatively efficient banking systems in most TEs turned out to be no straightforward task. Pre-requisites for allocative efficiency in bank were either not in place, or impaired by transition policies, or were simply not addressed.

Macroeconomic stability is crucial for the allocative efficiency of banks. However, in TEs systemic transformation, be it gradual or rapid, required drastic economic restructuring and readjustment, giving rise to the general phenomenon of ‘transitional recession’ which reduced economic activity. Often, non-performing loans have increased due to transformational recession, in addition to those due to the socialist legacy. Debts turned bad when companies ran into financial difficulties.

⁵ For details see Mishkin, F. S. (1995, pp. 274).

⁶ Buch, C. (1996b).

⁷ Rostowski, J. (1993).

Banks kept crediting those bad debtors, because they feared that not crediting them could result in a loss of all their outstanding receivables.⁸

Deregulated interest rates are necessary for the functioning of the financial sector in as much as it is an important prerequisite for allowing the competitive pricing of banking services. But during the initial phases of transition, interest rate liberalisation in several TEs led rapidly to high real interest rates, which are necessary for stabilisation. This was partly responsible for an increase in bad loans.⁹ Concurrently with interest rate liberalisation, the presence of great numbers of bad debts left no other option to the central banks but to pursue a high interest rate policy. As a consequence, banks not only had to experience negative real interest rates on deposits but also had to maintain a wide spread of interest, thus increasing the cost of borrowing to creditworthy enterprises and the Government. Furthermore, high real lending rates bore the risk of adverse selection.

The ability to assess risk is an important criterion determining the competitiveness of banks. Having more know-how than competitors gives competitive advantage to conduct sophisticated methods of lending. However, the advantages which state owned banks (SOBs) may have with respect to acquiring and processing information about firms was outweighed by a lack of skilled personnel.¹⁰ Experience was needed to overcome both internal weaknesses and to be able to operate in the new formal institutional structure of a market economy.¹¹

Moral hazard behaviour on the part of bank managers, mainly arising from implicit state guarantees, is one of the main sources of inefficiency. An appropriate regulatory environment is necessary to create the right incentives for bank managers. However, in particular during periods of transition, the sources of possible environmental pressures are imperfect. They are mainly encouraged by

⁸ Jochem (1996, pp. 123) shows this with a simple two period model which is based on the model of Stiglitz and Weiss (1981, p. 405).

⁹ Buch, C. (1996a).

¹⁰ Gregg, R. S. (1995, pp. 35).

¹¹ A bank's age might be related to its efficiency, since bank production might involve "learning by doing" (Mester, L.J. 1996).

underdeveloped regulatory structures and the reluctant implementation of prudential regulations. Furthermore, different approaches to bank and enterprise restructuring presented a variety of opportunities to individuals at managerial level as well as at the level of the ruling elite.

Competition is crucial for cost minimisation. In most TEs proposals of free entry for foreign banks on the grounds of their ability to help to establish a secure banking system and hence bring about macroeconomic stability were largely rejected.¹² The discussion before foreign banks were admitted was centred around the danger that the stability of the domestic financial system would be at stake if domestic banks could not survive competition, eventually making the economy dependent on the good-will of foreign banks. In fact, newly established domestic banks were too small and inexperienced in banking operations to offer effective competition. Therefore, the banking systems remained generally concentrated leading to inefficiencies, in as much as bankers had little incentive to diversify and little incentive to reduce their lending and deposit margins and fees.¹³

The quality of loan portfolios and credit risk is crucial in determining the profitability of financial institutions. However, when the monobank was partitioned SOBs inherited large volumes of bad loans. Given that credit risk - the risk that a borrower will default on a bank loan - is particularly high in a transitional environment, in most TEs the stock problem of bad debts was quickly overshadowed by the flow problem. The banking systems of most TEs remained burdened by considerable numbers of problematic accounts even after the completion of the consolidation efforts.

A diversified loan portfolio is a further aspect of an allocatively efficient financial sector. However, during the transition process banks are likely to face problems in obtaining reliable information. In most TEs the lack of or an underdeveloped bankruptcy law and institutions for claiming overdue loans, as well as

¹² Rostowski, J. (1993).

¹³ For details on competition see Estrin, S. (1994, p. 14).

lack of a market for collateral pledged, were among the most important factors inhibiting successful lending. Furthermore, coupled with the inability to assess the creditworthiness of new private enterprises, due to a lack of track records, prudent loan assessment was additionally inhibited by the lack of appropriate financial accounting and reporting systems.¹⁴ As the information needs of equity investors will be different from those of loan creditors, enterprises in a country characterised by the presence of loopholes in its legislation have an incentive for “window-dressing,” i.e. manipulating financial reports. This induces credit rationing in favour of already established clients. Lenience on behalf of banks to their ailing clients, however, also affects good companies. Those who service their debt are likely to pay for these subsidies in the form of the high cost of services and high borrowing rates.¹⁵ Credit rationing may also be induced by the expectation of recovering the non-performing loans.¹⁶

Extensive research has already been conducted to analyze the efficiency of the financial systems of several TEs. A comparison of the empirical results and policy implications of these studies suggests that the empirical findings cannot be generalized to other TEs; not surprisingly, given the wide variety of institutional, political, economic and cultural differences which led to different models of bank restructuring constructed by policy makers. This implies that the factors which impinge on the efficiency of banks in different countries need to be investigated individually. With respect to the Czech Republic there are only a few comprehensive and in-depth analyses of the impact of financial sector restructuring upon the efficiency of state owned banks (SOBs), newly established banks (NEBs) and foreign banks. More specifically, there is no in-depth analysis of the quality of corporate governance within the Czech banks and the financial sector restructuring programme, which may have provided wrong incentive signals to bank managers. Effective corporate governance in banks (pertaining to

¹⁴ Details about the financial accounting and reporting systems in the Czech Republic and Poland can be found in **Appendix A1-1**.

¹⁵ The high borrowing rates coupled with low deposit rates generated large spreads. Due to insufficient own funds in order to establish a satisfactory cushion against loan losses, banks have no other choice but to recapitalise themselves through high interest rate spreads. However, high interest rate spreads imply at the same time a process of financial disintermediation. Low interest rates for savings result in reduced incentives to save. High interest rates on loans conversely constrain the demand for credit.

¹⁶ See Jochem, A. (1996, pp. 123).

competitiveness), besides banking supervision and prudential regulation (pertaining to stability), is important in creating an allocatively efficient banking system. The transformation process in the Czech Republic assigned a special task to the domestic financial institutions. Despite the difficulties involved in the transition from a socialist system to a market economy, the SOBs took over the functions of development finance institution whose non-existence or shortage were severe obstacles to an efficient intermediation; in short, they had to “fill gaps”. As also noted by Worth, “the natural role of banks in [a] transition is to facilitate the replacement of central plans of financial intermediation and to do this in [such] a way as to bring to bear market forces in the process.”¹⁷ Furthermore, the lack of primary markets for the issue of equity shares made enterprises especially dependent upon external finance. However, the persistence of close relationships between governments, present and former SOBs and state-owned enterprises (SOEs), in addition to implicit state guarantees, was likely to create a situation of widespread moral hazard in the banking sector of the Czech Republic. Because the political system and the economic sphere were deeply entrenched together during the socialist regime, the pursuit of market type economic reforms proved to be the reverse of straightforward. Individual decisionmakers were likely to behave opportunistically, a view which is much emphasised in political economics.

Furthermore, due to the lack of accounting data, the econometric estimations of possible X-inefficiencies¹⁸ have only recently begun to be measured and explained across all TEs. There appear to be no studies on the X-inefficiencies of the Czech banking system. This study aims to partly fill these two gaps: firstly, it examines the quality of corporate governance within banks, and, secondly, employing an econometric model it examines both the extent of inefficiency and the factors which caused inefficiency in the Czech banking sector during the period 1992-1999.

2. Aims of the study

This thesis aims to provide both quantitative and qualitative evidence on performance and efficiency of the banks in the Czech Republic. **Chapter Two** describes the market and regulatory structure of the Czech banking system and also the initial attempts made to reform it, such as the set-up of the Czech financial restructuring programmes.

¹⁷ Worth, N. (1990).

¹⁸ The term X-inefficiency describes the differences between actual and minimum cost, reflecting differences in managerial ability to control costs (or maximise revenues).

It shows that during the application of diverse recovery approaches to the banking system prudential regulations were not in place, that the Czech authorities procrastinated the privatisation of their banks and that ultimately the entry of foreign banks was restricted to their participation in the privatisation of domestic banks. **Chapter Three** focuses on methodological issues and provides an analysis of the questionnaire survey. It also compares the performance of SOBs, NEBs, privatised banks and foreign banks on the basis of quantitative data. **Chapter Four** analyses the quality of the corporate governance of the banking system, drawing on questionnaire and interview results as well as quantitative data. The empirical analysis pinpoints the differences as well as the possible causes of banking profitability and efficiency between SOBs, NEBs and foreign banks. **Chapter Five** provides a critical evaluation of the findings in particular with regard to moral hazard incentives associated with the recovery approaches and the legal framework which were likely to undermine even further the quality of corporate governance in domestic banks. While the empirical analysis for measuring bank performance in these chapters is based on comparing critical variables and financial ratios, the aim of **Chapter Six** is to provide an empirical analysis of Czech bank data to assess the efficiency of the system. Cost and profit inefficiencies are estimated by applying a parametric technique. To distinguish true randomness from X-inefficiencies the Stochastic Frontier Approach (SFA) and Distribution Free Approach (DFA) are applied. The concluding chapter, **Chapter Seven**, reviews the main findings of the thesis and suggests implications for banking in the Czech Republic and other TEs, in particular for those which are in the initial stages of their reform.

1.2 Theoretical Background of Banking in Transition Economies: a Literature Review

In contrast to developed market economies, banking reforms in TEs needed to consider the dynamics of international financial markets, because of the long term

strategy of joining the international financial community. Hence, economists are placed in a dilemma when they were asked by TEs to recommend one banking model or the other.

Attempts to create an efficient banking sector are impaired by transition specific problems. One important characteristic of banks in TEs, as opposed to banks in developed economies, is their dual role in terms of financial intermediaries and partners of enterprises. As the financing and restructuring of SOEs during the transition process is of prime concern research on TEs mainly focused on the most appropriate agent to fulfil this task. McKinnon argues against bank involvement in SOEs.¹⁹ Instead the state should take sole responsibility in ensuring governance in SOEs. Wijnbergen, in contrast to McKinnon, argues that governments in Eastern Europe are unlikely to be able to deal constructively with loss-making SOEs at all, whether slowly or quickly.²⁰ Wijnbergen assigns the role of “agents of change” to commercial banks.

In line with this latter argument further research was triggered by the question whether SOBs, new entrants or foreign banks are best suited to fulfil the task of efficient financial intermediation during the transition period. In other words, the debate is on the question, first, whether governments should try to reform existing state-owned banks - the *rehabilitation* approach, second, whether a new private banking system should be allowed to emerge - the *new entry* approach, and third, whether there should be a mix of the two approaches, in which the activities of state banks were restricted while a parallel private banking system develops. Although in most TEs complementary arrangements have been set up such as twinning arrangements with foreign banks, joint ventures and participation by international institutions, many proposals for financial system design have stressed a large foreign bank presence and full competition between foreign banks and domestic banks. Rostowski argues that due to the importance of a secure banking system for

¹⁹ McKinnon, R. (1991).

²⁰ Wijnbergen, S. (1997, pp. 44).

macroeconomic stability, some of the former centrally planned economies should import foreign banks for the sake of their banking systems, just as they have to import foreign machinery for their productive investment.²¹ It has been suggested that a case for open entry to foreign banks is given in order to enable them to fulfil the critical functions banks must perform especially because domestic banks are in the learning process, and thus not in a position to come up to the requirements of the transition.²²

Restricting entry to foreign banks, it is argued, is likely to limit competitive pressure which is already restricted, given that the capital market and the market for corporate control - still in process of development - cannot be relied upon to raise the efficiency levels of banks in transitional economies.²³ There is fairly conclusive evidence that the exclusion of foreign banks makes domestic banks more profitable but less efficient.²⁴ The study by Terrell finds that OECD countries which excluded foreign banking earned higher gross margins and had higher pre-tax profits as a percentage of total assets.²⁵ However, due to the lack of competition domestic banks were found to have higher operating costs than in countries where foreign banks were permitted to operate.

Claessens performed a cross-country comparison of the institutional development of banks in 25 transition economies.²⁶ His findings suggest that progress can be faster under the new entry approach, especially in relation to the initial conditions. Licensing of *de novo* banks and foreign-owned banks is recommended to improve the competitiveness and the overall efficiency of the banking system. In particular, *de novo* banks are seen as being most capable of delivering banking services to the new private secure enterprises if these are subjected to the same capital requirements and supervisory efforts. Progress under the rehabilitation approach

²¹ Rostowski, J. (1993). See also Yang, H. (1996, pp. 103), Saunders A. and I. Walter (1992); and Schmieding, H. and C. Buch (1992).

²² Rostowski, J. (1993).

²³ Bonin, J. P. and B. Leven (1996, pp. 52). For an extensive analysis of the pros and cons of the presence of foreign banks in emerging markets see IMF (2000).

²⁴ Terrell, H.S. (1986).

²⁵ Ibid.

²⁶ Claessens, S. (1996).

appeared to be inhibited by poor incentives. Regression estimates suggested that - irrespective of the banking reform approach taken - overconcentration, preferential treatment by governments and limited entry for new banks was associated with the slow progress of weak banks. In line with these results the empirical findings by La Porta, Lopez-de-Silanes et al. suggest that government ownership of banks politicises the resource allocation process and reduces efficiency.²⁷ This ultimately retards financial and economic development, especially in poor countries.

Robins conducted a case study in the former GDR on the transplant of “good” banks, i.e. foreign banks, as well as a “good” institutional structure, i.e. the complete West German institutional transfer to the East.²⁸ However, as his findings show, the expectation that the East German economy would soon catch up with West Germany was not fulfilled because the transplanted institutions needed to function within the East German environment. Lack of the underlying conditions necessary for the transplanted banks to develop their business resulted in a situation where West German banks were unable to measure, manage and price risk for East German borrowers.²⁹ Bank-borrower relationships were found to be significant in the management of risk, and thus to be a key component of the West German *Hausbank* system. Hence, West German banks were unable in the early stages to lend to such borrowers on any significant scale and, at the same time, West German bank lending in the East was in decline - in *absolute* terms - as non-performing loans grew. The East German case suggests that foreign banks cannot solve all the financing problems of the local economy, even with a large foreign bank presence and significant favourable conditions. Overall, Robins’ findings in the East Germany, Czech Republic, Hungary, Poland and Russia prove that the involvement of foreign banks in TEs has remained relatively low.³⁰ The policy implications of the findings in the East German case would not be rapid privatisation but would promote competition

²⁷ La Porta, Lopez-de-Silanes et al. (2000).

²⁸ Robins, S. G. (1995).

²⁹ Robins, S. G. (1995, p. 194).

³⁰ Ibid.

because, as the author concludes, in the end it is the local banks which play the largest role in financial intermediation supporting the conclusion of McKinnon³¹, that domestic banks always have to play a major role in the transition process.³²

The research of Dilova-Kirkowa - a case study - showed that foreign banks operating in Bulgaria are likely to be better prepared to undertake credit expansion in the short run.³³ She concludes that foreign banks often served the regional interests of their clients rather than engaging in retail banking in the domestic market.

A further line of inquiry focuses on the benefits of mergers between domestic banks and foreign entities. In merging with domestic banks, it is assumed, highly experienced and financially strong foreign investors may help to overcome the shortcomings of the transition, in particular the managerial deficiencies. The operational and financial expertise of the foreign strategic investors is likely to increase the profitability of the bank. Thus, besides increased consumer surplus, both domestic equity holders and the government will benefit from this profitability. Furthermore, allowing FSPs with operational expertise to take the controlling position in the bank is expected to discipline managers by overcoming the disadvantages of diffuse ownership.³⁴ Hasan and Marton use the econometric frontier model to estimate the profit and cost X-inefficiency of the Hungarian banks.³⁵ They showed that banks with foreign involvement were significantly less inefficient than their domestic counterparts. In the case of the banks examined by Hasan and Marton, the policy implications would be to allow mergers with FSPs. However, research on mergers related to banks in some developed market economies shows that mergers do not always bring efficiency. Berger and Humphrey's study of US banks showed that there were no efficiency gains associated with mergers in which the acquirer was more efficient than the acquired bank or in which both banks were represented in the same

³¹ McKinnon, R. (1993) argues that underdeveloped markets need protection from the biggest banks who would mount an invasion into the country and bring the local banks to bankruptcy.

³² Robins, S. G. (1995, p. 261).

³³ Dilova-Kirkowa, S. (2000).

³⁴ See for further details Claessens, S. (1996, pp. 16).

³⁵ Hasan, I. and Marton, K. (2000).

local market.³⁶ Generalising these findings to the Hungarian case would imply that it is not mergers with an FSP but the promotion of competition that is beneficial.

Apart from the questions of which banking model to implement, which category of banking firms is best suited to take over the task of overcoming transition specific problems, whether foreign bank entry should be restricted, whether mergers between foreign banks and domestic entities should be encouraged, the literature redefines moral hazard in the context of TEs. In general the term moral hazard is used in association with the principal-agent model, which concerns separation of ownership and control and its consequences.³⁷ The principal-agent problem arises when the stockholders (principals) are separate from the managers of the firm, who are agents of the owners. A separation of ownership and control involves moral hazard because the managers in control - having more information about his activities than the stockholder does - may act in their own interest rather than in the interest of the principals, entailing wasteful expenditure or fraud.

The risky economic environment in which TEs are embedded has a constant influence on profitability, making it difficult, if not impossible, to judge the performance of a manager on the basis of enterprise profitability. Increased incentives to take risks on the part of bank managers may result from any of the following: the lack of well-established warning systems and of the failure to incorporate lenders of last resort into a system of effective banking laws during the transition; being a carve-out bank and thus “too big to fail” in the case of big banks; or, in the case of new entrants, the attempts of the authorities to build up a banking system, thereby implying the provision of support in case of banking distress. However, there are theories which claim the opposite. According to the utility maximisation function of managers in enterprises where ownership and control are separated, managers increase their market value in the competition for leadership by pursuing profitable investment projects.

³⁶ Berger, A.N. and Humphrey, D.B. (1992).

³⁷ For research on the economics of information see Ross, S. (1973), Stiglitz, J. E. (1974) and for a brief overview Stiglitz (1989).

This implies that management incentives may depend on reputation.³⁸ Managers in TEs, expecting eventual privatisation, are beginning to signal their ability by means of rational activity, firstly, with the aim of keeping their position after privatisation, and secondly, to enhance their reputation for managerial competence which is crucial in the market for leadership. Particularly in TEs the market value of managers can easily be reduced as the risk of failure is much higher although failure is not always management-induced. Risk of failure and dismissal can cause managers to be risk-averse. However, one side effect of this is that productive investment projects may be neglected. One way for stockholders and debt-holders (owners) to reduce moral hazard problems is to monitor and control the bank's activities. A high degree of ownership concentration may provide a remedy because it is associated with more incentives for information generation and corporate control, thereby reducing the asymmetric information between owners and managers. This in turn reduces the asymmetry between managers' success and failure, which is crucial for the market value of managers. Another way to reduce moral hazard problems is to control banks via policies conducted by governments. However, in the transitional period controls over banks justified by theoretical models do not exist. In addition, in TEs the governmental stockholder-owners of banks do not necessarily aim to maximise profits, as they do under market type conditions. Among others this may be on the one hand due to the restructuring requirement of enterprises and on the other to the policy of avoiding liquidations and hence unemployment.³⁹

The objective of this study is to assess the performance of Czech banks and the factors which affect efficiency by looking at factors which may increase moral hazard incentives on the part of bank managers. In doing so, the studies of various aspects of banking in TEs, briefly alluded to above, will be addressed in the context of the Czech mode of approach to the banking decentralisation during the transition. Assessing efficiency is done by employing an empirical model to estimate the degree of X-

³⁸ Schwiete, M. (1997, pp.95).

³⁹ For details see Estrin, S. (1994, p. 14).

inefficiencies. Conclusions derived from statistical models rest on assumptions, among others, about the characteristics of error terms in the statistical model and the degree to which market conditions are beyond the control of bank management. However, inefficiency due to factors beyond the control of management are likely do be severe in a transitional environment. These may not be captured by quantitative data. The aim therefore is to employ a battery of research methods. In addition to research based on a statistical model, corporate governance within banks - based on case studies of four categories of banking firms, namely state owned banks (SOBs), newly established banks (NEBs) foreign banks and privatised banks - is assessed with respect to efficiency. These findings are expected to lead to trustworthy conclusions from the statistical estimation techniques.

CHAPTER TWO

THE CZECH FINANCIAL RESTRUCTURING PROGRAMME

2.1 Introduction

This chapter is a description of the general context in which the banking system had to function when entering the transition period. From the political economics point of view it first explains why the Czech Government embarked on *laissez-faire* policy and financial liberalisation. It next outlines a variety of proposals on privatisation and their impact upon corporate control, the privatisation method chosen by the Czech authorities and its implications, the market and competitive structure of the financial system and the quality of its legal framework as well as the restructuring measures and policies which emerged to meet the banking problems.

2.2 Transition to a Market Economy - Shock Therapy

Shock therapy comprises early selling off the whole of state industry, reducing subsidies fast, price liberalisation, allowing bankruptcies, low inflation and maintaining stable currency. One side-effect of these measures is that it may bring unpopularity for the politician in power.

In the Czech Republic, after the break-up of Czechoslovakia on 31 December 1992, the Civic Democratic Party under the leadership of Vaclav Klaus was committed to neo-liberal market reforms and opted for a moderate form of shock treatment involving massive privatisation. A comprehensive programme of market reforms was adopted with an emphasis on macroeconomic stabilisation, price stability, foreign trade liberalisation and privatisation. A stable currency, with the koruna tied to a basket of Western currencies, and a restrictive fiscal policy were major components of the reforms. However, the Government's political objective to

weaken the state apparatus could not be separated from its economic objective of a quick transformation of the economy.⁴⁰ Firstly, the liberalising of prices was postponed as such a decision would have overwhelmed prevailing administrative prices resulting in social and political uncertainties thereby threatening political support for reform. Secondly, the requirement to improve efficiency by privatising SOEs and simultaneously generating mass support for reform was achieved via a voucher privatisation scheme which gave the Czech population a chance to be a shareholder.

2.2.1 Voucher Privatisation and Corporate Control

Privatisation enabling private ownership and thus the pursuit of private interest is viewed as a means of bringing about efficiency.⁴¹ However, efficiency is not the only desirable outcome of the new ownership pattern; equity in the distribution of assets is also desired.⁴² But there is a dichotomy between equity, requiring the wide distribution of ownership, and efficiency, calling for more concentrated ownership for the achievement of effective corporate governance. Lack of incentives is particularly the case when there is widely dispersed ownership, whereas a majority shareholder has an incentive to take a seat on the board. The choice of privatisation strategies has different implications for corporate governance. Therefore, privatisation plans - depending on the degree to which they incorporate elements of both of these goals -

⁴⁰ For details see Tomas, M. (1999).

⁴¹ A major theme in the literature on the economics of property rights is the notion that public ownership is inherently less efficient than private ownership (see for a discussion on banks La Porta, R. and F. Lopez-de-Silanes et al. (2000). For a survey of the property rights literature see Furubotn, E.G. and S. Pejovich (1972). The World Bank and the IMF - being committed to a free market ideology - grant structural adjustment loans under the condition that the recipient countries reduce the size of the public sector. With the collapse of communism, the international financial institutions financed privatisation projects in Eastern Europe. The World Bank's view is that the major obstacle to true progress and development in Third World countries is the excessive debt that grew out of excessive dependence on an enormous public sector. For details on structural adjustment loans see Klein, P. (1998). Development economists view the approach of the World Bank and the IMF as too harsh, based on oversimplified assessment of the obstacles to progress and insensitive to the human costs.

⁴² Katz, B.G. and J. Owen (1997, pp. 25-43).

resulted in different economic performances.⁴³ For most enterprises in the TEs concentration of ownership is determined by the privatisation method chosen (Table 2-2-1).

Table 2-2-1: Privatisation method and concentration of ownership

	Restitution	Give away	Investment Funds	Voucher	Auction	Direct sale	Stock exchange
Previous owners	H						
Staff		H				H	
Population			H	L	H	H	L
Foreigners					H	H	L

gratis

sale

H = High ownership concentration

L = Low ownership concentration

Mass privatisation was the main privatisation method in the Czech Republic whereas in Hungary and Poland, mass privatisation was either not used or comprised a small share of the total number of privatised companies.⁴⁴

The aim of privatising large SOEs in the Czech Republic was in addition the rationalisation of production,⁴⁵ to reduce the power of the state. Maintaining state ownership meant a further request for subsidies from the state which could not afford to withstand them for political reasons. A reform, in turn, threatened the privileges of the managerial class associated with the Communist elite and therefore this group constituted a potential threat to the success of privatisation. In order to gain public as well as managerial support⁴⁶ for the privatisation, the Privatisation Ministry adopted a strategy to involve managers in its decision process. To avoid insiders' objection to the reform, managers were asked to submit the most suitable privatisation proposal. With a priori knowledge that the insiders were in the best position to submit the most feasible privatisation project the policy makers presented this process as a democratic and competitive one by giving other prospective investors a chance to participate and

⁴³ Ibid. For the pros and cons of different privatisation methods see Havrylyshyn, O. and D. McGettigan (1999).

⁴⁴ Poland took a gradual approach toward selling its largest companies.

⁴⁵ A survey of the literature on privatisation in transition countries by Havrylyshyn, O. and D. McGettigan (1999) shows that private enterprises almost invariably outperformed state-run companies.

⁴⁶ Staar, R. F. (1990) notes that "the largest potential obstruction to the kind of reforms needed for a genuine renewal [in Poland] are the 900,000 communists who hold the country's most important managerial positions." This observation can also be taken to be valid for all of Eastern Europe.

submit a proposal. Consequently, a decision was made to pursue voucher privatisation as the one best able to align economic and political interests. The public could participate in the reform process by acquiring ownership in large-scale SOEs via vouchers. This was expected to bring support for the reform process: firstly, managers or enterprise insiders were enabled to maintain their managerial positions by acquiring full control of almost half of the SOEs, and secondly, the dispersed ownership structure did not threaten the established power structures in these enterprises.

Privatisation through the voucher method entitled citizens over the age of 18 to receive vouchers which could be used to bid for shares in the companies being privatised (the total volume of assets of approximately CZK 340 bn).⁴⁷ The problem associated with mass privatisation, in particular the feasibility of distributing shares of firms to a large number of individuals in an environment which gives them little chance to exercise their ownership control rights, was thought to be overcome by the establishment of investment privatisation funds (IPFs), which would concentrate shares and exercise control.⁴⁸ Voucher holders could thus, if they preferred, invest in one of the IPFs created during the voucher privatisation in 1992. More than 420 IPFs participated in the first wave of Czech privatisation and 349 IPFs participated in the second wave.

There was high demand for the shares given under the patronage of the National Property Fund (NPF)⁴⁹ by banks as well as by many managers of enterprises with the aim of making windfall profits. During 1995 and 1997 two categories of owners emerged. These were bank-sponsored and non-bank-sponsored IPFs which acquired large stakes in different sectors of the industry. According to the Investment Law the IPFs were not permitted to acquire more than 20% of the equity capital of an

⁴⁷ 1\$ corresponds to CZK (as of 1st of January): 1991 = 27.73; 1992 = 27.840; 1993 = 28.911; 1994 = 30.028; 1995 = 27.937; 1996 = 26.589; 1997 = 27.344; 1998 = 34.438; 1999 = 30.166; 2000 = 35.822; 2001 = 37.619.

⁴⁸ For more information on privatisation and corporate control in the Czech Republic see Schütte, C. (2000), and Buch, C. (2000).

⁴⁹ The NPF was established in 1991 by the State to deal with the privatization process.. The principal purpose of the NPF is to act as transitional holder of all state assets and state enterprises which are to be privatised.

enterprise and the acquisition was not to exceed 10% of its own capital. This limit was usually exceeded by establishing Investment Companies. Similarly, banks were permitted to invest up to 25% of their capital in shares which were also not to exceed 10% of the capital of an enterprise.

These developments brought ownership concentration to the Czech firms as managers, foreign investors and IPFs were able to gain significant corporate ownership by acquiring large ownership stakes. The top five or six funds began in effect to control the economy. The 13 largest IPFs (Table A2-2-1),⁵⁰ mainly owned by large banks, acquired 43% of all vouchers distributed. The involvement of funds as well as large banks in the voucher privatisation scheme led to cross-ownership between IPFs and big banks.

2.2.2 The Czech Financial System

In order to speed up the process of market creation the Czech neo-liberalist Government expected banks to play an additional role so as to overcome "backwardness" and to bear the high credit risk connected with the transformation and privatisation of the non-bank sector. Table 2-2-2 shows the assets, liabilities and the profitability of the Czech banking sector.⁵¹ Judging from total assets, one can conclude that the banking system has expanded rapidly.

⁵⁰ Tables in the Appendix are marked with the letter "A".

⁵¹ CNB 1999.

Table 2-2-2: Balance Sheet and Income Statement of the Czech Banking System (CZK mn)

	1994	1995	1996	1997	1998	1999
Assets						
Cash	22,379	25,221	25,076	26,685	27,016	36,907
Deposits with CNB	69,022	165,295	134,973	190,733	269,934	274,204
T-bills	74,609	155,885	49,299	38,613	53,394	80,556
Deposits and credits with banks	301,213	316,983	385,476	482,003	497,628	572,957
Credits granted	814,842	930,666	879,902	998,451	1,003,635	943,909
Trading securities	92,292	149,995	167,054	97,509	96,362	75,715
Long-term financial investments	16,976	22,988	19,349	91,058	92,760	122,221
Tangible and intangible assets			57,683	61,888	62,999	63,145
Other assets	107,203	118,629	106,314	143,416	158,798	162,264
Total assets	1,498,536	1,885,662	1,886,153	2,222,313	2,424,235	2,533,778
Assets of Banks under liquidation	40,056	36,099				

	1994	1995	1996	1997	1998	1999
Liabilities and Equity						
Due to CNB	77,213	74,066	66,717	73,856	52,843	33,764
Due to other banks	281,601	390,660	445,087	508,760	504,615	492,029
Customer deposits	830,167	952,108	957,409	1,114,915	1,219,014	1,314,417
Equity capital	57,289	65,919	56,568	63,819	74,855	87,934
Reserves	76,576	56,547	35,708	40,014	41,275	45,351
Reserve and capital funds	54,881	73,143	82,310	91,697	107,905	80,069
Other liabilities	120,809	273,219	163,117	224,011	319,375	367,813
Total liabilities	1,498,536	1,885,662	1,886,153	2,222,313	2,424,235	2,533,778

Income and Expenses of Czech Banks (CZK mn)

	1994	1995	1996	1997	1998	1999
Profit from Banking Activity	69,677	72,773	69,557	87,412	96,860	90,286
Interest Income	45,783	52,707	130,860	171,194	209,318	151,954
Interest expenses			90,518	121,510	151,219	101,776
Interest profit			40,342	49,684	58,099	50,178
General operating expenses	28,514	35,918	37,092	42,519	48,094	51,107
Creation of reserves and provisions (net)	28,539	23,140	1,887	29,726	14,673	-3,491
Other operating income (expenses)	-3,102	-6,646	-19,045	-18,146	-42,218	-49,726
Net Profit	6,073	3,604	11,335	-3,356	-8,236	-5,476
Net profit/assets (%)	0.41	0.19	0.69	(0.17)	(0.36)	(0.24)

Source: CNB, 1996, 2000

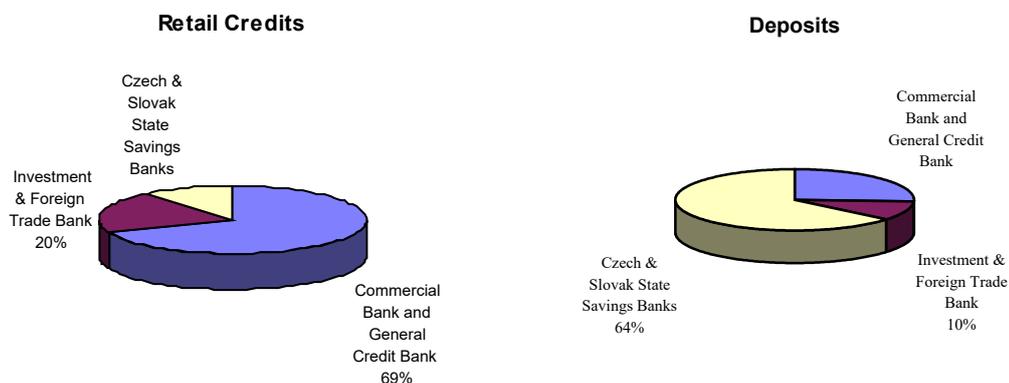
2.2.2.1 Large Banks and Solution to the Inherited Non-Performing Loans

Before the revolution the Czech Republic was dominated by three banks, that is, *Ceska and Slovenska Statni Sporitelna* (Czech and Slovak State Savings Bank), *Investicni Banka* (Investment Bank), *Czechoslovenska Obchodni Banka* (Czechoslovak Foreign Trade Bank), and *Zivnostenska Banka* (Merchants Bank).⁵² *Investicni Banka* (later divided into *Investicni Banka Prague* and *Investicni a Rozvojova Banka Bratislava*) and the two newly created commercial banks, that is, *Komerčni Banka Praha* and *Vseobecna Uverova Banka Bratislava*, took over the credit portfolio of the monobank, National Bank of Czechoslovakia (NBC).

⁵² Details of the history of the large banks can be found in Appendix A 2-2-2-1a.

After the dismantling of the centralised banking system of the former Czechoslovakia in 1990, the “big four” banks - *Ceska Sporitelna* (Czech Savings Bank), *Komerčni Banka* (Commercial Bank), *Investicni a Postovni Banka* (IPB) (Investment and Postal Bank), and *Czechoslovenska Obchodni Banka* (CSOB) (Czechoslovak Foreign Trade Bank) - took the lead in the industry, holding 68% of loans and 65% of assets. By the end of 1990, the banking system of the Czech and Slovak Republics was, therefore, highly concentrated (Figure 2-2-2-1). The pecking order was reversed on the deposit side.

Figure 2-2-2-1: Retail Credits and Deposits of Big Banks of the Czech and Slovak Republics by the End of 1990



Source: CNB (1993). Approximate figures.

The activities of big banks were dominated by their former specialised roles. After the dissolution of the Federal Republic of Czechoslovakia on 1 January 1993 the largest creditors of SOEs were Komerčni Banka and Investicni Banka. Komerčni Banka had considerable market power, as it was, for the time being, almost wholly responsible for the credit business. The Czechoslovenska Obchodni Banka (CSOB) retained its monopoly power in foreign trade and foreign exchange.

Table 2-2-3: Data on Largest Banks (as of December 1995-1996)

Largest Banks	Assets CZK bn	Assets %	Deposits CZK bn	Deposits %	Capital CZK bn	Gross Loans CZK bn	Non-Gov't loans CZK bn	Non-Gov't loans %
Komerční Banka	384	22.8	190	24	30.0	233	212	28
Ceská Sporitelna	349	20.8	289	36	19.0	179	119	16
IPB	209	12.4	96	12	16.1	126	104	14
CSOB	190	11.3	64	8	17.0	100	82	11
Agrobanka	67	4	a	a	3.1	43	a	a
Zivnostenská banka	32	2	16	2	2.0	16	4	1
Consolidation Bank (KOB)	112	7	12	1			78	10
Other banks	337	20	132	17			146	20
Total	1680	100%	799	100			745	100%

^a n.a. but included in other banks. Source: Global Finance, Vol. 10, Iss: 7, July 1996, p. 70; Snyder and Kormendi (1997, p. 109).

Table 2-2-4: Data on Largest Banks (as of December 1996)

Largest Banks	Assets ^b in CZK bn	Equity capital and reserves ^b in CZK bn	Market Share of big banks (in %)		
			Total assets	Deposits	Loans
Komerční Banka	460.9	20.5	21.6	22.6	25.8
Ceská Sporitelna	359.0	10.0	23.3	34.5	14.5
IPB	234.4	8.2	9.7	11.5	12.7
CSOB	209.7	17.4	10.0	7.7	9.9
Agrobanka	68.3	6.8	4.1	4.7	5.0
Zivnostenská banka	31.0	2.2			
Other banks			31.3	19.0	32.0
Total			68.7	81.0	68.0

^bSource CSOB company profile 1997. Source: Global Finance, Vol. 10, Iss: 7, July 1996, p. 70 and Snyder, E. A. and R. C. Kormendi (1997, p. 109).

In 1995 and 1996 the Česká Sporitelna had 36% and 34.5% share of retail deposits, respectively (Table 2-2-3 and Table 2-2-4). In 1995 and 1996 Česká Sporitelna, IPB, Komerční Banka, CSOB and Agrobanka, a newly established private sector bank, controlled 71.3% and 68.7 % of the total banking assets, respectively. As of 31 December 1999 the group of five large banks still accounted for 65.1% of banking sector activities.⁵³

The Consolidation Bank (KOB)

Recapitalization in the Czech Republic was necessary to deal with the legacy of the immediate past as well as to drive the (partial) privatisation of banks. The successor banks of the Czech monobank were relieved of their inherited non-performing loans at the initial stages of the transition by adopting a comprehensive programme

⁵³ CNB (1999).

(Consolidation Programme I). The first measure in correcting the legacy of the past was to grant interest subsidies to these banks in 1990 and subsequent years. Outstanding low interest rate credits were subsidised by the Government which covered the difference from the market rate of interest.⁵⁴ To avoid moral hazard, support was only granted for bad debts which had been proven to be inherited.

In March 1991 a hospital bank, called the Consolidation Bank (KOB), was set up by the Ministry of Finance of the CSFR as a state financial institution to take over the TOZ-credits.⁵⁵ TOZ-credits are non-performing, low interest credits, which were granted before 1989 by the Czechoslovak commercial banks under the instructions of the state. On price liberalisation in 1991, TOZ-loans were converted into standard short-term and medium-term commercial loans with annual interest rates ranging from 20% to 24%, not only becoming a great burden for enterprises but leaving banks exposed to excessive credit risk. The KOB took over from Komerční Banka, Investiční Banka, Všeobecná Uvěřovací Banka and CSOB the so-called TOZ-loans for more than 6,000 enterprises, amounting to CSK 110.8 bn⁵⁶ (of which CSK 30.4 bn came from Slovak enterprises) out of the total of CZK 180 bn then outstanding.⁵⁷ The KOB paid the instalments of these loans with an interest rate of 13% within 8 years. In October 1991 the successor banks were additionally recapitalized by bonds worth CZK 50 Mrd. A share of 20% of this amount was used to recapitalize banks and the remaining bonds were exchanged against loans.

⁵⁴ Buch, C. (1996a, p.30).

⁵⁵ See Appendix A 2-2-2-1b for diverse methods of dealing with non-performing loans.

⁵⁶ Mrd in Czech.

⁵⁷ Detail about the aggregated balance sheet of the KOB can be found in Table A 2-2-2-1.

The Case of Komerčni Banka

The state took several measures to cleanse the commercial loan portfolio of Komerčni Banka,⁵⁸ which had received the State Bank's portfolio of loans granted to SOEs to the sum of CZK 325 bn on 1 January, 1990.

Firstly, in 1991 the KOB took over the revolving credit loans with a gross book value of CZK 79.3 bn in addition to an equal amount of liabilities due to the State Bank.⁵⁹ Secondly, the NPF, which holds equity both in Komerčni Banka and in many of its clients, granted CZK 22.2 bn to the SOEs to reduce their debt burden later in 1991. In line with this latter action the state wrote off CZK 15.1 bn (or 68% of the total) of the Komerčni Banka's commercial loan portfolio which in turn increased the bank's capital by an amount equal to the gross value of these loans, i.e. CZK 15 bn. Thirdly, Komerčni Banka received a share of 10% of the total amount of CZK 7.8 bn which the state bank had earmarked to strengthen the capital base of SOBs. As a result of these actions the bank's loan portfolio was reduced by slightly more than one-third of its original endowment, and the recapitalisation in 1991 increased the bank's capital by 17%. In late 1992 after its partial privatisation, non-performing loans in the amount of CZK 9.7 bn were transferred to the KOB for 80% of their gross book value which in turn increased the bank's capital from CZK 4.6 bn to CZK 8 bn.⁶⁰ In 1992 the KOB bought also non-performing loans incurred by Investiční Banka before 1990 which amounted together with that of Komerčni Banka to CZK 15 bn.

In December 1992 KOB was split into two independent Czech and Slovak entities, whereby KOB-Praha⁶¹ assumed a portion of the assets and liabilities of the original federal KOB. On the liabilities side KOB assumed responsibility for the commercial

⁵⁸ See for more information of the Komerčni Banka Snyder, E. A. and R. C. Kormedi (1997).

⁵⁹ Snyder, E. A. and Kormedi, R. C. (1997, pp. 100).

⁶⁰ Ibid.

⁶¹ The new logo became Konsolidacní Banka Praha, s.p.u.

banks' debts to the state bank and to the savings banks. The KOB also took over part of the banks' refinancing credits and also some deposits lodged by savings banks and insurance companies.

2.2.2.2 Small Banks

After the dismantling of the centralised banking system of the former Czechoslovakia in 1990 banks were expected to help build up the economy and support the creation of a market type political system. There were two key factors in the Government's decision to grant further bank entry into the financial system. Firstly, there was a lack of competition in all sectors of the economy. One of the factors which could progressively bring about a more competitive environment was the emphasis on a fast-growing private business sector with the aim of stimulating competitive pressures and doing business independently from the Government.⁶² With the growing number of new customers, banks were expected to compete by offering a wider and more sophisticated range of services, tapping additional sources of funding. Thus, establishing new banks was seen as the only way to promote the burgeoning of enterprises by accessing banking products at competitive prices. Secondly, the Government pursued a quick privatisation policy. A rapid privatisation process was meant to find new owners as quickly as possible. To implement this strategy banks had to be made into conduits for the initiation of the privatisation process. Therefore, at the beginning of the transition great expectations were placed on small banks to succeed in the transition. Consequently, the Czech banking market became dominated by a few large banks, a large number of very small fringe banks and only a few mid-size banks. The new entrants are generally relatively small and of varying quality and are active primarily in 'niche' markets or in wholesale banking. Small private banks represent only one third of the banking sector. In 1994 the number of banks on the Czech banking market reached its highest level with 55 financial institutions,

⁶² Author's interview with Ludek Prochazka, Director of Banking in Bankruptcy and Liquidation at the Consolidation Bank, (10 April 1998).

including 20 foreign bank subsidiaries and branches (Table 2-2-5). However, chartering requirements were not stringent and prudent, according to market-type criteria.

Table 2-2-5: Number of Banks by Group (as of end of year)

	1.1.90	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total banks of which:	5	9	24	37	52	55	54	53	50	47
Large banks	5	5	6	6	6	6	6	5	5	5
Small banks		4	14	19	22	21	18	12	9	4
Foreign banks			4	8	11	12	12	13	14	14
Branches of foreign banks				3	7	8	10	9	9	10
Specialised banks				1	5	7	8	9	9	9
Banks under conservatorship					1	1	0	5	4	0
Banks without licence						1	4	6	10	5

Source: CNB.

2.2.2.3 Foreign Subsidiaries and Branches

Initially, the entry of foreign banks was restricted to joint ventures with local partners. The subsequent banking law of 1991 allowed foreign banks to open branches and subsidiaries.⁶³ As a consequence, bank clients could opt among several reputable foreign banks which offered sophisticated services at favourable terms. In the face of a high degree of concentration in the banking system and in order to bring about a more competitive environment the Government, as well as granting charters for new banks together with foreign banks, imposed an anti-monopoly clause in the banking law requiring banks to reduce their market shares to 30% by early 1995.⁶⁴ However, the amendment on a 30% limit on market shares for big banks was revoked in mid-1995, following sustained opposition from Česká Sporitelna and the CNB. Allowing market entry of further domestic banks and foreign subsidiaries had perhaps the greatest impact in stimulating banking competition. De-monopolisation of the demand helped to spread the provision of banking services. New loans to new businesses, coupled with the writing-off of uncollectable loans to old, loss-making customers, has helped to increase the market share of new banks at the expense of the old banks. Both the

⁶³ Data on foreign banks in the Czech Republic can be found in the Table A4-4-2.

⁶⁴ See OECD (1998b, pp. 73) for a detailed information on competition regulation in the banking sector in the Czech Republic.

Komerční Banka and the foreign trade bank CSOB lost their stranglehold as a result of competition from foreign and local banks. The newly formed subsidiaries of foreign banks rapidly gained a major share of the market. In 1998 the share of foreign bank assets in the Czech Republic reached 41%.⁶⁵ During the same period Hungary had the largest share of foreign bank assets with 48%, whereas foreign banks in Poland had a share of 33%.⁶⁶

Since 1995/1996, however, the strategy of the Czech Government has been to reduce the number of existing banks in the country by imposing restrictions on the chartering of both domestic and foreign applicants. Although according to the European Association Agreement, Article 45 and its following articles, every enterprise has a national treatment; Annex 16A stipulates that because of the special case of transition foreign and EU banks may be restricted from entering the Czech banking market until 2005. Yet, preference has been given by the CNB to foreign banking groups which are interested in the acquisition of a bad bank. As of July 31, 2000 the CNB registered the following banks with mostly (more than 50 %) domestic and foreign financial participation (Table 2-2-6):

Table 2-2-6: Banks with mostly (more than 50 %) Domestic and Foreign Financial Participation

Banks with mostly Czech financial participation	Banks with mostly foreign financial participation
1. Česká Sportelna	1. Československa Obchodni Banka
2. Komerční Banka	2. Banka Hana
3. Expandia Banka	3. GE Capital Bank
4. Plzenska Banka	4. IC Banka
5. První mestská Banka	5. Interbanka
6. Union Banka	6. J&T Banka
	7. Raiffeisenbank
	8. Zivnostenska Banka

Source: Homepage of the CNB.

The strategy behind restricting entry for foreign branches and subsidiaries *per se* was threefold. Firstly, to give the existing domestic banks time to consolidate and to create economies of scale via mergers, in particular in the light of the imminent EMU and the single market. Secondly, to avoid an outflow of the best clients to foreign banks.

⁶⁵ "Foreign Banks' Advance Continues in East Europe," Reuters, Soderlind, Rolf, 25.08.1999.

⁶⁶ Ibid.

Given that domestic big banks were specialised the policy makers feared that loss of clients to diversified foreign banks would substantially limit the ability of domestic banks to undertake the high credit risk connected with transformation.⁶⁷ The presence of a high total of bad loans, an underdeveloped capital market, several banks being under the conservatorship of the CNB and thus inactive, and the cost of funding being in general higher than the net interest rate on the loans provided by the competitors were seen as crucial factors impeding effective competition.⁶⁸ Thirdly, given the lack of domestic funds to consolidate and restructure the ailing domestic banks, foreign investors who would rescue the Czech financial sector by acquiring them were viewed as the only alternative. Especially where partnerships are formed with domestic banks through joint ventures or take-overs, foreign entry through the acquiring of ailing banks was expected to bring ‘know-how.’⁶⁹

2.2.2.4 Regulation of the Capital Market

The emergence of the Czech capital market is closely connected to the process of voucher privatisation which gave it the character of a secondary market. During this process the capital market was a medium for redistributing the shares of almost 1,800 former SOEs, which was many more than Hungary or Poland had. The liberalisation policy and the speed and size of the privatisation method applied led to a fragmented capital market. In addition to the *Prague Stock Exchange* two other equity securities markets exist in the Czech Republic: the *RM-system* and *direct sales over the counter* (OTC) with the use of the *Securities Centre* as the only registration centre for the transfer of ownership of securities between individuals. Furthermore, a third market, the *RTP market*, was launched in summer 1996.⁷⁰ Lack of control mechanisms over

⁶⁷ Ing. Pavel Kysilka, Csc. Vice-Governor of the CNB, “The costs of Transformation: Impact on the Banking Sector.” Translated by Ing. Stanislava Janackova, CSc. the Institute of Economics, CNB.

⁶⁸ Pragobanka is a case in point. As the bank is under the conservatorship of the CNB, the bank is unable to provide new loans since September 1997 (Author’s interview with Petr Musil, Manager Correspondent Banking Department, (16 April 1998).

⁶⁹ An indirect advantage of the latter strategy of foreign bank entry via the acquisition of existing ailing banks is the amelioration of the Government’s revenue problems (discussed in section 5.3).

⁷⁰ Details about the Czech capital market can be found in the Appendix A 2-2-2-5.

the capital market resulted in non-transparency and exploitation in as much as the speculation-oriented transactions of securities in each of the above-mentioned markets was resulting in distorted share prices.⁷¹ In pursuit of the mass-privatisation programme the Government neglected regulation and insider dealings burgeoned within such opaque financial market structures. Only in April 1997 did the Government take measures - in response to public pressure - to correct this market failure by proposing the creation of an independent, American-style securities commission and a new unit to fight financial crime.⁷²

2.2.3 Legislative Framework for Banking

2.2.3.1 Prudential Regulations

The regulatory framework for banks and prudential regulation was established with the passage of the Act no. 21/1992 Coll. on banks and Act no. 22/1992 Coll. on the State Bank of Czechoslovakia in effect since 1 February 1992. Although the regulation is based on EU rules and Basle standards, some rules apply specifically to the Czech Republic.⁷³

The banking law allows a wide range of commercial and investment banking activities. Banks generally hold universal banking licenses differentiated by the range of foreign exchange transactions permitted. Regulations on solvency, liquidity, credit exposure and foreign exchange open positions have been in force since March 1992. Further amendments were made for the establishment of safer banks coming into effect in Autumn 1998 and at the beginning of 1999.⁷⁴

⁷¹ Annual Report Agrobanka.

⁷² "More defenestrations in Prague," *The Economist*, 31.05.1997.

⁷³ For the process of implementing the EU regulatory standards see Matousek, R. (1998, p. 12).

⁷⁴ Dates of approval of amendments and changes in the Czech Banking Act:

Amendment: 264/1992 Coll.	Amendment: 84/1995 Coll.	Amendment: 127/1998 Coll.
Amendment: 292/1993 Coll.	Amendment: 61/1996 Coll.	Amendment: 165/1998 Coll.
Amendment: 156/1994 Coll.	Amendment: 306/1997 Coll.	
Amendment: 83/1995 Coll.	Amendment: 16/1998 Coll.	

Capital adequacy standards are stipulated in the Capital Adequacy Directive (effective 1 January 1996). The required capital adequacy ratio under the regulations of the CNB was increased from 6.25% to 8% by 31 December 1996. However, this directive did not distinguish between credit and non-credit risk. Only since April 2000 has capital adequacy incorporated both credit risk and market risk.

The CNB requires the creation of reserves and provisions for anticipated risks and potential losses. The newly introduced reporting systems for asset quality and provisioning requirements became mandatory in the second half of 1994. They require banks to base loan classification on indicators such as the delay in the duration of payments and the quality of the borrower (Table 2-2-7).

Table 2-2-7: Provisioning Requirements

Asset	Description	Provision
Standard	less than 1 month overdue	0%
	1-3 months overdue, rescheduled before 6 months, but no longer than 3 years ago	5%
Substandard	3-6 months overdue, rescheduled within the last 6 months	20%
Doubtful	6 months to 1 year overdue	50%
Loss	overdue for over 1 year; debtor under bankruptcy or settlement	100%

Source: CNB.

Rules for maximum exposure and great credit risks existed, but full compliance was only required since the beginning of 1996. The maximum debt to equity ratio for related party debt is 6:1. Concerning large credit exposure limits the following guidelines apply:

- a. Credit risk exposure of a bank on another Czech or OECD bank - or connected banks - is limited to 125% of the bank's capital.
- b. Credit risk exposure to any other counterparty or to any group of connected counterparties is limited to 25% of the bank's capital.
- c. The ten largest credit risk exposures of a bank may not exceed 230% of the bank's capital.
- d. Credit risk exposure of all counterparties connected to a bank - where the bank has a stake over

10% in that entity - may not exceed 20% of the bank's capital.

- e. Total credits to the ten largest debtors or group of connected debtors under (b) and (d) above must not exceed 230% of the bank's capital.

The CNB can set minimum liquidity reserves (usually non-interest bearing) up to 30% of non-bank liabilities. Liquidity reserves above the 30% bear interest at CNB's discount rate (§25). Penalty interest on shortfalls of the liquidity reserve can be up to three times the discount rate (§26).

Initially, the minimum reserve requirements for non-interest bearing deposits with the central bank were 4% of time deposits and 12% of demand deposits. To check the money supply for domestic lending, the CNB imposed a unified reserve requirement of 8.5%. As of August 1996 the CNB raised the minimum reserve requirement from 8.5% to 11.5% of personal deposits. An amendment to the CNB Provision, effective from January 1996, increased the total limit for the open foreign exchange position for banks and branches of foreign banks from 15% to 20% of bank capital. Additionally a limit of 15% of capital was introduced for open bank positions in individual convertible currencies.

Banking regulation and supervision became stricter only recently. Banks are required to report their solvency and liquidity ratios quarterly to the central bank and every month must report credit risk exposures exceeding 10% of capital. The Banking Supervision Department asks auditors to verify the quality of prudential returns prepared by banks. If evidence of financial problems surfaces, the CNB has the right to increase supervision and demand monthly or even weekly reports. Banks failing to comply with prudential regulations can be fined up to CZK 50 mn (\$ 1.9 mn).

The introduction of a bankruptcy law was postponed twice until its final implementation in April 1993. Enterprises and banks, however, which have more than 50% of their shares still to be privatised are shielded from bankruptcy during the privatisation process. This rule affected 78% of the firms in the first round of the

voucher privatisation, including the SOBs. In 1994, the CNB finally began to enforce the bankruptcy law against small commercial banks. Initially, the owners of the bank - as was the case in enterprises - appointed a liquidator. The amendment of 1 February 1998 stipulates that a liquidator in the banking sector must be recommended by the CNB and appointed by the court.

2.2.3.2 Creditors' Rights under the Bankruptcy Law

In the case of the Czech Republic the Federal Assembly approved the Bankruptcy and Composition Act (No. 328/1991) in July 1991 but delayed enactment of the law until 22 April 1993 in order to prevent reform from being stalled by massive litigation and because of the threat of social tensions connected with bankruptcy, and concerns expressed by banks related to the large number of bankruptcies anticipated.⁷⁵ Unlike bankruptcy laws in most Western countries, the Act applied to both entrepreneurs and business entities, including partnerships. A bankruptcy order can be proposed by the debtor, creditors or liquidator of a business entity by filing a petition with the appropriate court. Such an order cannot be proposed if the debtor's assets will not cover the cost of proceedings. The debtor is declared bankrupt when the debtor's property rights are transferred to a court-appointed administrator. The security interests in Czech Law are included mainly in the civil code, the Securities Act and the Bonds Act, which contains provision for all types of securities as well as choosing the order in which creditors will be repaid. The Czech civil code requires a lien to

⁷⁵ The Polish and Hungarian governments forced the liquidation of bankrupt companies and introduced bankruptcy laws in the early 1990s. Hungary and Poland brought in laws to protect loans granted by banks and other creditors closer to those of the UK effective from 1st of May 1997 and the beginning of 1998, respectively ("Safety first for Loans; - loan security laws in Poland, Hungary and the Czech Republic-," *The Banker*, April 1997, Vol. 147, n854, p. 42 (3). In Poland, creditors may accept a mortgage over real property, which is either owned by the debtor or held by him under the right of 'perpetual usufruct' for 99 years. Under the Hungarian civil code, the taking of security requires a written agreement between parties.

secure a debt. The civil code provides that the lien that is first in time shall prevail unless the law specifies otherwise.⁷⁶

Overall, by the Act No. 328/1991 Coll. on Bankruptcy and Settlement banks had little support to enforce their right in case of a delay in the payment of a loan on the part of enterprises. Since 1991 no comprehensive bankruptcy law has been drafted. However, the Act No. 328/1991 Coll. on Bankruptcy and Settlement has been revised several times. An amendment to the Act was passed on March 25, 1993 giving debtors a protection period of three months (with an option to extend by a further three months) to overcome financial difficulties and settle terms with creditors. In 1995 there were some changes in the bankruptcy laws to expedite liquidation proceedings. An amendment to the Act on Bankruptcy and Settlement, effective June 1996, puts restrictions on a bankrupt's recourse to a grace period or to blocking of the creditor's claims through legal recourse. The amendment was expected to eliminate many of the obstacles existing under the law by clarifying the bankruptcy process and strengthening the position of creditors against fraudulent acts on the part of debtors. A protection period will apply only if the debtor submits a concrete proposal for legal settlement with creditors, and only if he has more than 50 employees.⁷⁷ Furthermore, the Act gives bankruptcy estate administrators more powers to preserve or sell the bankrupt firm, as opposed to being forced to hold it in a conserved state. The latest amendment to this Act entered into force on 1 May 2000 contributing to a better balance between the rights of creditors and debtors.⁷⁸ The amendment provides for new obligations upon bankrupts and trustees, including responsibility and penalties for any breach of these obligations, and confers greater rights upon creditors. Creditor committees have the power to dismiss court-appointed trustees and banks do not need a court order to collect collateral when businesses default.

⁷⁶ "Safety First for Loans; Loan Security Laws in Poland, Hungary and the Czech Republic," *The Banker*, April 1997, Vol. 147, n854, p. 42 (3).

⁷⁷ "Czech Republic; Banking System Report," *BankWatch*, August 1996, p. 8.

⁷⁸ Czech Republic - 2000 Article IV Consultation Mission Concluding Statement. IMF. May 9, 2000.

2.2.3.3 The Introduction of Deposit Insurance

The Czech Republic established obligatory insurance of natural persons' deposits on 29 July 1994 with Act No. 156/1994.⁷⁹ With this amendment state guarantees of deposits in selected banks, i.e. the Česká Sporitelna, Komerční Banka, IPB and Zivnostenská Banka, were terminated. The new scheme is compulsory and is funded by pro-rata levies on the banks. Under this law, banks must contribute 0.5% of the value of such amounts to the insurance fund. The maximum limit of cover is relatively small: explicit insurance available for "known" accounts, covering 80% of the insured deposits up to CZK 100,000 (\$ 3,840) per depositor per bank.⁸⁰ The coverage was later increased to CZK 300, 000.⁸¹ Legal entities are excluded from the deposit insurance scheme.

2.2.4 The Secondary Banking Crisis

Since 1993 the secondary banking sector experienced several crises.⁸² In order to gain public confidence and prevent a domino effect in the small banks sector the CNB initiated a programme for small bank consolidation at the beginning of 1996, known as the Consolidation Programme II. External audits of banks' portfolio quality, the volume of provisions and reserves, showed that the actual capital adequacy compliance by banks was lower than stipulated by the regulations. Consequently, banks were instructed to meet the target of 8% by 31 December 1996. On the basis of the results obtained, a decision was made to adopt one or more of the following methods with each ailing bank:

Decrease of initial capital and introducing conservatorship

⁷⁹ See Matousek, R. (1998, pp. 37) for details on the deposit insurance in the Czech Republic.

⁸⁰ The Banker, April 1996, p. 40.

⁸¹ Deposit insurance is a problem of economic possibilities. The EU standard is 20, 000 Euro, whereas the Czech deposit insurance is CZK 300, 000, which is half the EU standards. The economic possibility of the fund of deposit insurance does not allow for the time being an increase of deposit insurance and therefore the country might claim some transitional measures adopted by Portugal, Spain and Greece.

⁸² Details about the distressed small banks can be found in Table A2-2-4.

In cases where management and shareholders were unqualified or are not interested in a recovery of the bank, supervisors were authorised by the law - approved in June 1994 - to pre-empt crises by putting a bank under state administration and to lower their basic capital by the amount of their losses, net of reserves, if the losses equal 20% or more of equity. Conservatorship was maintained until a new investors was found or the bank was merged with another bank. In cases with no prospects the bank's activity was terminated by declaring bankruptcy or by liquidation.

Liquidation

The termination of a bank's operation by revoking its banking licence was employed when banks had large losses, where there was little prospect of profitability if the bank continued its activities and when there was a minimal willingness among shareholders and new investors to participate in covering the losses resulting from the previous activities of the bank.

Sale

In cases where losses were lower and the detailed monitoring of the situation in the bank indicated a chance of its recovery, improvement of its management and profitability, the CNB supported a sale to some other bank with the potential inclusion of this acquisition in the structure of the buyer.

Increase of initial capital by existing shareholders or a new investor

This method was used when the current shareholders or new investors expressed their willingness to restructure the bank and to cover the losses. One ailing small size bank which was rescued by this approach was Interbanka. The bank was recovered by a foreign investor. The new foreign investor had to present the CNB with a report on its

long term strategy together with a proposal for improving the distressed situation of the bank.⁸³

Table 2-2-8: Outcome of the Consolidation Programme II

Method of solution	Name of banks (number)	Share in total assets of the banking sector in % as of 30.6.1996
Decrease of initial capital and conservatorship	COOP banka, Velkomoravska banka, Podnikatelska banka, Ekoagrobanka and Realitbanka (5)	1.64
The termination of bank activities	Prvni slezaska banka and Kreditni banka Plzen (2)	1.24
Sale	Ekoagrobanka, Bankovni dum Skala and Evrobanka (3)	1.66
Increase of initial capital	Banka Hana, Moravia Banka, Universal Banka (3)	3.96
No solution required	(3)	1.13
Total number of ailing banks	(18)	8.84

Source: Annual Report CNB (1997). Note: The total sum does not equal the total of individual methods because in one bank two methods (conservatorship with decreasing initial capital and sale of the bank) were combined

Of the overall number of 18 small banks, 15 were under the Consolidation Programme II with radical solutions, such as revoking the licence or imposing conservatorship, with reduction in capital being applied in nine cases. In others, to cover the banks' potential losses initial capital was increased in co-operation with either shareholders or new investors (Table 2-2-8).

Depositors of the banks covered by the Consolidation Programme II were paid off up to CZK 4 mn, which was above the limit of the Deposit Insurance Fund (CZK 100,000 at maximum). The amount above the Deposit Insurance Fund limit was constructed so as to satisfy a maximum number of clients, not only natural persons but also small size enterprises. The compensation payments up to CZK 4 mn satisfied more than 99% of the whole number of clients, with respect to the total value of deposits, covering about 66%.⁸⁴

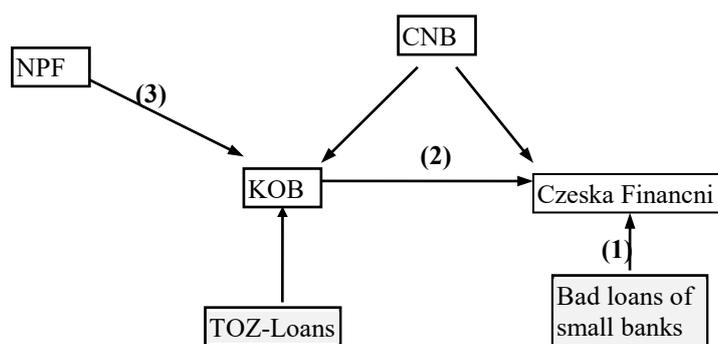
Despite the restructuring measures adopted by the CNB within the framework of the Consolidation Programme II, the population lost trust into newly established small banks and more household deposits were shifted to large banks. For the third quarter of 1996 deposits in small banks were reduced by 14%, and by 56% in banks

⁸³ Interview with V. Prokes, Senior Manager at Interbanka, (7 April 1998).

⁸⁴ Annual Report CNB (1997).

under compulsory administration, whereas a striking inflow of deposits in the four big banks, mortgage savings banks and foreign bank branches and subsidiaries could be observed.⁸⁵ Increasing threats of deposit withdrawal to small banks led to a decision to adopt further measures stipulated under the decree of 16 October 1996, called the Stabilisation Programme entailing Ceska Financni (Czech Financial Institution), a sub-division of the CNB (see Figure 2-2-4 (1)). Ceska Financni purchased insolvent receivables from banks at their nominal value, up to a maximum of 110% of a bank's capital. The participating banks were obliged to create annual reserves of at least one-seventh of the value of the receivables sold in order to be able to remunerate Ceska Financni in seven years time.

Figure 2-2-4: KOB and Ceska Financni



The Consolidation Bank (KOB) acted as intermediary between the CNB, Ceska Financni and the NPF. The Ceska Financni received loans from the CNB via the KOB to buy the bad assets of small banks (2). Hence, the assets of the Ceska Financni were bad assets from small banks and its liabilities consisted of bank loans by the CNB. The expenses were covered by the NPF (3). The Ceska Financni became responsible for the recovery of bad loans from borrowers on behalf of participating banks. In the course of subsequent years further distressed banks joined the Stabilisation Programme by selling their bad assets to Ceska Financni.⁸⁶ The financially distressed banks which had voluntarily joined the Stabilisation Programme

⁸⁵ Ibid.

⁸⁶ In 1997 these were Banka Hana, Zemska Banka (now Expandia Banka), Pragobanka, Moravia Banka, Universal Banka and Foresbank.

had to submit a report on their planned restructuring measures. These banks were also obliged to meet certain prescribed terms besides having to comply with the general prudential limits. These so-called restructuring programme indicators were assessed each quarter and comprised *inter alia*:

Capital adequacy:	minimum 8%, within two years 10%, target 12%
Ratio of risk-weighted assets to total assets:	maximum 75%
Ratio of variable-yield securities to total assets:	maximum 5%
Ratio of quick assets to total assets:	minimum 15%
Ratio of assets and liabilities due within one month:	minimum 60%
Ratio of earning assets to total assets:	minimum 60%
Ratio of operating costs to total assets:	maximum 3%
Ratio of operating costs to profit from banking operations:	maximum 60%
Creation of reserves for guarantee to Ceska Financni:	1/7 annually

During 1999-2000 the Czech financial sector experienced a further crisis within the small co-operative saving banks sector, the so called *Kampelicky*.

2.2.5 Privatisation of Big Banks

The first Government of the Czech Republic followed a unique brand of economic libertarianism⁸⁷ and political nationalism and rejected foreign involvement in the economy, in particular in core industries. Accordingly, the state has maintained a stake of 30-50% in every major bank since the beginning of the economic transformation. Only one old bank, namely Zivnostenska Banka, was privatised to foreign strategic partners (FSPs) in 1992. Maintaining state stakes in big banks helped the Government to absorb the risks of financing SOEs. In view of the expected state support in case of financial difficulties, retaining capital participation in some large banks served also as

⁸⁷ Neoclassical economics is considered with theory and is founded on assumptions. Economic libertarianism is a philosophy and a political movement which places a high value on individual freedom.

a guarantor of stability in the whole banking system.⁸⁸ Indeed, in the course of the banking crisis in 1996 only private banks were threatened by bank runs.⁸⁹

In September 1996, however, the CNB outlined the proposals for the privatisation of the four big banks. Gradually the ownership structure of the banking sector with respect to the share of foreign capital is changing. The next large bank which was partly privatised to FSPs was IPB in 1998. As of 31 December 1999 foreign ownership in Czech banks stood at 48.4%, which is 9.6 points higher than at the end of 1998.⁹⁰ In particular, four issues induced a decision to privatise domestic banks to FSPs: firstly, the lack of capital began to restrict the Czech Government to restructure the banks and improve their efficiency. With the deterioration of the international rating of the country, access to international sources of finance became difficult. Thus, the lack of domestic capital was likely to result in a leveraged sale of the banks: Investors A and B would borrow from Komerční Banka and Česká spořitelna respectively to invest in each other. Furthermore, in the Czech Republic, besides the lack of domestic investors, there was a lack of knowledge of banking business and restructuring expertise. Lack of funds for investment into advanced systems forced banks to continue to operate under outdated information technology which further impeded effective competition with technologically advanced foreign entrants. The privatisation of big banks, and hence capital injection, was expected to improve the banks' profitability by providing the means for new and sophisticated banking services and also by tapping international sources of finance once the good rating of the international stakeholder eased the process.

Secondly, the corporate sector lacked adequate corporate governance on the part of big banks, delaying the much required restructuring even further. Since the start of the transition the Government was reluctant to privatise its stakes in banks as the three big banks were the main lenders to large SOEs. The Czech Government

⁸⁸ OECD (1998b, p. 72).

⁸⁹ Chvojka, P. (1996). Chvojka is Chief Economist at CSOB.

⁹⁰ CNB (1999).

avoided any policies which might lead to unemployment, the presence of which might have threatened its power. To avoid a democratic backlash the implementation of the bankruptcy law in the Czech Republic has been postponed. Most big Czech banks were for almost a decade supporting companies which were doomed to fail. Despite banks' awareness of non-repayment, ailing enterprises were provided with loans to finance the wages of employees. However, misallocation of the household savings or distracted capital allocation began to lower international competitiveness. Although the privatisation of big banks meant illiquidity and the bankruptcy of many SOEs - ultimately increasing unemployment in the country - it was expected to allow the pursuit of business strategies unfettered by Government policies, thereby helping to restructure SOEs and write off bad loans.

Thirdly, even the biggest Czech banks were small on the European scale. Compared with European banks, CSOB, for example, ranked 70th in 1997.⁹¹ The country was going to join the EU and launching these institutions in the European market would only worsen their competitive position. Offering big banks for privatisation was the only alternative to enable these institutions to compete effectively with European banks.

2.3 Consequences of the Transformation Strategy

The Czech banking reform and domestic financial liberalisation were only partial successes. The consequences of failure of the Czech political elite to take a better path than the Polish and Hungarian authorities became apparent at the beginning of 1997. Growth of the Czech GDP contracted through 1999, while the Polish and Hungarian

⁹¹ CSOB is fourth in the list of top 100 Central European banks (The Banker September 1997, p. 68). The World Ranking of the biggest Czech banks is as follows: Komerční Banka (279), IPB (406), CSOB (436), Česká Spořitelna (460). (The Banker July 1997, p. 191).

economies showed real growth rates of 6.8% and 4.6% respectively in 1997, and 4.8% and 4.9% in 1998 (Table 2-3-1 and Table 2-3-2).⁹²

Table 2-3-1: GDP at Current Prices

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Czech Republic (in bn CZK)			1019.7	1,182.7	1,381.1	1,572.3	1,680.0	1,820.7	1,817.06	1,873.4
Poland (in bn Zlotys)			155.8	223.9	306.3	385.4	469.4	549.5	611.6	
Hungary (in bn Forint)	2,521.7	2,970.3	3,581.5	4,405.7	5,614.0	6,893.9	8,540.9	10,075.0		

"Czech Republic," IMF Staff Country Report No. 99/91 August 1999; "Poland," IMF Staff Country Report No. 00/61 April 2000; "Hungary," IMF Staff Country Report No. 00/59 April, 2000.

Table 2-3-2: Real GDP (percentage change from previous year)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Czech Republic*	-1.2	- 14.3	-3.3	0.6	2.7	6.4	4.3	-0.8	-1.2	-0.4	+2.9
Poland	- 11.6	-7.0	2.6	3.8	5.2	7.0	6.0	6.8	4.8	4.1	
Hungary	-3.5	- 11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	4.9	4.2	

Source: "Czech Republic," IMF Staff Country Report No. 99/91 August 1999; "Poland," IMF Staff Country Report No. 00/61 April 2000; "Hungary," IMF Staff Country. *= data from 1996 onwards is taken from the Czech Statistical Office (2001) and is in 1995 prices.

Table 2-3-3: Savings and Investment as % of GDP in 1993-99

Czech Republic	1993	1994	1995	1996	1997	1998	1999
Investments ¹⁾	27.4	29.8	34.0	34.9	32.8	29.7	28.5
Current account	1.3	-1.9	-2.6	-7.4	-6.1	-2.4	-1.9
Gross national savings	28.7	27.8	29.9	28.1	26.3	27.3	26.6
Gross government savings	7.4	6.4	7.8	6.6	5.5	5.8	5.0
Gross savings of households			7.1	6.8	7.1	6.2	6.1
Gross savings of enterprises			15.0	14.7	13.6	15.3	15.5

¹⁾ = Gross capital formation = fixed capital formation + changes in stocks.

Source: Ministry of Finance; own calculations.

One can observe that during the period studied Government and household savings fell, whereas gross savings of enterprises report positive growth rates but only since 1998 (Table 2-3-3). While a decline in public savings is likely to be transformation induced, a decline in household savings is likely to result from reduced confidence in the stability of the banking system. Low or negative real deposit rates, in 1994-97,

⁹² Published economic information on the Czech Republic is derived mainly from the Czech Statistical Office (CSO) or the Czech National Bank (CNB). It is however worth noting that these statistics, and the component data on which they are based, may be unreliable and may not have been compiled on the same basis as in Western economies.

were additionally responsible for achieving lasting increases in household deposits (Table A2-3). Failures in financial sector policies induced enterprises to have recourse to self-financing.⁹³

Investments, in turn, after having risen initially show a decline since 1997 (Table 2-3-3). The liberal transformation process had to be slowed down very soon as it maintained a good deal of state control in the economy, and the Government's failure to restructure industry has been weighing on the country's growth rates since the mid-1990s.⁹⁴ The voucher privatisation has turned out to be a pseudo-privatisation because it has created a situation in which funds owned by banks have become the main shareholders of Czech companies.⁹⁵ Since the Government owned the banks, those companies have effectively remained in Government hands.⁹⁶ Lack of management expertise and weak equity and debt markets left enterprise illiquid and pushed these units even further toward bankruptcy.⁹⁷ Instead of openly and systematically restructuring SOEs, the Czech Government was forced to continue to subsidise SOEs in order to prevent economic collapse. Soft budget constraints in turn were likely to create moral hazards for economic and political actors. The Polish and Hungarian authorities managed to avoid such problems by creating a system which allowed the forced liquidation of bankrupt companies in the first years of their free-market transformation in the early 1990s.

2.4 Summary

In this chapter, the structure of the Czech banking sector was outlined and the characteristics of its intermediation function and the institutional framework that emerged from the Czech transformation strategy were described. It was concluded that the Czech economy had experienced more economic

⁹³ For evidence on increased self-financing see Buch, C. (1996a, p. 210 and 262), and Buch, C. (1996c, p. 51.)

⁹⁴ For details see Tomas, M. (1999).

⁹⁵ Turnovec, F. (1999).

⁹⁶ Ibid.

⁹⁷ Buch, C. (2000).

distress than its neighboring countries although it seemed initially to be performing better. One of the main features of the Czech financial system was that SOBs had to help the State to pursue its goal of maintaining SOEs in order to avoid mass unemployment.

CHAPTER THREE

EMPIRICAL SURVEY WORK

3.1 Introduction

This chapter outlines the methodology of the research. After an explanation of the research objectives, the use of case studies in research is delineated. Next the chapter comments on the research design and explains the sources of data, methods of data collection and analysis. While both survey and interview results are assessed mainly in the course of the case studies on SOBs, NEBs, foreign banks and privatised banks in Chapter Four, section three in the present chapter gives a summary only of the questionnaire survey, together with comments. The final section of the chapter gives an overall assessment of the profitability and efficiency of the different categories of banks on the basis of quantitative data and ratio analysis.

3.2 Methodological issues

3.2.1 Research Objectives

The research objective is to compare banking performance of four different categories of banks based on original interviews and survey data as well as quantitative data. In particular, the research aims to identify the quality of the principal-agent relationship between the utility managers and the stockholders at different categories of banks. In short, the aim is to answer the question of what factors induced the poor managerial performance which undermined the efficient performance of banks in the Czech Republic.

3.2.2 The Use of Case Studies in Research

Case studies are particularly appropriate in areas where theory is not well developed.⁹⁸ Such studies represent an exploratory device which can be used as a precursor to large scale survey research.⁹⁹ Case studies may suggest hypotheses for scientific testing at a later stage using representative samples, and are a method by which hypotheses are formulated to explain observation.¹⁰⁰ Those theories which provide convincing explanations will be retained and used in other case studies, whereas theories which do not explain will be modified or rejected.¹⁰¹ Therefore, the objective of individual case studies is to explain the particular circumstances of the case, whereas the objective of a research programme based on case studies in a particular area is to generate theories capable of explaining all the observations which have been made.¹⁰² Such an approach to case study research requires theoretical generalisations, and not statistical generalisations.¹⁰³ The former attempt to generate theories so as to explain the observations which have been made. The latter, conversely, are concerned with statements about statistical occurrences in a particular population. Although such statements may enable researchers to make predictions about occurrences they do not always provide explanations of individual observations.¹⁰⁴ Besides the fact that events in TEs, in contrast to developed market economies, are changing rapidly, each TE has country-specific events, or facts, which show how the process has evolved. Consequently this has implications for theoretical developments and further empirical work. Therefore, while resorting to banking theories which help to understand banking developments in TEs great emphasis must be placed on observation. Accordingly, the adopted research method is to use case studies with the aim of exploring traits of different categories of banks with regard to factors which undermine efficient financial intermediation in the Czech Republic. The results

⁹⁸ For details see Gill, J. and P. Johnson (1991, p. 119).

⁹⁹ Ibid.

¹⁰⁰ Glaser, B. G. and A. L. Strauss (1967).

¹⁰¹ Ibid.

¹⁰² Yin, R. (1989, p. 46).

¹⁰³ Ibid, p. 21.

¹⁰⁴ Ibid.

obtained can be evaluated with regard to their conformity with existing theoretical propositions.

3.2.3 Research Design: Sources of Data and Methods of Data Collection

(a) Qualitative and Quantitative Data

In order to strengthen the credibility of the analysis, this thesis combines qualitative and quantitative data. Given the recent history of banking in TEs the questionnaire survey and semi-structured interviews were adopted as the primary sources of data. Secondary sources of data are mainly the financial statements of sample banks taken from the databank BankScope which provides detailed financial data for banks in many countries. Annual reports collected during the fieldwork provide additional sources of information. In fact, the quantitative data will show "what" happened, whereas the qualitative data will show "how" and "why" certain events occurred.

(b) Sampling Decision

A decision was made to prepare case studies on SOBs, NEBs, foreign banks, and privatised banks. Banks within these categories were selected randomly. Apart from large, small and medium size banks, foreign bank branches and subsidiaries, the views of several other institutions were regarded as important, including liquidators, the central banks, bank associations and the like. Questionnaires were sent to most banks' head offices mainly in Prague and Warsaw. Interviews were arranged before the fieldwork as well as at short notice during the fieldwork. Sometimes opportunities arose through contacts with those already interviewed. Through this it was possible also to contact specialised financial institutions, such as mortgage banks.

The research was conducted in two stages. In the first stage from October 1997 onwards up to 100 pilot questionnaires were sent to banks in Czech Republic and Poland.¹⁰⁵ However, only a few banking staff was prepared to fill in questionnaires. A re-design of the questionnaire did not improve the response rate. Overall, nine banks (two of which were foreign) in the Czech Republic responded to the questionnaire survey, while one Polish bank returned a filled questionnaire. Realising that the response rate was not representative, the interview method was adopted for the collection of data.¹⁰⁶

By the time the fieldwork began in April 1998 the Czech banking market was dominated by 5 large banks, 4 small domestic banks, 24 foreign bank branches and subsidiaries, 9 specialised banks and 5 banks without a licence, making a total of 47 banks. Primary information was obtained from all five big banks (one of which had an FSP), 2 small and medium size banks with an FSP, 1 specialised mortgage bank, and 6 foreign banks (one specialised). Information was also obtained from 2 failed banks and 2 banks under conservatorship. It was also possible to interview 2 representatives of the Consolidation Bank, 1 representative of the Bank Association and 2 Czech National Bank (CNB) officials.¹⁰⁷ It was possible to interview eight out of the nine respondents to the questionnaire. The main interviews were conducted in April 1998, and during the process of data analysis the information collected was supplemented with follow-up questions and requests for further information.

In Poland difficulties arose in arranging meetings for interviews with bank managers both before and during the fieldwork. Only one interview with a foreign bank manager was possible. Access to managers was not made easier by secretaries who could speak neither English nor German. Therefore, the thesis focuses on the Czech banking sector only, but, as will be seen, reference will be made to the Polish banking sector where this was judged to illuminate the topic. Altogether 37 subjects

¹⁰⁵ A sample of the questionnaire may be found in Appendix A 3-2-3a, filled by the Ceska Sporitelna, a SOB.

¹⁰⁶ See sample letters and expose in Appendix A 3-2-3b.

¹⁰⁷ See Appendix A 3-2-3b for the report on the fieldwork and details of the interviewees.

were the source of the primary data in this thesis. The information received during the fieldwork is supplemented with evidence coming from the pilot questionnaires, few though they are in number and the secondary data received during the fieldwork such as documents given only on a promise not to disclose certain details and not for immediate publishing in the Czech Republic.

To assess the overall financial performance of SOBs, NEBs, foreign banks, and privatised banks annual reports obtained during the fieldwork and data from BankScope were used. These two sources of data made it possible firstly, to consider further 15 commercial banks, which neither participated in the questionnaire survey nor in the interviews and secondly, to consider financial data for the years which followed the fieldwork, that is, the years 1998 and 1999. This increased the number of sample banks for financial analysis to 30, including 11 foreign banks and five wholly or partly privatised banks. Sample banks are as follows:

Sample Banks (1992-1999)			
(Banks that took part in the survey are printed in bold type)			
1. Ceská Sporitelna	BB	19. Velkomoravska Banka	NEB
2. Ceskoslovenska Obchodni Banka	BB	20. Banka Hana	FSP
3. Investicni a Postovni Banka	BB-FSP	21. GE Capital Bank (Agrobanka)	FSP
4. Komerčni Banka	BB	22. Interbanka	FSP
5. Zivnostenska banka	BB-FSP	23. Bank Austria	FB
6. AB-Banka	NEB⁺	24. Bank Austria Creditanstalt	FB
7. Bankovni Dum Skala	NEB	25. BNP-Dresdner Bank	FB
8. Ceska Exportni Banka	NEB	26. Citibank	FB
9. Ceska Moravska Hypotecni Banka	NEB⁺*	27. Commerzbank	FB⁺
10. Ceskomoravska Zarucni a Rozvojova	NEB	28. Credit Lyonnais Bank Praha	FB
11. Coop Banka	NEB	29. Erste Bank Sparkasse	FB
12. Expandia Banka	NEB	30. Hypo-Bank	FB
13. Foresbank	NEB	31. Midland Bank	FB⁺
14. Moravia Banka	NEB	32. Raiffeisenbank	FB
15. Pragobanka	NEB	33. Societe Generale	FB
16. Prvni Mestska Banka	NEB	34. Vereinsbank	FB
17. Union Banka	NEB	35. Wüstenrot	FB⁺*
18. Universal Banka	NEB		

BB = big bank; NEB = newly established small bank; FB=foreign bank subsidiary or branch; FSP= partly or entirely privatised bank; * specialised bank; ⁺=financial institutions which are a source of primary data but are not considered in the financial analysis.

(c) Questionnaire and Interviews

The questionnaire responses covered the period 1992 to 1997. This was found to be appropriate for seeing whether any improvements could be achieved after almost half

a decade. Identifying the year in which a change occurred helped in the design of topics to be addressed during the interviews in order to trace the underlying causes. A decision was made to conduct semi-structured interviews because a pre-definition - as is the case in structured interviews - in an environment where issues are changing rapidly would have inhibited interviewees in giving first hand evidence about their specific experiences. Each interview started with a statement of the topic investigated, specifically that the aim was to find out the causes of obstacles to the banking business, i.e. to explore the effects of the existence of bad debts and policies adopted by Governments to mitigate the effects of this problem and other transition-related issues to do with prudent bank management during the transition process which had the aim of broadening the policy-options available to the policy makers. Keeping the questions broad enabled the collection of interesting new information. The interviews started, with an evaluation of macro- and micro economic factors with regard to the banks' success and then moved to factors peculiar to the bank interviewed, shown below:

1. The effect of macro- and micro economic factors on the bank's business
 - a. Bank managers' evaluation of the regulatory framework
 - b. The relation between inherited bad loans and the *second stage* banking problems
 - c. The strategies and tactics of bank managers to cope with the transitional environment
2. Factors peculiar to the bank affecting its business
 - a. Difficulties faced when starting a banking business
 - b. The process of making a loan-decision (description of decision process)
 - c. Features of ongoing bank-firm relationships
 - d. Actions in case of payment arrears on the part of borrowers
 - e. Effects of competition on the bank's activities
 - f. Strategies adopted to improve banking business and obstacles faced within the bank.

These areas of discussion were adjusted according to the institution interviewed as well as the ownership structure of the banks.

(d) Logistics of the fieldwork

The interviews were recorded with a pocket tape recorder. Only few interviewees objected to being recorded: one CNB official, one member of the Komerčni Banka personnel and one interviewee from the Universal Banka, a bank under the conservatorship of the CNB. In these cases notes were taken. The recorded tapes were then typed and categorised with the help of the statistical program *Q.S.R. NUD.IST*. The coding scheme of the *Q.S.R. NUD.IST* enabled a tree to be developed which gave a logical structure to the material collected and facilitated subsequent analysis.¹⁰⁸

3.2.4 Data Analysis

Data analysis should aim to extract maximum value from the gathered data. The aim is not to present a proof but rather a logical and persuasive account of the findings.¹⁰⁹ In order to strengthen the credibility of the findings, account needs to be taken of the reliability and validity of the collected information. Reliability tests the degree to which the findings are replicable by another researcher, while validity means that the findings supply credible answers to the research questions. In order to enhance the credibility of the findings data triangulation is employed. Data triangulation involves the use of multiple sources of data to check for consistency. Accordingly, an attempt was made to combat bias on the part of the respondents and of the researcher either by confirming the findings through triangulation with other respondents or through secondary sources. In the course of the analysis both qualitative and quantitative sources are combined, and the statistical data available are analysed in conjunction

¹⁰⁸ Documented in Appendix A 3-2-3c.

¹⁰⁹ Miles, M. B. and Huberman, A. M. (1984).

with the interviews which took place and are also supported by other secondary sources.

3.3 Empirical findings: Descriptive Statistics and Analysis of the Questionnaire

In the following descriptive analysis and statistics of the questionnaire survey and comments are presented. For brevity the years 1991 and 1994-96 are not reported. The bracketed numbers within the Table entries relate mainly to 1992-93, other responses relate to 1997.

Question 1: What was the reaction of each of the following types of enterprises to change the previously practiced close State Owned Bank (SOB) - State Owned Enterprise (SOE) relationship?

1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT

1997 (1992-93)	Agrobanka	CS	CMHB
State Owned Enterprises	3(3)	3(4)	3(3)
Partly Privatised Enterprises	4(4)	3(4)	3(3)
Privatised SOEs	4(4)	3(4)	4(4)

During the communist regime banks maintained close ties to enterprises and no repayment instructions were agreed upon. With the collapse of communism and the adoption of market principles banks were forced to cease previously practiced methods. Questionnaire result showed that unfettering the close ties between banks and SOEs eased as the latter became privatized.

Question 2: What was the effect of counseling, debt restructuring, increasing the amount of loan to a borrower in financial distress?

1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT, 0 IF NONE

1997 (1992-93)	Agrobanka	CS	CMHB	Universal	Interbanka	Raiffeisen-bank	Vereinsbank
a. Counselling	3(3)	4(3)	4(2)	4(3)	3	3	6
b. Debt Restructuring	2(6)	4(3)	4(3)	4(4)	3	3	6
c. Increase amount of loan	2(4)	2(3)	3(2)	2(2)		6	6

Counselling a borrower in financial difficulties during the initial phases of the transition was likely to be beyond the capacities of the banking staff. Debt restructuring was also effective in one bank. Similarly, increasing the amount of loan brought a positive results in one case only. Towards the end of the period studied, however counselling of banking staff brought improvements in enterprises. This was accompanied by debt restructuring but not with granting further loans.

Question 3: Which methods did/do you apply in solving troubled loans?

1. VERY RARE, 2. RARE, 3. SOMETIMES, 4. OFTEN, 5. VERY OFTEN

1997 (1992-93)	Agrobanka	CS	CMHB	Universal Banka	Inter-banka
Work out	2 (3)	2 (2)	4 (4)	4 (4)	
Liquidation	2	2 (1)	2 (1)	3 (3)	
Reclassification Loans	4 (1)				
Write-off					4

A number of methods are applied in solving troubled loans. The banks confirmed that liquidation is rarely applied. Work out is not applied by bigger banks but in specialized bank CMHB and Universal Banka (a small size bank). Agrobanka applies reclassification loans imposed by CNB since 1996. Interbanka applied write-off, as the best option for a fresh start with a foreign strategic partner.

Question 4: If you applied “work out,” what were the reasons?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

1997 (1992-93)	Agrobanka	CS	CMHB	Universal
a.The legal framework not sophisticated enough	4 (4)	4 (3)	3 (4)	4
b.Problem loans are best handled by the participants involved	4 (4)	2 (3)	4 (4)	3
c.Out-of-court settlement will net the bank the greatest return	3 (3)	4 (3)	4 (3)	4
d.Prestigious effect on the bank	2 (2)	3 (3)	4 (4)	3
e.Optimistic about the borrower's financial strength and ability to repay the obligation	2 (2)	3 (4)	2 (3)	4

In 1992 the reasons for the application of work-out are firstly given the deficiencies of the legal framework. Banks also agree that problem loans are best handled by the participants involved. No decisive evidence could be obtained whether Q4C, Q4D, and Q4E are decisive for a decision for a work-out. Only one bank (CMHB) agrees “Prestigious effect on the bank.” Ceska Sportitelna agrees “Optimistic about the borrower's financial strength and ability to repay the obligation”. The latter is likely to do with the bank’s client base of large enterprises. The decision for a work-out is independent of the fact whether the bank is optimistic about the borrower’s financial strength and ability to repay the obligation and whether applying to the court would affect the banks’ goodwill. Yet, in 1997 banks are slightly less optimistic about borrowers than in 1992.

In 1997 banks agree “The legal framework not sophisticated enough” Q4A and “Out-of-court settlement will net the bank the greatest return” Q4C more than it they did in 1992. In 1997 “Problem loans are best handled by the participants involved” Q4B seems to be less valid than initially, which may be due to banks experience with the enterprise sector.

Question 5: If you applied “liquidation,” what were the reasons?

1. STRONGLY DISAGREE, 2. DISAGREE, 3. UNCERTAIN, 4. AGREE, 5. STRONGLY AGREE

1997 (1992-93)	Agrobanka	CS	CMHB	Universal	Raiffeisen-bank (95-97)	Vereins-bank (94)
a Both banking staff as well as borrowers need to be disciplined to adhere to regulations	5 (4)	3 (5)	2 (4)	4	2	1
b Liquidation has a disciplining effect on other debtors	4 (4)	3 (3)	4 (3)	3	3	2
c The costs involved in collecting and rehabilitating the borrower	3 (3)	4 (3)	3 (3)	3	4	3
d No mutual trust between the bank and the borrower	4 (4)	5 (3)	4 (4)	3	5	5
e Recovering debts	3 (3)					

Although liquidation was the least option of banks in case of borrowers financial difficulties, bank’s are nevertheless of the opinion that both banking staff as well as borrowers need to be disciplined to adhere to regulations in particular during the initial phases of the transition. In 1997 CS opts for liquidation given the costs involved in collecting and rehabilitating the borrower. In 1992 and 1997 all domestic banks, especially foreign banks, apply liquidation as there is no mutual trust between the bank and the borrower.

Question 6: How would you scale the effectiveness of stabilization policies adopted by the Government and your organization?

1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT

1997 (1992-93)	Agrobanka	CS	CMHB	Mean
a.Debt consolidation	2 (3)	4 (3)	4 (3)	3.3 (3)
b.Restructuring and recapitalisation	3 (3)	5 (3)	4 (2)	4 (2.67)
c.Sale of bad debts	4 (3)	5 (3)	4 (3)	4.3 (3)
d.Writing off bad debts	4 (3)	5 (3)	3 (2)	4 (2.67)
e.Radical shake-up of managements	3 (4)	3 (3)	4 (4)	3.3 (3.67)
f.Consolidation with a foreign bank	4	3 (3)	4 (4)	3.67(3.5)
g.Partly privatisation		2 (2)	3 (3)	2.5 (2.5)
h.Complete privatisation	(4)	3 (3)	4 (3)	3.5 (3.3)
i.Change owner (capital participation)	3			3

Question 6 was answered by Agrobanka, CS and CMHB. Stabilization policies adopted by the Government had differing effects on each bank. In 1997 debt consolidation had a favorable impact on

CS and CMHB but not on Agrobanka. Furthermore, restructuring and recapitalization were much relief for CMHB and especially to CS. All three banks in 1997 were most satisfied by the option of being able to sell and also being permitted to write off bad debts. Radical shake-up of management was most effective in 1992, but to a lesser degree in 1997. Yet, Consolidation with a foreign bank was expected to bring most efficiency to the banks.

Question 7: How would you scale adherence of your staff to the prudential regulations?

1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT

	Old Staff							New Staff						
	91	92	93	94	95	96	97	91	92	93	94	95	96	97
Agrobanka	2	3	3	3	3	3	3				1*	1*		
CS	3	3	4	4	5	5	5	3	3	4	4	5	5	5
CMHB	2	3	3	3	3	4	4	1	1	1	2	2	3	4
Union Banka							4							3
Interbanka							4							4
Raiffeisenbank					4	4	4					3	3	3
Vereinsbank								3	4	4	4	4	4	4

*= coming with the change of owner

Adherence to prudential regulations was not satisfactory. This was besides a gradual implementation of regulations, but also due to lack of prudence among banking staff. According to our interviews with the representatives of Agrobanka in 1994 and 1995 with new owners and management of Agrobanka the prudential regulations were simply ignored. Overall, the existing staff and new staff had to learn to adapt to regulations the new banking environment. While big banks and foreign banks seem to have qualified staff since the early stages of the transition, small banks seem to experience a shortage of this. Interbanka evaluates its staff as being good only after the involvement of an FSP.

Question 8: Why did your bank increase lending to enterprises initially?

Table 8 presents descriptive statistics of the factors which are generally cited as the causes of non performing loans. The causes are divided into four subgroups. During the six years from 1991 major changes could be achieved.

Question 8a-f: External Causes

1. Strongly disagree 2. Disagree 3. Uncertain 4. Agree 5. Strongly agree

	1997 (1992-93)	Agro-banka	CS	CMHB	Universal ¹¹⁰	Inter-banka	IPB	Ranking '92-'93	Raiff-eisen '97	Vereins-bank	
a	Political pressure	1 (4)	4 (5)	1 (4)	3	(4)	1 (5)	2	5	1	1
b	Charter requirement to take account of the general social and economic needs of the local area	3 (3)	4 (4)	1 (4)	4		2 (4)	5	4	2	1
c	To help rebuild the country	3 (3)	3 (4)	1 (4)	4	4	4 (5)	3	3	2	2
d	An opportunity to establish market share	4 (4)	5 (5)	4 (5)	4	4	3 (4)	1	1	4	4
e	Continuous changes in the environment made "good" banking decisions go wrong	3 (4)	5 (4)	4 (2)	3		4 (5)	4	2	1	1
f	Other reason IPB: Personal connections ¹¹¹						3 (5)				

Among the 5 respondents in 1992 the most important cause of non-performing loans is adhered to political pressure and an opportunity to establish market share. In 1997 political pressure ranked among the least influencing external factor in 1997 together with "Charter requirement to take account of the general social and economic needs of the local area". Search for market share was still the main driving factor for banks. Nevertheless banks to a certain degree bear a portion of the mistake. In 1997 banks were still feeling responsible to help rebuild the country and to take account of the general social and economic needs of the local area. As opposed to the initial period of transition continuous changes in the transitional environment negatively impact on "good" banking decisions. In contrast, both responding foreign banks strongly disagree that unstable environment had any impact on granted loans turning non-performing. The reason for this can be seen in the client portfolio of foreign banks, which consist to a great part of foreign enterprises. IPB confirmed the existence of personal connections between 1991 and 1996 in our interviews.

Question 8g-j: Borrowers insufficient skills/fraudulent behavior

	1997 (1992-93)	Agro-banka	CS	CMHB	Universal ¹¹²	Inter-banka	IPB	Ranking '92-'93	Raiff-eisen '97	Vereins-bank	
g	Close links between our institution and outside institutions	2 (4)	5 (4)	2 (4)	3		2 (2)	3	3	1	1
h	Enterprises prone to mistakes as in the learning process	4 (4)	3 (3)	2 (4)	4		4 (5)	2	1	4	1
i	Borrowers were making use of the transition process, still vested in their old customs of non-payment	3 (4)	2 (4)	2 (4)	4	(4)	4 (4)	2	2	4	1
j	New enterprises took advantage of the transition and employed borrowed money unwisely	3 (4)	3 (5)	3 (5)	4	(4)	4 (5)	1	1	5	1

Among the 4 respondents in 1992 the most important cause of non-performing loans is adhered to enterprises. Banks confirmed to have maintained close links to outside institutions. New enterprises took advantage of the transition and employed borrowed money unwisely. Borrowers benefiting from the transition process through reluctance to abstain from hitherto practiced close bank-borrower relationship. However, to a certain degree the cause of non-performing loans lies also with the learning process of enterprises. Enterprises were, and still are, prone to mistakes with the result of loss of the borrowed funds. In 1997 enterprises' being in the learning process is one of the primary factors resulting in non-performing loans.

¹¹⁰ Since 1993 no change.

¹¹¹ The respondent strongly agrees that personal connections were present between 1991-1996, but is unsure about the prevailing situation in 1997.

¹¹² Since 1993 no change.

Question 8k-p: Loan officers

	1997 (1992-93)	Agro-banka	CS	CMHB	Universal ¹¹³	Inter-banka	IPB	Ranking '92-'93	'97	Raiff-eisen	Vereins-bank
k	Agency Problems	1 (4)			3		4 (4)			2	1
l	Performance-minded agendas of many loan officers	1 (4)	3 (3)	2 (4)	3		1 (4)	3	3	2	1
m	Overemphasis on bank profits and growth	1 (4)	5 (4)	2 (4)	4		3 (5)	1	1	2	1
n	Fraud and embezzlement among bankers	1 (2)	4 (5)	1 (4)	4	(4)	1 (5)	2	2	3	1
o	Staff responsible for granting loans was also employed in the workout department	1 (3)	1 (1)	1 (4)	3		1 (3)	5	5	3	1
p	Too lenient credit policies for personal friends or friends of executive officers	1 (3)	1 (1)	2 (4)	4	(4)	1 (5)	4	4	1	1

To a certain degree the roots of non-performing loans are with bankers themselves. Agency problems were indeed present. Fraud and embezzlement among bankers, and too lenient credit policies for personal friends or friends of executive officers are the most important causal factors with bankers for non-performing loans. Overemphasis on bank profits and growth and to a lesser degree performance-minded agendas of many loan officers was a causal factor. Only in one bank, namely CMHB, staff responsible for granting loans was also employed in the workout department. In 1997 granting loans to personal friends or friends of executive offers diminished more or less.

Question 8q-t: Insufficient loan management skills

1. Strongly disagree 2. Disagree 3. Uncertain 4. Agree 5. Strongly agree

	1997 (1992-93)	Agro-banka	CS	CMHB	Universal ¹¹⁴	Inter-banka	IPB	Ranking '92-'93	'97	Raiff-eisen	Vereins-bank
q	Insufficient loan analysis pertaining to the borrower's management skills	1 (4)	3 (4)	3 (4)	4	(4)	1 (5)	1	2	4	1
r	Ill-conceived terms placed on loans	2 (2)	3 (3)	2 (4)	3	(4)	3 (5)	4	1	4	1
s	Inadequate analysis of the financial statements	1 (3)	3 (4)	2 (4)	5	(4)	1 (5)	2	2	5	1
t	Poor review and audit of marginal loans	1 (3)	1 (2)	2 (3)	4		2 (5)	3	3	5	1

Insufficient loan analysis pertaining to the borrower's management skills and inadequate analysis of the financial statements are two most important causal factors within the subgroup of skills of banking staff resulting in non-performing loans. In 1997 Ill-conceived terms placed on loans became prime reason for non performing loans whereas it was least causal factor in 1992.

¹¹³ Since 1993 no change.

¹¹⁴ Since 1993 no change.

Question 9a-e: Why did the staff face difficulties?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

1997 (1992-93)	Agrobanka	CS	CMHB	Union	Universal	Inter-banka	Raiffeisen	Vereinsbank
a. Decision making was centralized and the exclusive remit of top manager	1(3)	1(1)	2(2)	2	4(4)		4	1
b. No guidelines from the head office	1(1)	1(1)	2(2)	3	2(2)		1	2
c. Insufficient allocation of resources to screen and monitor loan applications	3(3)	3(4)	3(3)	4	3(3)		3	1
d. Emphasis was placed to establish functions rather than unifying divided tasks into coherent business processes	3(4)	2(4)	3(3)	3	3(3)		3	1
e. Insufficient attention to training needs of loan officers	3(3)	1(1)	2(4)	3	2(4)	2	5	1
f. The decisionmakers hang on to existing ways of doing things	4(4)	2(3)	2(2)					
g. Old managers suppressed new ideas generated by subordinates	2(4)	1(2)	2(2)					
h. New managers suppressed new ideas generated by subordinates	4(3)	2(2)	3(3)	3	2(2)	2	2	1
i. Procedures were introduced by management with the deliberate intention of constraining subordinates	2(3)	2(2)	3(3)	2	3(3)	2	2	1
j. Regulatory turmoil created managerial incentives in favour of their own good	2(3)	1(1)	2(2)	3	3(3)	2	2	1
k. Banks' early reliance on Governments liquidity loans caused learning pathology	4(1)	2(2)	2(3)					
l. Respect for and certainty about the purpose and role of Government institutions has disintegrated	2(4)	1(3)	2(2)	3	3(3)	1	1	2
m. Employees', yearning for freedom, were frustrated and took revenge from the society	2(2)	2(2)	3(3)					
n. Employees', yearning for freedom, were frustrated and took revenge from their managers	1(2)	1(1)	2(2)					
o. Managers who found themselves too old for adjusting to a new system, were frustrated and took revenge by pilfering	1(2)	2(2)	3(3)					
p. New managers pilfered taking advantage of the transition	1(2)	2(3)	3(3)	3	3(3)	1	3	1

Insufficient loan management skills thus are a result of senior managements' reluctance to promote training of loan officers, despite of utmost training requirement of the staff. According to the banks learning by doing was not sufficient. In addition no sufficient resources were allocated for screening and monitoring loan applications.

Organisational issues created additional problems for banking staff. Initially, emphasis was placed to establish functions rather than unifying divided tasks into coherent business processes, which is still concern of banks though to a lesser degree as many institutions are in the process of re-organising. Surprisingly, decision making was not centralized and not the exclusive remit of top manager as one would have expected after the break-up of the centrally planned economy. The banks also received guidelines whereas its appropriateness is an open question.

Question 11: What is your assessment of the following statements concerning the skills of your staff?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

1997 (1992-93)	Agrobanka	CS	CMHB	Union	Universal	Interbanka	Raiffeisen
new staff was better than old staff in tackling transition specific problems	4(2)	3(3)	3(3)	4	4(4)	2	2
new staff were in fact better able than old staff to measure, manage, and price risk	4(2)	3(4)	3(2)	2	3(3)	2	2
old staff were better than new staff in building bank-borrower relationships due to already existing relationships with	2(3)	3(4)	3(3)	4	3(3)	2	4
both the contribution of old and new staff was essential	4(2)	5(5)	2(2)	4	4(4)	4	5

Although banks agree that both the contribution of old and new staff was, and is at present more than before, essential, old staff were better than new staff in building bank-borrower relationships due to

already existing relationships with customers. Later this advantage of old staff diminished as new and dynamic staff quickly adapted with improved training measures.

Question 12: What is your assessment of personnel training measures employed?

1. VERY BAD , 2. BAD , 3. AVERAGE, 4. GOOD , 5. EXCELLENT

1997 (1992-93)	Agro-banka	CS	CMH B	Union	Universal	Inter-banka	Ranking	Raiff-eisen	Vereins-bank
internal training programmes	4 (4)	5 (4)	1 (3)	4	4 (4)	4	3(1)	2	5
training in foreign banks (inland)	4 (2)	4 (4)	3 (3)		4 (4)		2(3)		
training in foreign banks (abroad)	4 (1)	4 (5)	4 (4)		4 (4)	4	1(2)	4	
Interb: Training books Vereins: training in headquarters						4			5
no training, employees grew with the transition process	1 (2)	1 (1)	2 (2)						

In 1993 banks were most satisfied with own internal training programmes followed by staff trained in foreign banks. Training in abroad is preferred to training in foreign subsidiaries and branches within the country. Much interest is paid to banking literature and magazines, completely absent a few years before.

Question 13: If training programmes were unsatisfactory what was the reason?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	Agro-banka	CS	CMHB	Raiff-eisen	Vereins-bank
a. Training programmes were product-driven	3	3	2	2	1
b. Training programmes were function-driven	3	2	2	2	1
c. Training programmes were academic and not necessarily practical in nature	3	4	2	3	1
d. Training abroad did not bring efficiency as transition requires a completely different style of managing and negotiatin	3	1	1	2	1
e. Training abroad did not consider that there is a structure in the cultural differences between countries	3	3	3	2	
f. Training programmes were perceived as a low-priority function as there was no adequate support from senior management	3	1	4	4	
g. Radical improvement requires creativity and breakthrough thinking, and these skills are hard to develop through training	5	2	4	4	

Not all training programmes were satisfactory. In general it is put forward that training abroad would not bring efficiency as transition requires a completely different style of managing and negotiating than in developed market economies. The questionnaire responses proved the opposite. Training abroad indeed was adequate for the problems coming with the transition. Nevertheless, the respondents strongly supported that radical improvement requires creativity and breakthrough thinking, and that these skills are hard to develop through training programmes. CS, however, criticized that training programmes were academic and not necessarily practical in nature. Big banks' senior management supported training programmes whereas in newly established banks training programmes were perceived as a low-priority function due to the lack of adequate support from senior management.

Question 14: How did your institution conduct career management/human resources development?

Table 14 shows the applied career management/human resources development methods by Czech banks.

	Agrobanka	CS	CMHB	Union	Universal	Interbanka	Raiffeisen	Vereinsbank
Application of long-term integrated career development system	since '96	since '94	since '95	in '97				since '92
Joint career planning processes that link the individual and organization's objectives	since '93	since '96	since '95		since '93	in '97		
Employment of so called prospectors who seek to retain key employees	between '91-'95	since '91						
External labour market hiring based on individual contribution Interbanka: Lawyer		between '91-'94				in '97	since '95	
Individual performance was tested only at entry level	between '91-'95	between '91-'93					since '95	
Assessment center, regular interviews								since '92

Question 15: What tools do/did you apply to promote employee creativity and breakthrough thinking?

	Agrobanka	CS	CMHB	Union	Universal	Interbanka	Raiffeisen	Vereinsbank
Performance related pay	since '91	since '91	since '95		since '93	in '97		since '96
Promotion dependent on performance	since '94	since '92	since '95	in '97		in '97	since '95	since '94
Rewarding by giving responsibility for more complex and demanding cases	since '95	since '92	since '96			in '97	since '95	since '94

Question 16: What kind of management structure did/do you apply?

Table 16	Agrobanka	Ceska Sportitelna	CMHB	Union	Universal	Interbanka	Raiffeisen	Vereinsbank
Begin of operation	1.7.'90	1.1.'69	10.1.'91	15.11.'91	15.2.'93	1.2.'91	1.7.'93	1.7.'92
Functional management hierarchy	since '91	between '91-'92	since '91	in '97	since '93	in '97	since '95	since '92
Horizontal organizational structure		since '92						
Multiple and flexible linkages between employees all over the bank		since '94						

While foreign banks started with a functional organisational structure, it was only gradually introduced in domestic banks.

Question 17: Who was responsible for earning profits, cost control budgeting?

	Agrobanka	CS	CMHB	Union	Universal	Interbanka ¹¹⁵	Raiffeisen (start 1993)	Vereinsbank (start 1992, branches since 1996)
earning profits								
Branch manager responsible		since '91		in '97	since '93		since '95	since '96
Regional manager	since '91					in '97	since '95	none
Chief executive	since '91	since '91	since '91			in '97	since '95	since '92
cost control								
Branch manager responsible	since '91	since '91	since '91				since '95	since '96
Regional manager				in '97		in '97		
Chief executive	since '91	since '91	since '91		since '93	in '97	since '95	since '92
budgeting								
Branch manager responsible	since '91	since '91					since '95	since '96
Chief executive		since '91	since '91	in '97	since '93		since '95	since '92

Question 18: What was/is the reason for stalled implementation of required radical changes of organisational structure?

Many factors inhibited the implementation of required radical changes of organizational structure. Table for question 18 shows the reasons.

	Agrobanka	CS	CMHB	Union	Universal	Interbanka
Cost	since '96	since '93	since '91	in '97	since '93	
Management inertia	between '94-'95	between '91-'92				
Shareholder requirement						before '97
Change Strategy - regions	between '91-'93					

Question 19: How was/is the generation of ideas promoted?

	Agrobanka	CS	CMHB	Union-banka	Universal	Interbanka	Raiffeisen-bank	Vereinsbank
Bottom up		since '94				in '97	since '95	
Top-down solution imposed by management	since '96	since '91		in '97	since '93	in '97		
Employee participation in decision making was based upon competence, not rank	between '91-'95	since '94	since '91					since '92

Question 20: Did your institution apply Business Processes Re-engineering (BPR)?

The functional organisational structure is often portrayed as a vertical structure with barriers, or walls, separating each of the functions. It is argued that the functional management hierarchy, which most large enterprises have historically used as an organisational role model, is no longer adequate and that

¹¹⁵ Interbanka has no branches. The bank is also not going to conduct budgeting in the future.

an alternative is beginning to emerge. The BPR¹¹⁶ literature highlights the delays, errors and inefficiencies which are introduced when passing information and work from one function to another. Business processes are described as horizontal flows, cutting across organisational functions. In a recent survey, 63% of respondents predicted that the near future will bring a more horizontal organisational structure (Pitney Bowes Management Services, 1995).

Responding banks to our questionnaire were not applying BPR. Only CMHB applies BPR since 1995 and could achieve very successful results.

Agrobanka	CS	CMHB	Union Banka	Universal Banka	Interbanka	Raiffeisen-bank	Vereinsbank
No		since 95 the result is very successful	Don't know	No	No	No	No

Question 21: Which of the following areas were difficult to penetrate by the re-design of the company? According to the respondents roles and responsibilities were and still are most difficult to penetrate and re-design.

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	Agrobanka	CS	CMHB	Interbanka
Roles and responsibilities	Agree	strongly agree between 91-92 agree from 93 onwards	disagree	
Measurements and incentives	uncertain	uncertain	disagree	
Organisational structure	agree until 94	disagree	disagree	
IT	uncertain	disagree	disagree	agree
Shared values	agree from 95 onwards	uncertain	uncertain	
Skills	uncertain	agree between 91-92 uncertain from 93 onwards	disagree	

Question 22: Do you agree with the following statements concerning improvement strategies?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	Agro-banka	CS	CMHB	Universal Banka	Inter-banka	Raiffeisen-bank	Vereins-bank
The bank applies a measurement process which determines opportunities for improvement	3	5	4	3	4	2	4
The bank needs to apply a measurement process which will determine opportunities for improvement	5	5	3	4		4	4
The bank applies feedback measures which are capable of setting internal standards	3	5	4	3	4	2	4
The bank needs to apply feedback measures which are capable of setting internal standards	5	5	3	4		4	4
The bank applies a system which matches the internal standards of effectiveness against best in class	3	4	4	3		2	3
The bank needs to apply a system which matches the internal standards of effectiveness against best in class	5	5	2	4	4	5	4

Banks are applying certain improvement strategies. Feedback measures which are capable of setting internal standards are more or less applied by both foreign and domestic banks. However banks strongly see the necessity to apply feedback measures which are capable of setting internal standards. Not all responding banks apply measurement process which determines opportunities for improvement but it is seen as a requirement. Those banks, including foreign banks, which apply a measurement process which determine opportunities for improvement indicated that it still requires much improvement. Only two banks, namely CS and CMHB, were applying a system which matches the internal standards of effectiveness against best in class, whereas all banks including foreign banks saw the necessity to implement such as system.

¹¹⁶ BPR addresses the need for established enterprises to move to a new organizational model, from one focused on functions to one focused on processes. Responding banks were not applying Business Processes Re-engineering. Only CMHB applies BPR since 1995 and could achieve very successful results.

Question 23: What is your assessment of foreign banks as a model for improvement?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	Agro-banka	CS	CMH B	Union	Universal Banka	Inter-banka
Foreign banks apply a more advanced technology, which couldn't be afforded by us at this stage	2	2	2	4	2	
As foreign banks are financially backed by strong headquarters abroad, they have more room for maneuver	2	4	4	4	4	4
No association with the past and/or independence from domestic government requirements made/makes foreign banks more profitable	2	5	2	4	4	3
Other						
Agrobanka: Methods and type of management; strategic decision making	4					
Interbanka: Rating, know-how, Cheaper facilities						4

	Raiffeisenbank	Vereinsbank
We apply, relative to that of the domestic banks, a more advanced technology	3	5
As our institutions is financially backed by strong headquarters abroad, we have more room for maneuver	4	4
No association with the past and/or independence from domestic government requirements made/makes us more profitable	2	5
Other		5
Vereinsbank: more flexible in decision making process		

Foreign banks' are indeed taken as a model for improvement. From technological point of view, foreign banks were found to apply more advanced technology. Domestic banks are postponing the introduction of information technology until the involvement of a foreign strategic partner. All banks confirm that foreign banks have more room to maneuver due to being backed by strong headquarters abroad. Foreign banks' methods and type of management, flexibility in decision making process, know-how, strategic decision making, and advantages associated with headquarters such as rating, cheaper facilities are seen as the reasons for foreign banks' success.

Question 24: Did the insecurity concerning the relevance of the transition related policies had an influence to create the desired credit culture?

Three domestic banks, namely Agrobanka, CS, CMHB, confirmed that insecurity concerning the relevance of the transition related policies had an influence to create the desired credit culture.

Question 26: What is your assessment of the following statements ?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	Agro-banka	CS	CMHB	Union Banka	Universal Banka	Inter-banka	Raiffeisen-bank	Vereins-bank
The bank is up to the task of providing improved corporate governance vis-à-vis enterprises	2	4			3	4	3	5
In order to be competitive the bank should be allowed to offer a complete range of commercial and investment banking services	5	1		5	4	2	4	4
Universal banking increased the potential learning pathology inherent in bank's already dominant market positions	3	3			4		3	2
Due to the idiosyncratic developments in the economy the bank cannot be called a universal bank, in German terms	2	1			3	2	2	2

Corporate governance seems to remain a domain of large banks (CS). Small banks (Agrobanka and Interbanka) were found to be unable to interfere in the decisions of enterprises. Both domestic and foreign banks see their competitiveness being dependent on providing a complete range of commercial and investment banking services. Despite the idiosyncratic developments banks assess the development of the banking system towards the German model of universal banking .

3.4 Assessing Banking Efficiency and Profitability - Financial Data Analysis

The aim of this section is to trace the changes in the Czech banks witnessed during 1992-99 by analysing profitability measures based on financial data. The results of such a task will help to justify the analysis in the preceding chapters. It has to be noted that it is difficult to evaluate the performance of domestic banks in relation to that of the banking system. The small banking sector, in particular, is characterised by several unprofitable banks and only a few profitable banks. This makes it difficult to draw general conclusions about the NEBs. Funds obtained from Ceska Financni to overcome a liquidity crisis additionally limit a proper assessment of the NEBs' performance. An accurate assessment of the profitability and efficiency of SOBs is similarly problematic because of the restructuring and recapitalisation programmes which were implemented. An accurate analysis of the performance of big banks is additionally impeded in as much as the secondary banking crisis, restricting market entry for foreign banks to their participation in the privatisation of domestic banks, also contributed to an even greater strengthening of the monopoly power of big banks.

Bank's Return on Average Assets and Average Return on Equity

Table 3-4-1 shows the movement of banks' returns on average assets (ROAA) and average return on equity (ROAE) over the period under consideration. Looking at ROAA, it can be observed that year 1992 was the most profitable year, while year 1996 was the least. The table also shows that ROAA fell in 1993, then it rose in 1994, then was in downward movement up to 1996. In 1997 ROAA improved although it still remained in the negative. This can be partly related to the financial sector crisis in May/June 1997.¹¹⁷ After a deterioration in 1998, banks managed to record profits in

¹¹⁷ The Czech Republic has been one of the first countries of Eastern Europe to suffer from a currency crisis in the aftermath of the Asian financial crises. In May 1997 speculators have ended 75 months of stability for the CZK, which was pegged at a combined US\$ and DM basket. The CZK, separated from its Slovak counterpart in February 1993, has been internally convertible since 1991. The new foreign exchange law which came into effect on October 1, 1995 provided for full current account convertibility while liberalizing many capital account transactions. At separation from the Slovak crown, the exchange rate was pegged against a currency basket, which is weighted 65 per cent to the DM and 35% to the US\$. The CZK was allowed fluctuate within a band of plus/minus 0.5 per cent of the mid-point. In February 1996 the central bank (CNB) freed its exchange-rate policy by widening the

1999. In 1992-99 SOBs¹¹⁸ were most profitable during 1995-96, and least profitable in 1999. The year 1996 was the least profitable year for NEBs. As was the case for SOBs, the year 1995 was the most profitable year for foreign banks. In 1998 foreign banks were least profitable. While NEBs had been reporting negative ROAA since 1993, SOBs were able to register profits in 1990-91 and 1994-96. Foreign banks, in turn, were able to maintain positive returns in five successive years (1992-96). At the end of the period studied only foreign banks had positive ROAA.

Table 3-4-1: ROAA and ROAE %

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	ROAA									
SOBs	1.4	1.1	-0.1	-0.9	0.9	1	1	-0.8	-0.6	-0.9
NEBs	0.2	1.2	0.4	-0.4	-1	-3.5	-10	-1	-0.6	0
Foreign banks		-0.2	0.4	0.8	0.8	1	0.9	-0.3	-1.3	0.4
All banks			0.23	0.01	0.07	-1.01	-3.92	-0.62	-0.93	0.04
	ROAE									
SOBs	25.8	25.3	-2.9	-2.7	13.2	13.4	13.5	-16	-14	-22.7
NEBs	4.6	10.5	4	-70.7	-4.5	-49	-74	-7.4	-30.2	-24.8
Foreign banks		-0.8	8	9.6	11.1	15	14.3	7.1	-29.1	3.2
All banks			3.15	-22.61	4.97	-12.33	-16.55	-1.34	-25.67	-8.89

Source: BankScope. Own Calculations.

According to the profitability measure ROAE, banks were in loss during the period studied, except in 1992 and 1994. The year 1994 was the most profitable year, while 1998 was the least. Overall, it seems that NEBs fared worst, while foreign banks fared best. During the crisis of 1997, foreign banks were the only institutions which managed to continue to register profits, though less than during the preceding years. The years 1996 and 1998 were the least profitable years for NEBs and foreign banks, respectively. During this period, 1992-99, SOBs experienced their highest loss in 1999.

band to plus/minus 7.5 per cent. There are debates as to whether high susceptibility to ‘contagion’ after a financial crisis elsewhere, was responsible for the crisis in the Czech Republic or whether other macroeconomic policies such as the structural developments should be blamed. Rationalisations also included: the economy overheated, foreign lenders lost their nerve, mistakes in monetary and fiscal policy were made. According to the then Prime Minister speculative attacks were responsible and no blame should be put on his politics and strategies (Vaclav Klaus Czech Prime Minister Delivers Remarks at the National Press Club, Washington Transcript Service, 10 November 1997).

¹¹⁸ SOBs consist only of big banks.

Capitalisation of Banks

Differences in capitalisation can be one cause for discrepancies in bank performance among SOB, NEBs and foreign banks in as much as different types of banks started from quite different initial patterns of capitalisation (Table 3-4-2).

Table 3-4-2: Equity to Total Assets (in %)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
SOBs	3.5	4.9	4.8	5.7	7.1	7.1	7.7	6.6	7.1	7.5
NEBs	5.5	20.7	19.2	9.3	13.9	14.8	2.5	8.9	14.3	11.3
Foreign banks		18.5	13.4	10.7	8.9	7.5	6.2	6.2	6.5	6.6

Source: BankScope 2000; own calculations.

A comparison of the equity to total asset ratios during 1990-99 shows that NEBs had the highest ratio (except in 1993, compared to foreign banks only, and in 1996 among the two other types of banks). While high ratios in 1990-95 may have been a consequence of banks' failing to come up to their provisioning needs for relatively high bad assets, better capitalisation in NEBs, in particular since 1997, is likely to be a result of the bank restructuring measures adopted. While the equity to total assets ratio in NEBs - besides being lowest with only 2.5% on average in 1996 - pointed to unsystematic development, the equity base in SOBs fluctuated on average around 5% and 7% in 1990-93 and 1994-99, respectively. The average equity to total assets ratio in foreign banks fell steadily from more than 18% in 1991 to 6.6% in 1999. This may indicate that foreign banks started their banking operations with a relatively high equity base to guard against insolvency in a risky business environment. A reduction in capital backing towards the end of the period studied may imply that foreign banks have finally gained enough confidence to tackle the risks associated with a transitional environment.

Client Deposits at Banks

Differences in performance among different types of banks can also be traced back to the different sources of funds which can be accessed. Generally deposits are a cheap source of finance for banks, and therefore the market for them is highly competitive.

During the period of study deposits in SOBs and foreign banks, fluctuated on average around 85% of total assets (Table 3-4-3).

Table 3-4-3: Deposits to Total Assets (in %)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
SOBs	91.7	89.6	82.9	87.5	83.4	81.9	81.3	82.9	80.5	78.3
NEBs	91.8	90.1	76.9	83.6	79.1	74.6	86.5	70.4	57.7	56.9
Foreign banks		81.0	83.9	86.6	86.4	84.1	84.5	84.4	85.3	77.6

Source: BankScope; Own calculations.

Deposits in NEBs remained also fairly high and constant in 1990-96 but gradually declined in 1997-99. This is likely to reflect the reduced confidence in the secondary banking sector.

Ratios of Total Costs to Total Assets

Generally, the ratio of total costs over total assets has been lowest among foreign banks, while being highest among NEBs. During the period of study total costs in SOBs and NEBs were on average almost 30% and 50% higher respectively than those of foreign banks (Table 3-4-4).

Table 3-4-4: Total Costs to Total Assets (in %)

	1992	1993	1994	1995	1996	1997	1998	1999
SOBs	9.9	14.3	9.8	8.9	9.3	12.2	13.4	12.4
NEBs	7.5	10.8	12.6	16.6	22.2	14.5	12.0	8.4
Foreign Banks	7.5	7.7	6.7	7.1	8.3	10.3	13.4	10.1

Source: BankScope. Own Calculations.

The average ratio of total cost over total assets has increased since the inception of reforms up to the end of 1996 among NEBs, while being higher (lower) than that of the other two types of banks in 1994-97 (in 1998-99). Lower average cost ratios in NEBs towards the end of the period studied are likely to be a result of the restructuring measures adopted. Higher costs in domestic banks are most probably due to operational inefficiencies, relatively higher provisions for expected loan losses compared to foreign banks, and the high interest rates prevailing in the country.

Provisions over total loans

As regards the provisions over total loans in SOBs, NEBs and foreign banks, one can observe that while domestic banks had to earmark large amounts for provisions, which deprived them of utilising funds productively, foreign banks, with the lowest provisions, seem to have allocated more funds for investment activities (Table 3-4-5). One can also observe that one of the main measures of an FSP when acquiring domestic bank was to increase provisions.

Table 3-4-5: Provisions to Total Loans %

<i>SOBs</i>											
Provisions/Total Loans %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean
Ceska Sporitelna			3.4	7.6	5.5	2.9	3.1	3.5	8.6	9.5	5.5
CSOB		1.1	5.0	25.3	5.3	3.8	0.7	4.0	3.6		6.1
Investicni a Postovni Banka			2.2	2.5	1.6	1.5	1.5	9.1			3.0
Komerčni Banka			10.3	1.7	1.8	1.5	2.0	4.3	9.8	9.6	5.1
Zivnostenska banka	2.7	15.3									9.0

<i>NEBs</i>											
Provisions/Total Loans %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean
Banka Hana						9.1	4.4				6.7
Bankovni dum SKALA				3.6	3.6						3.6
Ceska Exportni Banka								30.5	58.3	21.9	36.9
Ceskomoravska Zarucni a Rozvojova Banka						416.4	1338.5				877.5
Coop Banka			1.3	1.6	3.8	25.5	27.0				11.8
Foresbank					0.7	3.9	13.0	-51.4			-8.5
GE Capital Bank			6.0	7.4	2.2	2.0	13.9				6.3
Interbanka			0.1	1.4	8.0	33.8	24.8				13.6
Moravia Banka			0.6	1.4	2.8	1.6	0.8	-0.6	-0.5		0.9
Pragobanka			1.4	1.1	2.0	10.4	28.8	-22.5			3.5
Prvni Mestska Banka							4.2	10.3	39.4	17.1	17.7
Union Banka			1.2	2.0	1.8	1.2	6.3	4.3	6.8	-2.2	2.7
Universal Banka					1.0	9.9	17.1	-56.4			-7.1

<i>Foreign banks and Privatised banks</i>											
Provisions/Total Loans %	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean	
Bank Austria			0.9	0.8	1.1	1.3	0.9				1.0
Bank Austria Creditanstalt	1.0	2.1	2.0	1.8	0.8	0.5	1.9	1.5	0.9		1.4
Banka Hana							6.3				6.3
BNP-Dresdner Bank				0.2	0.0	0.0	0.0	0.4	3.1		0.6
Citibank			0.4	0.5	1.1	1.2	1.0	1.1	1.0		0.9
Credit Lyonnais Bank							0.8	2.0	-2.3		0.2
CSOB										1.0	1.0
Erste Bank Sparkasse			1.0	0.9	1.8	1.7	1.2	2.3	2.1		1.6
GE Capital Bank								8.7	60.5		34.6
Hypo-Bank					0.6	0.6	1.6	2.9			1.4
Hypovereinsbank					0.6	1.2	1.6	2.0	1.8		1.5
Interbanka							8.6	1.5	1.8		4.0
Raiffeisenbank akciová společnost				0.3	0.6	1.0	0.7	1.4	0.8		0.8
Societe Generale				0.8	1.0	1.0	0.6				0.9
Zivnostenska banka		7.8	3.7	2.4	0.6	-0.4	1.1	-0.9	2.8		2.1

Source: BankScope 2000; own calculations. Banks acquired by a foreign investor are highlighted.

Maturity structure

As regards the maturity structure of commercial bank lending in the period studied, credits relative to total loans were mainly granted for a short-term (with a maturity of 6 months to 1 year), but the provision of short term loans was gradually lowered in favour of long-term credits (with a maturity between 1 to 5 years). Table 3-4-6 compares contracts with different maturities among SOB, NEB and foreign banks.

Table 3-4-6: Maturity Analysis

	1992	1993	1994	1995	1996	1997	1998	1999
Loans (6 months-1year) as % of total loans								
SOBs	92	70	71	73	74	59	53	58
NEBs*	100	94	62	56	65	83	59	74
Foreign banks	100	100	81	79	72	69	71	65
Loans (1-5 years) as % of total loans								
SOBs		74	73	70	68	51	47	42
NEBs		34	42	44	56	46	51	59
Foreign banks			39	43	42	43	53	50

Source: own calculations based on data from BankScope; note: missing data obscured a clear cut difference between the two types of maturities; thus the rates do not always add up to 100%; * See Table A4-3-2,b for loans at each individual NEB.

During 1992-93 and 1997-99 SOBs granted relatively fewer short-term loans than NEBs and foreign banks. In fact, in 1993-97 long-term contracts made a higher portion of SOBs' loan-portfolios than was the case in other types of banks. This may partly reflect that it was SOBs which bore the main risks of the transition. In 1992-94 long-term loans in SOBs made up a higher share of their total loans than short-term loans. Since 1995-99, however, there has been an increase in short-term loans at the expense of long-term contracts. In 1998-99 more than 40% of loans were for a short term.

In 1992 NEBs granted mainly short-term loans. In 1993-95 the share of long-term contracts was gradually increased and in 1995 they comprised almost 45% of total loans granted. In 1994-96 the share of short-term loans was lowest among NEBs than in other types of banks. In 1994-97 the share of long-term loans was relatively higher than that of foreign banks, but lower than that of SOBs (see also Table A4-3-2,c). The high share of long-term loans during the initial phases of the transition is likely to imply risky lending policies among NEBs. However, in 1999 loans with a maturity of six months to one year as well as long-term loans were highest among NEBs as opposed to SOBs and foreign banks. A high share of short-term loans implies risk awareness although it may be due to the failure of ailing banks which may have left only relatively good banks in the sample. A relatively high share of long-term loans towards the end of the period studied is unlikely to reflect risky lending but

may be due to improvements in the economic environment. This is especially true in the face of increased levels of long-term loans also at foreign banks in 1994-99.

In 1992-93 foreign banks tended to grant mainly short-term loans. In 1994-99 foreign banks gradually reduced short-term loans and increased their long-term loan contracts. This may reflect the pursuit of a risk-averse lending policy in foreign banks.

Spreads

The static efficiency of banks is determined by the cost of financial intermediation services. It can be measured as the spread between the rate of return being offered to savers and the average cost of capital for borrowers. The nominal and real interest rate spreads (calculated on the basis of CPI) of the sample banks are shown in the Table 3-4-7. Analysis of the interest rate spreads is based on average interest rates on newly granted loans as opposed to the average loan rate.¹¹⁹

Table 3-4-7: Nominal and Real Interest Rate Spreads 1993-2000 %

	1993	1994	1995	1996	1997	1998	1999	2000
Average Nominal Spreads ^a								
Total	7.9	6.0	6.3	6.6	8.5	6.6	4.1	3.5
Short-term	5.0	3.1	3.3	3.9	5.1	3.6	2.6	2.3
Medium-term	4.9	3.0	3.4	4.2	5.1	1.5	2.9	3.6
Long-term	-1.6	1.5	3.1	6.5	9.9	9.3	6.4	4.2
Average real spreads ^b								
Total			2.8	3.6	5.2	3.9	3.1	2.5 ^c

^a =average interest rates on new credits CZK; ^b = Real rates based on CPI (ex post approach); client rates; new credits - time deposits; ^c =average until August.

Source: CNB. Own calculations. See for basis of calculation Table A 3-4a and A 3-4b.

In 1993 nominal spreads in the Czech Republic were high at almost 8%, whereas they were reduced to 6% in 1994. After this, an upward trend could be observed until 1997. In 1998-2000 spreads came down. Short- and medium-term spreads in 1993-95 - remaining almost at the same level - were higher than long-term spreads. In 1996 the upward trend in long-term spreads - lifting off since 1993 - was far greater than the

¹¹⁹ The CNB distinguishes between interest rates on new loans and interest rates on the stock of outstanding credit (Table A 5-2-2c). This difference is considered when calculating the average rates.

short- and medium term spreads which could be observed until 1997. In 1998, spreads came down for all forms of maturities. In 1999-2000, medium-term spreads levelled off, while the downward trend for short- and long-term spreads continued. In 1998-2000 long-term credits and deposit rates fell simultaneously. High long-term spreads are likely to be caused by decreasing long-term deposit rates from almost 14% in 1993 to around 5.5% in 1997 (Table 3-4-8).

Table 3-4-8: Interest Rates on New Credits and Deposits (CZK) 1993-2000 %

	1993	1994	1995	1996	1997	1998	1999	2000
Average nominal Interest Rates on New Credits								
Total	14.9	13.0	13.2	13.4	16.2	14.7	8.6	6.9
Short-term	14.7	12.5	13.0	13.3	16.3	14.9	8.4	6.6
Medium-term	16.7	14.5	14.3	14.4	15.8	13.3	9.2	8.1
Long-term	12.1	14.0	13.3	13.6	15.3	13.9	10.2	7.7
Average nominal Interest Rates on Deposits								
Total	7.0	7.1	7.0	6.8	7.7	8.1	4.5	3.4
Short-term	9.6	9.4	9.7	9.4	11.2	11.3	5.8	4.4
Medium-term	11.8	11.5	11.0	10.2	10.6	11.8	6.2	4.5
Long-term	13.7	12.6	10.2	7.1	5.4	4.6	3.8	3.6
Real rates based on CPI								
New credits			3.8	4.2	7.1	3.8	6.5	3.1
Time deposits			1.0	0.6	1.8	-0.2	3.4	0.6

Source: CNB. Own calculations.

During this period, however, long-term credit rates increased gradually from 12.1% to 15.3%. High interest rates resulting from the restrictive monetary policy of the CNB were an important factor which undermined the financial state of the banking sector. While in 1993-96 (1997-98) interest rates¹²⁰ on new credits tended to lie on average less than 1 (2) percentage point above interest rates on the stock of outstanding credit, in 1999-2000 interest rates on new credits were less by under 1 percentage point than those on the stock of loans. Similarly, interest rates on new credits were on average only less than 1 percentage point higher than those on the foreign currency denominated loans in 1999-2000 while being on average almost 9% higher in 1997-98. Thus, only almost after a decade domestic banks were able to charge competitive rates for new credits. As regards the interest rates charged on deposits one can observe

¹²⁰ End of year figures.

that these were reduced by more than 55% at the end of 1999 compared with 1998. At the same time, rates on CZK deposits were on average 5 percentage points higher than foreign currency denominated loans in 1997-98; this difference was reduced to 1 percentage point in 1999.

Average real spreads show - in line with the developments of average nominal spreads - an increasing trend in 1995-1997 and a decreasing trend from 1998 to 2000 (Table 3-4-7). One explanation for the decreasing spread in 1998 could be a decrease in rates for new credits by almost 55% since 1997, and the negative real rates for time deposits during the first half of the year. High spreads for a prolonged period of time were partly induced by high totals of bad loans, and the compulsory provisioning requirements since mid-1994. In Ceska Sporitelna, for instance, provisions made up 71%, 46%, 62% and 80% of profits before tax in 1994, 1995, 1996 and 1997, respectively.¹²¹ High spreads may have been also partly induced by limited competition resulting from the policy restricting the involvement of foreign banks to their participation in the privatisation of domestic banks. Besides the reluctance of foreign banks to enter deposit banking, thereby challenging the market position of big banks, the incumbent banks did not face severe competition for their main clients, in as much as foreign banks preferred to provide loans to the foreign companies which they followed.¹²² Only recently, almost a decade after, a decline in spreads can be observed, partly resulting from a low inflation rate in 1999 and high provisioning requirements by banks (Table A 3-4d, 21).

In 1997-1998 spreads for foreign currency denominated loans¹²³ - though showing an increasing trend - were lower than spreads for CZK loans which show a decreasing trend (Table 3-4-9 and Table 3-4-10). Spreads for foreign currency denominated loans increased by 13% over spreads for CZK loans in 1999. In 2000, however, spreads for CZK loans improved and were 18% better than spreads for

¹²¹ Calculations based on Consolidated Profit and Loss Accounts (IAS).

¹²² For a detailed discussion see section 4.4.

¹²³ Available data for rates on foreign currency denominated loans is not average but end of year.

foreign currency denominated loans. In 1997 and 1998 rates on foreign currency denominated loans were 64% and 55% less than CZK denominated loans, respectively. In 1999-2000 the gap between both rates decreased. Rates for foreign currency loans were almost 10% lower than the rates for loans denominated in CZK.

Table 3-4-9: Commercial Bank Interest Rates for Newly Drawn Credits and Foreign Currency Denominated Deposits % 1997-2000 (end of year)

	1997	1998	1999	2000a
Newly Drawn Credits				
Total	5.9	5.4	6.1	6
Short-term	5.9	5.3	6.2	5.9
Medium-term	5.6	5.9	5.3	6.7
Long-term	6.1	5.6	6	6.6
Deposits				
Total	2.7	2.3	2.7	3.2
Short-term	3.4	3.1	3.9	4.5
Medium-term	5	3.3	4.2	4.9
Long-term	5.5	3.5	4.7	5

Source: CNB, 2000. a= as of August

Table 3-4-10: Commercial Bank Spreads for Newly Drawn Credits and Foreign Currency Denominated Deposits % 1997-2000 (end of year)

	1997	1998	1999	2000a
Total	3.2	3.1	3.4	2.8
Short-term	2.5	2.2	2.3	1.4
Medium-term	0.6	2.6	1.1	1.8
Long-term	0.6	2.1	1.3	1.6

Source: CNB, 2000. a= as of August

Client Base and Investment Policies of Banks

Assuming that private enterprises are more efficient than SOEs, the restructuring of banks' balance sheets away from loans to SOE toward loans to private firms would indicate that an efficient allocation of resources is actually taking place.

The available data on Komerčni Banka indicates that lending to SOEs was reduced while private sector lending was increased (Table 4-4-2). This does not necessarily imply a change of customer structure but is more likely to do with the voucher privatisation. This assumption seems to be also confirmed by the fact that from 1995 to 1996, loans to foreign owned companies in Komerčni Banka increased

from 1.9% to 2.1% of total loans granted, while deposits from foreign owned companies were reduced from 4% to 3.1% of total deposits.

Only in 1998 and 1999, more than eight years into the transition, were SOBs able to adjust their lending policies towards more risk-aware lending institutions, reflected by the lower share of long-term loans in their asset portfolio compared to NEBs and foreign banks (Table 3-4-6). The privatisation of enterprises seems not to have played a significant part in the recent adjustments in bank behaviour because the voucher privatisation did not help the restructuring of enterprises.¹²⁴ The adjustments are possibly due to stringent prudential regulations, taking advantage of more experience in banking business both on the part of bankers and of supervisors, reducing of Government subsidies to SOEs since 1996 (Table 3-4-11) and, not least, the privatisation of SOBs.

Table 3-4-11: Share of Subsidies to Enterprises and Financial Institutions in Consolidated General Government Expenditure and GDP (in %)

	1993	1994	1995	1996	1997	1998	1999
Consolidated general Government expenditure excluding net lending	14.8	16.2	19.3	19.1	18.8	18.8	17.9
GDP	6.4	7.1	8.3	8.0	7.8	7.8	7.7

Source: Ministry of Finance Czech Republic.

NEBs appear to have preferred to supply funds mainly to private sector enterprises (Table 4-3-6). Concentrated loan portfolios and lack of diversification seem to be very prevalent among NEBs. Nevertheless, an increasing trend in investments in Government securities among NEBs (Table 3-4-12) since the start of the transition indicates that small banks began to search for a better risk-return package for the liquidity needed in their portfolios to accumulate the loan-loss reserves required by the regulations. In 1992-96, the liquidity of NEBs was low, while it began improving in 1997 (Table A4-3-2,a). The latter may have followed from improved regulations on solvency and liquidity requirements. Government securities in the portfolio of NEBs increased on average by more than 60% in 1997 compared to 1996, and in 1998-99

¹²⁴ Estrin, S. (1994, p. 166).

their holding of treasury bills was on average almost 80% and more than 10% higher than that of SOBs and foreign banks, respectively (see Table 4-3-2,d for the extent of securities in the portfolio of each NEB). This indicates an improvement in the lending policies of NEBs, in as much as treasury bills are the safest of all money market instruments because there is no possibility of default.¹²⁵ Furthermore, a high share of short-term loans in NEBs in 1997-99 indicates that small banks have only recently began to pursue risk-aware lending policies.

Table 3-4-12: T-bills to Total Assets (in %)

	1992	1993	1994	1995	1996	1997	1998	1999
SOBs	1.0	6.3	6.3	6.3	6.6	1.6	3.4	5.7
NEBs	0.8	5.3	6.5	5.5	4.8	7.7	7.9	8.3
Foreign Banks		6.3	7.6	9.7	7.5	9.2	5.7	8.7

Source: BankScope 2000; own calculations.

Foreign banks, in turn, were mainly granting loans to foreign enterprises and seem to have reacted to increased uncertainty by pursuing risk-aware lending policies and abstaining from long-term investments, which are connected with higher risk, or longer-term loans with fixed interest rates (Table 3-4-6). Indeed, the maturity analysis reveals that foreign banks' share of long-term credits was higher than other types of banks only in 1998. Furthermore, foreign banks' investment in Government securities was on average highest during the period studied (Table 3-4-12). One can observe that in 1992-97 foreign banks were holding on average 72% and 58% more treasury bills than SOBs and NEBs, respectively. In 1998-99 foreign banks were holding on average almost 60% more treasury bills than SOBs. This additionally reflects the risk averse lending policy of foreign banks. According to the interviewees the reason for foreign banks' reluctance to undertake longer-term commitments, in contrast to domestic banks was, besides the desire to avoid the high risk associated with the transition, limited refinancing options. Domestic banks had a strong retail banking network which gave access to longer-term refinancing alternatives in local currency whereas

¹²⁵ Mishkin (1995, p. 27).

foreign banks had to build up working capital first by providing services in trade financing or conducting short-term investments. Thus, one can plausibly conclude that neither SOEs nor privatised enterprises benefited to a significant degree from the relatively favourable terms offered by foreign banks, except those enterprises with monopoly power and good rating.

3.5 Summary

An analysis of the annual statements has revealed that overall domestic banks have been less profitable than foreign banks and privatised banks. The evidence suggests that foreign banks have tended to outperform small domestic banks and that the profitability of small- and medium-size banks drastically improved with the involvement of an FSP. The chapter which follows looks at the quality of corporate governance in the four categories of banking firms, namely SOBs, NEBs, foreign banks and privatised banks in order to find out how the process of credit allocation in the economy was determined and whether this was done efficiently.

CHAPTER FOUR

CORPORATE GOVERNANCE WITHIN DIFFERENT GROUPS OF BANKS - AN IN-DEPTH ANALYSIS

4.1 Introduction

Corporate control within banks denotes the mechanisms by which shareholders influence banks' decisions. Corporate governance, and hence efficiency, within banks carry implications for the efficient performance of the real economy. Corporate governance in TEs is a special case, firstly, because difficulties coming with the transition require special supervision and control and, secondly, because there is a lack of qualified and experienced board members able to exert effective corporate control. This may indicate that principal-agent problems and moral hazard are likely to be already quite severe in TEs. This chapter is an empirical examination of the quality of corporate governance - one of the sources likely to induce X-inefficiency - based on an in-depth analysis of four groups of banks, namely SOBs, NEBs, foreign banks and privatised banks in 1992-1999 on the basis of the empirical findings from the fieldwork, that is, primary data collected by interviews and questionnaire survey. The analysis is in four sections, covering the quality of corporate governance in SOBs, NEBs, foreign banks and privatised domestic banks. The aim is to devise proposals for improving governance within banks, and hence their competitiveness, which is the main objective of the attempts to restructure the financial sector of the policy makers.

4.2 Corporate Governance in SOBs

In TEs it is difficult to prove the existence of fraud in banks. This is mainly due to the fact that in a transitional environment it may be difficult to distinguish between managerial incompetence and outright fraud even if relatively adequate supervision was present. In particular, it became even more difficult to distinguish managerial incompetence from outright fraud given the fact that the SOBs took over the main allocative mechanism for financial resources previously fulfilled by the monobanks. Table 8 in Section 3.3 presents descriptive statistics of the factors which were generally cited as the external causes of the newly-incurred non-performing loans by the respondents to the survey. Especially during the initial stages of the transition, according to the respondents, managers were informal supporters of Government interests in SOBs by being obliged not only to maintain state-owned enterprises until privatisation, so as to provide loans for the purpose of privatisation and direct sale, but also to prevent loss-making firms from liquidation.¹²⁶ This was the most important cause of non-performing loans in 1992. In short, it is claimed that if it was in the politicians' interest state owners played the role of an active shareholder and big banks were pressured to provide loans to certain entities. Political pressure as a cause of non-performing loans ranked as the least important external factor in 1997. For foreign banks, political pressure was entirely absent.

A separation between fraud and managerial deficiencies became even more difficult because high instability and the difficulties in financial analysis, the evaluation of risks involved and projection of the future in TEs all require expert knowledge. The main issue impeding efficiency, according to the representatives interviewed, was bureaucratised head offices and non-bankers employed in their institutions. The managerial staff of the SOBs carved out of the monobanking system had a background in loan banking of the communist regime or had only been employed in Government institutions, enterprises or schools.¹²⁷ A great part of the banking staff held engineering degrees, as there was a lack of graduates in the

¹²⁶ see Section 3.3 (Question 3).

¹²⁷ The prevailing structure in the Czech Republic permitted only limited knowledge of financing. Planned economy funds were allocated to enterprises according to the central plan only.

disciplines of business and economics. Therefore, one can plausibly assume that the SOBs were not necessarily organised and staffed properly to perform the new task of risk evaluation. According to the questionnaire results, insufficient loan analysis pertaining to the borrower's management skills and inadequate analysis of the financial statements are the most important causal factors within the subgroup of skills among banking staff which initially encouraged non-performing loans.¹²⁸ These two factors became less important in 1997. This improvement can be partly related to the acquired experience since the beginning of the transition process. Ill-conceived terms placed on loans were the second most important causal factor, followed by poor review and audit of marginal loans, which became the most important factor later and in 1997. The poor review and audit of marginal loans was and still is the third most important causal factor in non-performing loans. Still, there is some reason to assume that informal activities were much in evidence among SOBs.¹²⁹

Retaining an ownership interest for the purposes of monitoring and control through the corporate governance mechanism may help to overcome the time required for regulatory restructuring to take a foothold by building up the appropriate institutions and gaining of expertise. The following section examines in detail how far the Government was able to exercise control through the mechanism of internal corporate governance.

4.2.1 Ownership Control within SOBs

According to the "principal-agent theory" shareholders can exercise only limited control over the managers, allowing the pursuit of inefficient strategies.¹³⁰ Identifying corporate governance issues in the SOBs becomes a dilemma considering the

¹²⁸ Section 3.3 (Question 8).

¹²⁹ Some domestic economists, such as Chvojka, Petr (1996), argued that the state does not pursue political objectives via its ownership stake in banks, but the banks carry out their own strategies.

¹³⁰ See for a theoretical and empirical literature discussing the conflict of interest between managers and shareholders Morck, R., A. Shleifer, and R. W. Vishny (1989, 1990), Shleifer, A. and Vishny R. W. (1986, 1989), and Jensen, M. (1986). See also section 1.2.

interwoven ownership structures among SOBs, SOEs and IPFs. The ownership of the top six IPFs by large banks has created a pseudo-privatisation as the state continued to control Czech companies via its ownership of the four largest commercial banks. This implies a concentration in the ownership structure of SOBs. This assertion is confirmed by the empirical evidence provided by Turnovec (1999). His empirical findings show that in the Czech case taking into consideration indirect property distribution, state responsibility in the banking sector is significantly higher than appears on the basis of primary property distribution.

State ownership of a bank implied authority on the part of three institutions, namely, the Ministry of Finance, the NPF and the CNB. According to the interviewed SOB managers, state control over their banks was limited. This was attributed to lack of clarity as to which institution was the real owner with the authority to approve decisions on crucial matters; the absence of unanimity left SOBs in a vacuum.¹³¹ Evidence for this can be difficult to discern but the following reasons and events may strengthen these claims.

CNB

Given the Act No. 22/1992 and its amendment 6/1993 which gives the central bank authority *inter alia* to set and enforce prudential banking regulations, one could presume that the CNB, in contrast to the NPF, was likely to come up to its task of supervisory and regulatory authority.¹³² This assumption was weakened for the following reasons. One reason was that the Bank was unable to exert authority over the big banks.¹³³ According to the representatives of the SOBs this was particularly due to the fact that bankers viewed policies adopted by the central bank with scepticism. The *laissez faire* policy of the first Government assigned to SOBs carved

¹³¹ Interviews with Miroslav Pise, Assistant to the Chairman and CEO at the Česká Sportelna, (15 April 1998) and with Jiri Vranek, Bank Analyst at IPB, (7 April 1998).

¹³² CNB Act number 6/1993 Coll. specifies the duties of the CNB as a monitor and regulator of the banks in the Czech Republic.

¹³³ Interview with Dr. Ivan Cenohorsky, Managing Director at Hypo-Bank, (3 April 1998).

out from the mono-banking system several tasks for the promotion of the transition process. One was the task of promoting the production sector, i.e. SOBs had to fill the gap occupied by development banks. Furthermore, during the privatisation process banks had many obligations to fulfil because the planning commission was dismissed, leaving the task of differentiating enterprises with good prospects from other enterprises to the banks.¹³⁴ Given that this new task gave wide authority to big banks vis-à-vis the CNB, it was likely that SOBs were inclined to incur moral hazard by overriding the central bank's authority.

NPF

The NPF was established in 1991 under a law adopted by the Czech Parliament dealing, as a general matter, with the administration and structure of the privatisation process. Accordingly, ownership of all state enterprises to be privatised was transferred to the NPF. The NPF was entitled to dispose of such assets according to privatisation projects submitted to and approved by the Czech Government.¹³⁵ However, the NPF was not endowed with special authority. It remained dependent on Government strategies and was unable to pursue an active form of ownership, but conducted a passive and neutral policy without interfering in banks. Evidence for the NPF's conduct of a passive and neutral policy with respect to the assets under its custody can be provided by investigating its role during the privatisation of SOBs. The privatisation revenues of the state stakes in major banks did not yield much to the Government budget. The Government's 36% stake in IPB was planned to be sold for CZK 5.9 bn (\$175 mn). Ultimately, however, it was sold for a mere CZK 2.9 bn.¹³⁶ Similarly, the state took over CZK 20 bn in bad loans in Agrobanka, once the nation's

¹³⁴ Interview with Karel Spacek, Finance Minister of the Czech Republic from 1989 to 1992. Presently employed at the Ceska Sportelna, (15 April 1998).

¹³⁵ or its Ministry of Privatisation.

¹³⁶ "Banks near ground zero," *The Prague Post*, May 13, 1998.

largest private bank, and sold it to General Electric Co. for about CZK 2 bn, instead of the planned CZK 4 bn.¹³⁷

The NPF's decisions were additionally restricted because ownership of a portion of the shares held by the NPF were claimed by the Slovak authorities. The CSOB, for instance, had four different shareholders, that is, the CNB, NPF, the Slovak state and the National Bank of Slovakia. The latter held about 24% of the bank's capital. The decisions of the National Bank of Slovakia were generally in disagreement with those of the Czech authorities.¹³⁸ This created consolidation problems such as the transfer of profits.¹³⁹ The Slovak NPF also claimed a quite significant ownership stake in the Komerčni Banka. Additional evidence for the insufficient control over the SOBs can be drawn from the sale of IPB. The sale of the state stake in IPB exemplified the fact that insufficient state control not only brought less in privatisation proceeds than expected but also led to the demise of the bank because the FSPs had no long term interest in the bank but only an interest in stripping off its valuable assets.

Mutual Ownership Stakes

A further issue which inhibited successful control of the SOBs was the mutual ownership stakes among big banks and the confusion brought about through hostile take-overs resulting from the dispersed ownership of the SOBs. The legal framework governing the activities of banks and IPFs provides some protection against the concentration of bank ownership. The banking law stipulates that central bank approval is required whenever banks merge, or whenever more than 15% of a bank's equity changes hands. The 1991 Act regulating IPFs prohibits banks from establishing IPFs with the aim of purchasing shares in other banks. This law also set a limit of 20% on an IPF's ownership of shares in any one company, including banks. These rules

¹³⁷ Ibid.

¹³⁸ The Slovak authorities were especially against the privatization of the bank.

¹³⁹ Author's interview with Doc. Ing. Petr Chvojka, Chief Economist at CSOB, (14 April 1998).

proved easy to circumvent as they did not prevent bank subsidiaries from setting up IPFs to handle such operations, resulting in the dispersed ownership of banks. During the first wave of the privatisation programme most banks, except the Zivnostenska banka, set up subsidiaries for the purpose of setting up IPFs which then could successfully bid for bank shares. Ceska Sportelna was the only bank which was permitted to acquire shares in other banks without having to resort to a two-step approach.¹⁴⁰ It was estimated that on average 10-15% of each large bank was owned by bank-owned funds.¹⁴¹

Big banks were further deprived of permanent shareholder control in as much as speculative-oriented investors were particularly interested attacking the IPFs connected to banks, destabilising them in several instances. The case of Motoinvest can be taken as evidence to illustrate the interests of funds acquiring ownership stakes in banks. Motoinvest acquired a significant number of shares of Komerčni Banka, only to make an offer to Komerčni Banka at an agio of 200%- 250%.¹⁴²

4.2.2 Shareholder and Depositor Protection

Further evidence to support the existence of moral hazard in SOBs can be discerned from financial analysis. Because debt contracts are subject to moral hazard by borrowers,¹⁴³ here the banks, the development of the deposits to equity ratio (i.e. financial indebtedness) may indicate the propensity of the managers to take risk. The ratio of deposits to equity can be taken as a proxy to measure the degree of risk taking on the part of banks' management. Higher ratios are likely to be associated with a higher volatility of net earnings, which bears high risk of loss of savings.

Table 4-2-1 shows the solvency of the SOBs studied. In 1990-1992, the financial indebtedness of SOBs was higher than that of NEBs and foreign banks.

¹⁴⁰ The Ceska Sportelna investment fund ended up with an estimated 9% slice of the Komerčni Banka.

¹⁴¹ The Center for Coupon Privatisation estimates that bank-owned funds owned an average 15% of the large banks.

¹⁴² This incidence was not official and thus cannot be proved.

¹⁴³ Mishkin,1995, p. 220.

Table 4-2-1: Solvency of the SOBs Studied

<i>Debt to Equity Ratio</i>		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Ceska Sporitelna				28.18	29.28	17.77	16.78	15.58	13.22	16.54	14.08
CSOB		19.53	20.07	9.12	9.24	9.54	8.18	8.33	7.34	6.42	5.62
IPB		37.75	16.41	19.20	16.42	12.28	12.95	9.91	28.41		
Komerčni Banka				23.16	15.64	9.75	10.40	10.14	12.66	16.89	17.86
Zivnostenska banka		25.94	22.20								
Mean		27.74	19.56	19.92	17.64	12.33	12.08	10.99	15.41	13.28	12.52
<i>Equity to Debt Ratio</i>											
Ceska Sporitelna				0.04	0.03	0.06	0.06	0.06	0.08	0.06	0.07
CSOB		0.05	0.05	0.11	0.11	0.10	0.12	0.12	0.14	0.16	0.18
IPB		0.03	0.06	0.05	0.06	0.08	0.08	0.10	0.04		
Komerčni Banka				0.04	0.06	0.10	0.10	0.10	0.08	0.06	0.06
Zivnostenska banka		0.04	0.05								
Mean		0.04	0.05	0.06	0.07	0.09	0.09	0.10	0.08	0.09	0.10

Source: BankScope. Own Calculations; Note: (1) Financial indebtedness; (2) Financial independence.

High ratios of financial indebtedness of the Ceska Sporitelna and Komerčni Banka in 1992-93 are likely to be a result of their inherited portfolios of operations as the main savings bank and commercial bank, respectively. The Ceska Sporitelna has historical dominance over savings.¹⁴⁴ Komerčni Banka, the second biggest savings bank, has a competitive advantage of having an extensive branch network within the country. High ratios of financial indebtedness in the Ceska Sporitelna and Komerčni Banka in 1992-93 are also likely to be a result of high levels of inter-bank lending by the Ceska Sporitelna for the privatisation process. Repayment of these credits did not occur and on average 1/3 were classified as bad loans.¹⁴⁵ In case of failure, the owners' stakes in the failed banks were simply transferred to these major banks in lieu of the loan (a 'debt-for-equity' swap).¹⁴⁶ According to the judgement of the interviewed managers of Ceska Sporitelna 85% - 87% of bad loans by the Ceska Sporitelna were incurred during the period 1991-92 by new enterprises.¹⁴⁷ Between 1992 and 1999 a significant improvement of financial indebtedness among SOBs could be observed, due likely to competition for deposits coming with NEBs and foreign banks. At the time of the survey in 1998, 65% of the savings were deposited with Ceska Sporitelna. In the case

¹⁴⁴ A survey by Kern, H. (1994) conducted in April 1993 reports that 97.5% of savers keep their savings in a domestic bank.

¹⁴⁵ Interview with Miroslav Pise, Assistant to the Chairman and CEO at the Ceska Sporitelna. (15 April 1998).

¹⁴⁶ Interview with Miroslav Pise, Assistant to the Chairman and CEO at the Ceska Sporitelna. (15 April 1998).

¹⁴⁷ Interview with Miroslav Pise, Assistant to the Chairman and CEO at the Ceska Sporitelna. (15 April 1998).

of IPB, a high level of financial indebtedness in 1997 probably resulted from high levels of non-performing loans hiking up to 20% (of total assets 225.7 CZK bn) and 19.6% (of total assets CZK 234 bn) in 1996 and 1997, respectively.¹⁴⁸ At end of 1996 the share of inherited bad loans not covered by recapitalization was 18.6 %.¹⁴⁹

The reciprocal of financial indebtedness is financial independence, measured by the ratio of equity to deposits. Basically, this ratio could be interpreted as the degree of protection for the shareholders. If borrowers (here, banks) have more at stake because of a high net worth, the risk of moral hazard will be greatly reduced.¹⁵⁰ Table 4-2-1 also shows the equity to debt ratios in SOBs. Overall, there was an improvement in the protection of the shareholders in 1990-99. Assessing big banks individually shows a steady improvement in the case of CSOB. This is not surprising, given that the bank was, as a specialised foreign trade bank, not exposed to much lending risk during the transition and more specifically the privatisation periods. Furthermore, the improvement is not necessarily due to the bank's strategy in as much as until 1996 the CSOB transferred selected credits to the Consolidation Bank. The remaining banks, namely Ceska Sporitelna, Komerčni Banka and IPB show increasing protection for the shareholders in 1990-96 but the protection of shareholders' interest in all these three SOBs shows a declining trend in the following years. A relatively low ratio of equity to debt in SOBs implies that these institutions are more sensitive to borrowers' success, but less capital at stake also implies that these intermediaries may have been very prone to increased moral hazard.

4.2.3 Fraud and Embezzlement at SOBs

Particularly in TEs, several factors make proper supervision and effective control even more difficult. One is that the difficulties associated with the transition require special control and supervision. According to the survey responses, adherence to prudential

¹⁴⁸ Figures are estimates as of June 1996 and 1997. "Invisible handshake deal between Nomura and IPB," *The Prague Post*, August 6, 1997.

¹⁴⁹ "Bank Hits Troubling Times Prague Notebook," *International Herald Tribune*, Green, Peter S. Sep., 1997.

¹⁵⁰ Mishkin, F. S. (1995, p. 221).

regulations within banks improved only gradually (Questions 5a and 7). In all SOBs studies fraud and embezzlement were very prevalent (Question 8n and 8p).¹⁵¹ Given the clandestine nature of illegal activities it is difficult to provide evidence for their existence. There is little or no publicly available evidence on the extent of banks' involvement in corruption in the Czech Republic.

Claims for the existence of informal activities among SOBs can be supported by the following facts. First, apart from the gradual implementation of the criminal law until 1997, ineffective judicial process - due in particular to a lack of precedent and implementation - may have given incentives for bank fraud or 'tunnelling'.¹⁵² Second, principal-agent problems were likely to be exacerbated due to the reluctance of policymakers to replace SOB managers' positions - as was the case in the enterprise sector - on the creation of the two-tier banking system.¹⁵³ A third is that there was a shortage of qualified and experienced board members able to pursue adequate corporate control and reorganisation. Insufficient or inadequate supervision by the board of directors can lead to managerial ineptitude and dishonesty. The chaotic organisation of SOBs was particularly evidenced during the process of privatisation to an FSP. In the case of IPB, its announced non-performing loans were lower than those of Ceska Sportelna and CSOB. However, three international auditors¹⁵⁴ were involved in the valuation of the bank and all came up with differing results ranging from two billion to six billion CZK. A further reason for fraud and embezzlement at SOBs could be associated with widely held views on the disadvantages of public ownership. The Government may either not be always seeking to maximise profits or be complacent towards its own firms' level of efficiency and profitability.¹⁵⁵

¹⁵¹ See Section 3.3.

¹⁵² The word 'tunnelling' is used in journalistic jargon to refer to improper withdrawal of assets in the Czech Republic. "Reform of the banking industry still seems a long way off," *The Prague Post*, 12-18 November 1997.

¹⁵³ In SOEs insiders were kept in employment, particularly because policymakers feared that if they lost their jobs they would object to the reforms. For this very reason insiders were given the opportunity to suggest the most feasible privatisation project which would enable them to put themselves at a perceived insider advantage during the following privatisation process (Svejnar 1995, pp. 211). See discussion under section 2-2-1 in Chapter II.

¹⁵⁴ These were Coopers and Lybrand, Price Waterhouse, Ernest and Young.

¹⁵⁵ The fundamental privatisation theorem, like the fundamental theorems of welfare economics, presume that no government could do better than the market. In the context of TEs this is particularly

Networks

Already existing lending relationships between SOBs and enterprises gives a rationale to assume that loan officers must have been able to make particularly well-informed evaluations of the riskiness of loans in as much as contracting with related firms is far less risky than contracting with outsiders.¹⁵⁶ Furthermore, the cross-ownerships between IPFs and big banks make it reasonable to assume that the prevalence of such structures would reduce asymmetric information and thus would result in resolving agency conflicts for effective corporate control, as was found initially both in Japan and Germany. Such assumptions may, however, be discarded for the following reasons: According to the interviewees, banks were inhibited from exercising effective corporate control for three reasons. Firstly, effective corporate governance was hindered because of the lack of share ownership concentration in institutional shareholders' hands. During the voucher privatisation most funds, bank-owned and others, bid for a relatively small number of shares in a large number of companies. In the 1994 through 1997 period bank-sponsored funds owned an average stake of around 21.3% in the firms in their portfolio, non-bank-sponsored IPFs owned 27.3% on average and local and foreign strategic investors owned 38.4% and 35.4%, respectively (Figure 4-2-3). Among over 300 investment companies only about 50 played a significant role in the corporate governance of firms through their board membership in privatised firms.¹⁵⁷ Nevertheless, nonbank-controlled, private IPFs have assembled more concentrated portfolios.¹⁵⁸

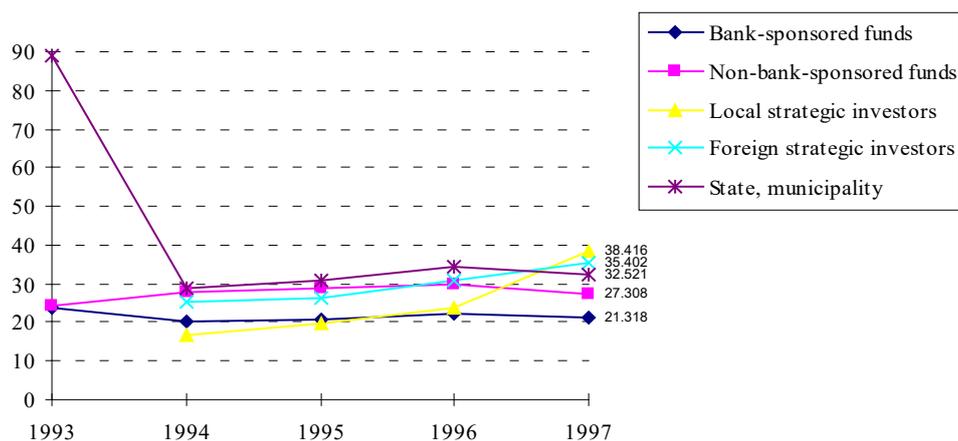
true with the prevalence of “soft” budget constraint, which enabled managers as much as the nomenclature/party apparatus to neglect the public interest and to pursue their own, via high material throughput and black market sales.

¹⁵⁶ Vittas, D. (1992, pp. 53).

¹⁵⁷ Claessens, S. and S. Djankov (1999).

¹⁵⁸ Ibid.

Figure 4-2-3: Average Ownership Stake (in %)



Source: Claessens and Djankov (1999)

Secondly, neither the SOBs nor the IPFs had sufficient well qualified people to be sent to the different statutory bodies among the enterprises to influence restructuring or to implement positive long-term strategy.¹⁵⁹ Thirdly, conflicts of interest were arising between the IPF management and the commercial banking operations. One possible reason for this is that in contrast to Poland the degree of corporate control function of investment funds was not stipulated by regulation.¹⁶⁰ As it turned out, contrary to expectations the Czech IPFs acted as normal mutual funds, i.e. they aimed for maximum earnings of portfolio investments.¹⁶¹ Banks, in turn, were interested in expanding their loan business rather than opting for high dividends or for profits to be reinvested, which, apart from attracting finance for associated enterprises, was the main objective of investment fund managers.

¹⁵⁹ Interview with Karel Jezek, Manager PR-Department, Zivnostenska Banka, (17 April 1998).

¹⁶⁰ Transition Report (1995, pp. 128).

¹⁶¹ Two observations make it likely that funds are not interested in the corporate control of enterprises. First, funds lack liquidity to restructure enterprises, and the only source of liquidity open to the funds is the sale of some of their portfolio (Estrin, S. 1994, p. 166). Second, the findings of Claessens, S. and S. Djankov (1999) suggest that particular types of owners, namely foreign strategic investors and non-bank-sponsored funds, and not the overall concentration of ownership, are associated with improvements in corporate governance in the Czech Republic. This is likely to do with the lack of skills required for corporate governance. Katz, B. G. and J. Owen (1997), for instance, argue that improved economic performance would prevail if, as a result of the bidding process, skilled managers acquired a larger share of ownership. However, the Czech case shows that voucher privatisation was not conducive to improvements in corporate governance. This was because the funds were newly formed at the time of voucher privatization, very little information was available to the populace about the skill of managers.

Networks in the Czech context reveal an essentially symbiotic relationship among SOBs, investment privatisation funds and state-owned enterprises, produced by the voucher privatisation method. Thus, one could safely conclude that ownership stakes among banks helped to maintain those structures prevailing during the socialist regime when very strong informal industrial and regional lobbies were able to manipulate the central planners. According to the interviews, connections with IPFs usually resulted in situations where the associated banks were viewed as partners with money. Tying their associated banks to conduct banking business solely with their own institution was not exceptional. The respondents claimed that there were occasions where enterprises were also forced to do banking business exclusively with the associated bank. This was attributed to the fact that the provision of finance to enterprises was not always without long-term strategic interest. Banks were competing to acquire viable parts of the Czech enterprise sector by rolling over non-performing loans, accumulating interest arrears and extending fresh credits.¹⁶² High amounts of non-performing loans enabled debt-equity swaps. Banks were driven by the idea that banks' customer portfolios and maintaining "owned" firms as a profitable income base would be among the main attractions for prospective strategic investors.¹⁶³ Restructuring of enterprises was neglected, as it was expected that new owners would pursue this.¹⁶⁴ This implies that SOBs were forced to enter unprofitable loan contracts whereas enterprises were prevented from searching for alternative and competitive sources of funds.¹⁶⁵

In addition, regulatory and other market imperfections, particularly at the end of 1995, induced IPFs to misuse their controlling positions in enterprises, influencing the trading and price of shares. This led to an additional reallocation process after the voucher privatisation, which became known as the "third privatisation wave." Banks were incurring further bad loans by providing funds to financial groups speculating in

¹⁶² Section 3.3 (Question 8).

¹⁶³ Interviews.

¹⁶⁴ Interviews.

¹⁶⁵ Interview with Karel Jezek, Manager PR-Department, Zivnostenska Banka, (17 April 1998).

the capital market. According to the interviews, the creation of Chinese walls between their investment banking and regular credit activities to prevent tunnelling was inhibiting the appointment of representatives to enterprises.¹⁶⁶ Only one bank interviewed, notably, the CSOB, could avoid being tied by an IPF in as much as the bank had the lowest share in the investment fund business (Table 4-2-3).

Table 4-2-3: Qualified Property Participation of Banks in the Entrepreneurial Sphere

(shares in their own capital in %)

Bank	Direct ownership participation	Participation through funds	Total
Komerční Banka	4.81	24.46	29.27
CSOB	1.86	15.07	16.93
IPB	31.87	62.60	94.47
Ceska Sporitelna	0.37	82.68	83.41

Source: Petr Chvojka (1996), CSOB.

Additional evidence for the existence of fraud can be discerned from the historical relations between politicians, bankers and the new private owners of SOEs. The risk of connectedness, according to the survey respondents, increased with the rapid turnover of staff, particularly among those with long-term work experience during the socialist regime, between banks. Rotation was mainly taking place at middle management level where, in contrast to senior positions, wages differed significantly among banks. According to the interviews a connection either resulted in being involved in illegal dealings and transactions or restricted the manager from freely pursuing banking business as doing so might have been to the disadvantage of the connected entities.¹⁶⁷

These assumptions about the existence of corruption are additionally supported by the survey of Miller, Grodeland et al. on the role of corruption in some TEs. Everyday interactions between citizens and the state, including the Czech Republic, in November 1997 and February 1998 could be used to represent the extension of

¹⁶⁶ Interview with Dr. Ivan Cenohorsky, Managing Director at Hypo-Bank, (3 April 1998).

¹⁶⁷ Interview with Ludek Prochazka, Director of Banking in Bankruptcy and Liquidation at the Consolidation Bank, (10 April 1998). According to the interview with Jiri Vranek, Bank Analyst at IPB in the case of the IPB personal connections indeed existed from 1991-1996, and even at present there is no guarantee that these relations have ceased (7 April 1998).

informal activities in banks.¹⁶⁸ According to this survey it was the people in the Czech and Slovak Republics who were by far the most willing to accept that corruption was a “permanent part of their country’s culture.” In the Czech and Slovak Republics around half the public thought the chief beneficiaries of the transition had been “politicians and officials”, about one-fifth that it had been “the former communist nomenclature”, and another fifth that it had been the vaguely defined “Mafia.” The numbers who thought “ordinary citizens” had been the chief beneficiaries never exceeded 4% in any country. “Politicians and officials” were still regarded as the most likely long-term beneficiaries in the Czech and Slovak Republics, and came a close second to “the Mafia” in Bulgaria and Ukraine. Two out of three citizens in the Czech Republic said “most” of their politicians now behaved worse than they had done “under communism.” These findings may suggest that SOBs’ operations are often underpinned by informal activities. In addition, according to the Czech Ministry of Finance there are 15 ways of stealing which were formally legal.¹⁶⁹

4.2.4 Measures to avert embezzlement

Concerned over the quality of the loan portfolio, SOBs in this study took diverse measures to avert the self-enrichment of their staff, in order to improve their loan assessment techniques and organisational structures. In order to avoid connectedness the big banks interviewed shortened the time required for promotion to senior positions. In the Ceska Sporitelna bankers were required to have at most two years’ work experience for promotion to a senior position.¹⁷⁰ As regards the improvements in loan assessment techniques, Komerčni Banka, for instance, introduced a new computer system which gives scores to enterprises based on information collected. The quality of an enterprise is measured on a colour scale ranging over five points from white through grey and black zones.¹⁷¹ Enterprises falling into the black zone are

¹⁶⁸ Miller, W., A. B. Grodeland, et al. (1998).

¹⁶⁹ Turnovec, F. (1999).

¹⁷⁰ At the time of conducting interviews in 1998 the banks’ junior vice-president was under the age of 30.

¹⁷¹ Interview with Hana Urbanova, Komerčni Banka, (14 April 1998).

not considered at all. Those in the grey zone are referred to their respective regional branches for the collection of additional information.¹⁷²

As regards the improvements in organisational structure in the SOBs, the interviews revealed that the dynamism of the younger staff eased the way in which the whole process of transformation was tackled.¹⁷³ Although banks agree that the contributions of both old and new staff were essential, old staff were better than new staff in building bank-borrower relationships due to already existing relationships with customers (Question 11).¹⁷⁴ Later, this advantage among old staff faded out as new and dynamic staff quickly adapted with improved training measures as well as the encouragement of rapid promotion (Question 15 and 19). ‘Older command bureaucrats’ were not always up to the challenges of the new system partly because radical improvement required creativity and breakthrough thinking. Particularly considering that their roles and responsibilities were most difficult to penetrate (Question 21). Indeed, evidence suggests that it might be better to hire an inexperienced person and to pay for his or her training than to rely on a “misexperienced” employee, i.e. one who has acquired his or her experience in an environment which lacked professionalism.¹⁷⁵ In line with this argument, since only the beginning of 1997, 2000 top management staff out of a total of 17, 000 employees in Ceska Sporitelna have been replaced by younger staff ranging in age between 26 and 30.¹⁷⁶ In IPB redundancies were only created with the entry of the FSP in 1998. Overall the number of staff was reduced from around 3,500 to 3,000.

¹⁷² Komerčni Banka has 14 regional branches.

¹⁷³ These findings are in conformity with the argument that long organization tenure tends to be associated with commitment to the organizational status quo (Michel, J.G. and D.C. Hambrick (1992); Staw, B. and J. Ross (1980). Generally, firms led by long-tenured executives will tend to have persistent, unchanging strategies and strategies and performance which conform to industry averages (Finkelstein, S. and D.C. Hambrick (1990).

¹⁷⁴ See Section 3.3.

¹⁷⁵ For instance the strategy of Swiss-based ABB in Eastern Europe is “...bypassing older command bureaucrats in favor of younger people, whom ABB finds more adaptable - and hungrier.” ABB has already trained more than 5,800 Eastern Europeans. “Managing: Yes, You Can Win In Eastern Europe,” *Fortune*, 16.05.1994, pp. 110. See also Bogacka-Kisiel et al. 1996, p. 7.

¹⁷⁶ Interview with Miroslav Pise, Assistant to the Chairman and CEO at the Ceska Sporitelna, (15 April 1998).

4.2.5 Summary

In general, the evidence relating to the studied banks suggests both significant control over bank behaviour - in terms of the allocation of funds to SOEs - but an absence of effective corporate governance within banks in terms of prudent management and promoting efficient banking. In the period discussed, the entrenchment of a concatenation of links between SOBs, IPFs and SOEs was likely to involve banks in imprudent banking activities, thereby significantly undermining the quality of SOBs' corporate governance and efficiency. The evidence provided showed that the most likely reason for the weak corporate governance within big banks was, besides weak regulations, major discrepancies between governmental institutions. In short, the lack of guidelines and supervision by owners left Czech banks in a vacuum. The pursuit of tunnelling, that is, the flow of loans from banks to enterprises with the ex-ante knowledge of non-payment of both parties, was probably eased by non-transparent ownership structures, i.e. cross-ownership of banks, funds and enterprises. This was likely to give "tunnellers" an opportunity to systematically appropriate assets from several enterprises and banks primarily via corrupt collusion. These findings support the assertion advanced by the World Bank that privatisation was foredoomed to failure by the Government's not having introduced proper institutions to control the development of capital markets.¹⁷⁷ This suggests that the privatisation of SOBs is the only means of alleviating principal-agent problems.

4.3 Corporate Governance in the Newly Established Private Banks

In NEBs corporate governance issues are likely to be severe for two reasons. One is associated with the fact that, in contrast to SOBs, newly established medium size banks needed to establish a client base, which, according to the respondents, was influenced by several factors. The bankers in the NEBs in the study claimed that they "perceived" that there was political pressure to provide loans. Firstly, this was partly

¹⁷⁷ World Bank (1998).

induced by the need of funds for investment in the economy. The Czech market for stock issues was nascent, venture capital still a novelty and credit rationing on the part of big banks in favour of historical borrowers left an increasing number of new enterprises without funds. Secondly, the Governments' pursuit of a policy of rapid privatisation was giving NEBs the opportunity to capture markets. Table 4-3-1 shows the numbers of newly established enterprises.

Table 4-3-1: Structure of National Economy: By Institutional Sector and Selected Legal Form

	Non-financial enterprises and corporations			Other monetary financial Institutions	Other credit institutions	Financial auxiliaries	IPFs	Investment companies	Insurance corporations
	Public	Private controlled ^a	Foreign						
Total registered units	2853	146398	41317	80	60	786	225	386	76
Private entrepreneurs	0	14078	258	0	0	4	0	0	0
Other business companies and partnerships	0	6605	330	0	0	26	0	0	0
Joint-stock companies (a.s.)	489	8922	331	56	7	228	225	118	68
Limited liability companies (s.r.o.)	167	108445	20698	0	0	486	0	83	0
Schools, health inst., associations, churches, etc.	27	328	0	0	0	8	0	0	0

Source: CSO; data processed as of 20.01.1998; ^a 34 933 in 1996 according to Statistical Yearbook of the Czech Republic, p. 528.

A further reason for assuming that corporate governance may have been weak among NEBs is the fact that several banks were established to provide funds for own enterprises. According to the interviewees the main reason for setting up own banks was the unsatisfactory performance of state banks. Although reform policies were promoting the expansion of private sector activity in the goods and non-financial services markets, prospective entrepreneurs did had no alternative source of finance except big banks. However, the conduct of payment transfers in SOBs was slow, requirements for collateral were excessive, interest rates were too high and there was a tendency to favour insolvent borrowers from the state sector and the Government (credit rationing), placing private enterprises at a disadvantage.¹⁷⁸ Indeed, in 1996 banks usually asked for 100-200% coverage in terms of collateral from private

¹⁷⁸ Indeed credit rationing is a phenomenon of transition economies. A survey conducted by Pawlowska, A. (1997) proves the existence of credit rationing in Poland. Also see Buch, C. (1996a, pp. 80 - 81).

firms.¹⁷⁹ In 1998 banks were still reluctant to make a mortgage loan even at three fifths of the value of the collateral due to the risk of reclaiming the property.¹⁸⁰

According to the interviewees banks were also founded as a result of the difficulty of getting finance from the leading Czech banks for the acquisition of shares in SOEs during the privatisation process. Acquisition of shares in SOEs was a privilege of big banks whereas prospective investors were placed at a disadvantage. Establishing own financial institutions enabled private entrepreneurs to obtain finances from the interbank market which in turn allowed them to acquire stakes in SOEs. There is no evidence to support this claim, but lack of funds in the economy makes it credible.

These factors which led to the establishment of banks and in particular the lack of experience in banking on the part of both stakeholders and managers suggest that banks were likely to gamble on the possibility of government bailouts in case of a liquidity crisis. In view of this it might be suggested that corporate control in the secondary banking sector was unlikely to be of prime concern.

4.3.1 Shareholder and Depositor Protection

Given the nature and obscurity of the data available on the NEBs, measuring financial indebtedness and independence is a tremendous task. The development of the debt to equity ratio and its inverse shows that corporate governance was most probably weak among NEBs (Table 4-3-2).

¹⁷⁹ "Czech Republic; Banking System Report," *BankWatch*, August 1996, p. 8.

¹⁸⁰ Interview with Nick Teller, General Manager at Commerzbank, (8 April 1998).

Table 4-3-2: Solvency of the NEBs Studied

<i>Debt to Equity Ratio</i>		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana						9.31	21.72	24.57			
Ceska Exportni Banka							0.03	2.38	0.24	1.16	2.75
Ceskomoravska Zarucni a R.Banka						3.14	4.15	3.75	2.90	1.93	2.42
Coop Banka			4.20	7.31	7.31	250.23*	-12.21				
Foresbank						1.22	4.95	260.64	9.44		
GE Capital Bank	12.26	13.61	25.53	-99.31	35.57	21.50	-9.46				
Interbanka			15.52	6.57	13.14	10.92	-3.94				
Moravia Banka			2.97	10.85	10.64	16.11	11.56	12.32	15.46		
Pragobanka			10.10	11.83	10.61	25.20	-15.32	23.33			
Prvni Mestska Banka								11.19	17.43	265.53	30.08
Union Banka			0.70	8.30	5.34	4.83	15.94	15.30	16.37	8.26	
Universal Banka						4.83	5.60	7.88	11.60		
Velkomoravska Banka				4.27	4.98	-563.53					
Expandia Banka										0.65	2.84
Mean	12.26	13.61	9.84	-7.17	9.65	-16.52	24.75	11.57	50.18	9.27	
<i>Equity to debt Ratio</i>											
Banka Hana						0.11	0.05	0.04			
Ceska Exportni Banka							31.01	0.42	4.24	0.86	0.36
Ceskomoravska Zarucni a R. Banka						0.32	0.24	0.27	0.35	0.52	0.41
Coop Banka			0.24	0.14	0.14	0.00	-0.08				
Foresbank						0.82	0.20	0.00	0.11		
GE Capital Bank	0.08	0.07	0.04	-0.01	0.03	0.05	-0.11				
Interbanka			0.06	0.15	0.08	0.09	-0.25				
Moravia Banka			0.34	0.09	0.09	0.06	0.09	0.08	0.06		
Pragobanka			0.10	0.08	0.09	0.04	-0.07	0.04			
Prvni Mestska Banka								0.09	0.06	0.00	0.03
Union Banka			1.43	0.12	0.19	0.21	0.06	0.07	0.06	0.12	
Universal Banka						0.21	0.18	0.13	0.09		
Velkomoravska Banka				0.23	0.20	0.00					
Expandia Banka										1.53	0.35
Mean	0.08	0.07	0.37	0.12	0.21	2.68	0.05	0.63	0.51	0.26	

Source: BankScope. Own Calculations. Note: (1) Financial indebtedness; (2) Financial independence; *Highlighted figures indicate year of entry of the FSP.

On the whole, however, ignoring the banks in a liquidity crisis, in 1990-99 the secondary banking sector shows an improvement in corporate governance. The average ratio of financial indebtedness in the NEBs shows a decreasing trend, implying less dependence upon debt contracts. This also implies that the degree of protection provided to depositors in NEBs has improved over time. Between 1990-99 aggregate deposits show a decline whereas equity, despite being unsystematic, grows over time. The average ratio of financial independence among NEBs, in turn, - ignoring the ratios of those banks in distress - shows an increasing trend. This suggests higher protection for shareholders over time, and hence increased incentives to exert effective corporate control. Increases in equity during the period studied is

likely to be a result of the restructuring programme for the secondary banking sector, i.e. the Consolidation Programme II,¹⁸¹ the requirement of the CNB for existing shareholders to increase initial capital and the involvement of new investors in banks under conservatorship.

Table 4-3-3 below categorises NEBs in the study according to their ownership structure. Details of the shareholders can be found in Table A4-3-1. Dispersed ownership structures were likely to be associated with principal-agent problems. The development of financial independence (equity to debt ratio), though extremely unsystematic, suggests that banks with concentrated ownership structure tend to have a higher level of protection for shareholders. In contrast, banks with a dispersed shareholding tend to offer a lower protection to investors. The ratios of financial indebtedness (ratio of debt to equity) for banks with concentrated ownership in turn show a decreasing trend, suggesting that the protection of depositors is improving over time. Investors in banks with a dispersed shareholding, however, tend to have a lower protection (Table 4-3-3). The latter may have followed from the inefficient functioning of the capital market with the prices of shares not reflecting the actual developments in banks and the inability of small shareholders to exercise property rights. In addition banks with dispersed ownership were more likely to fail:¹⁸² Moravia Banka and Universal Banka failed, whereas Agrobanka (now GE Capital Bank) and Banka Hana were acquired by foreign investors after facing financial difficulties.

¹⁸¹ For details on the Consolidation Programme II see section 2.2.4 in Chapter 2.

¹⁸² Matousek, R. (1998, p. 32) identifies the lack of transparency of shareholders as one of the main weaknesses of the small- and medium-sized banks.

Table 4-3-3: Debt to Equity Ratio (and inverse) According to Ownership Structure in NEBs

<i>Debt to Equity Ratio (One shareholder controls more than 50%)</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Ceska Sportelna			28.18	29.28	17.77	16.78	15.58	13.22	16.54	14.08
CSOB	19.53	20.07	9.12	9.24	9.54	8.18	8.33	7.34	6.42	5.62
IPB	37.75	16.41	19.20	16.42	12.28	12.95	9.91	28.41		
Komerčni Banka			23.16	15.64	9.75	10.40	10.14	12.66	16.89	17.86
Zivnostenska banka	25.94	22.20	11.23	11.94	12.28	13.65	12.31	13.64	13.33	14.33
Mean (major banks)	27.7	19.6	18.2	16.5	12.3	12.4	11.3	15.1	13.3	13.0
Ceska Exportni Banka						0.03	2.38	0.24	1.16	2.75
Pragobanka			10.10	11.83	10.61	25.20	-15.32	23.33		
Prvni Mestska Banka							11.19	17.43	265.53	30.08
Union Banka			0.70	8.30	5.34	4.83	15.94	15.30	16.37	8.26
Expandia Banka									0.65	2.84
GE Capital Bank									7.26	7.38
Mean (NEBs)			5.4	10.1	8.0	10.0	9.8	14.1	6.4	10.3

<i>Debt to Equity Ratio (Dispersed Ownership)</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					9.31	21.72	24.57			
Ceskomoravska Zaručni a Rozvojova Banka					3.14	4.15	3.75	2.90	1.93	2.42
GE Capital Bank	12.26	13.61	25.53	-99.31	35.57	21.50	-9.46			
Moravia Banka			2.97	10.85	10.64	16.11	11.56	12.32	15.46	
Universal Banka					4.83	5.60	7.88	11.60		
Mean (NEB)	12.3	13.6	14.2	10.8	12.7	13.8	11.9	8.9	8.7	2.4

<i>Equity to debt Ratio (One Shareholder controls more than 50%)</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Ceska Sportelna			0.04	0.03	0.06	0.06	0.06	0.08	0.06	0.07
CSOB	0.05	0.05	0.11	0.11	0.10	0.12	0.12	0.14	0.16	0.18
IPB	0.03	0.06	0.05	0.06	0.08	0.08	0.10	0.04		
Komerčni Banka			0.04	0.06	0.10	0.10	0.10	0.08	0.06	0.06
Zivnostenska banka	0.04	0.05	0.09	0.08	0.08	0.07	0.08	0.07	0.07	0.07
Mean (Major Banks)	0.04	0.05	0.07	0.07	0.09	0.09	0.09	0.08	0.09	0.09
Ceska Exportni Banka						31.01	4.42	4.24	0.86	0.36
Pragobanka			0.10	0.08	0.09	0.04	-0.07	0.04		
Prvni Mestska Banka							0.09	0.06	0.00	0.03
Union Banka			1.43	0.12	0.19	0.21	0.06	0.07	0.06	0.12
Expandia Banka										0.35
GE Capital Bank									0.14	0.14
Mean (NEBs)			0.77	0.10	0.14	10.42	0.13	1.10	0.52	0.20

<i>Equity to Debt Ratio (Dispersed Ownership)</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.11	0.05	0.04	FSP->		
Ceskomoravska Zaručni a Rozvojova Banka					0.32	0.24	0.27	0.35	0.52	0.41
GE Capital Bank	0.08	0.07	0.04	-0.01	0.03	0.05	-0.11	FSP->		
Moravia Banka			0.34	0.09	0.09	0.06	0.09	0.08	0.06	f
Universal Banka					0.21	0.18	0.13	0.09	f	
Mean (NEB)	0.08	0.07	0.19	0.04	0.15	0.11	0.08	0.17	0.29	0.41

Source: BankScope. Own calculations.

In the case of Agrobanka, lack of transparent ownership structures led to a dysfunctional relationship between the management and the new owner in 1995 and made it difficult to find shared values between them.¹⁸³ Lack of control led to a substantial deterioration of the bank's liquidity resulting in an enforced administration on 17th September 1997.

4.3.2 Embezzlement of Funds

¹⁸³ Interview with Dr Slavoj Czesany, Adviser to the President and CEO at the Agrobanka, (9 April 1998).

During the transition period it was widely acknowledged that fraud and corruption were endemic in the banking and business sectors.¹⁸⁴ According to estimates at the end of 1997 approximately CZK 140 bn (\$4.2 bn) was embezzled through white collar crime.¹⁸⁵ Several NEBs were liquidated on grounds of fraud (Table A2-2-4), the first being Banka Bohemia, on grounds of imprudent dealings such as dealings with prime bank guarantees.¹⁸⁶ However, it should be remembered that NEBs had limited sources of earning. In their search for funds these banks were much tempted to pursue speculative activities. Table 4-3-4 shows that inter-bank lending by NEBs was almost non-existent.

Table 4-3-4: Loans to Banks over Total Assets

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GE Capital Bank	0.90	0.89								
Interbanka		0.23								
Pragobanka		0.83								
Velkomoravska Banka				0.70	0.68	0.59				
Zivnostenska banka	0.46	0.13								
Expandia Banka									0.20	0.40

Source: Own calculations based on data from BankScope.

Furthermore, given the shortage of qualified staff in banking it is also possible that this sector was more prone to be exploited by speculators.¹⁸⁷ Nevertheless, several factors indicate that NEBs were particularly involved in clandestine activities and

¹⁸⁴ "Reform of the banking industry still seems a long way off," *The Prague Post*, 12-18 November 1997.

¹⁸⁵ Ibid.

¹⁸⁶ The Banka Bohemia, one of the first private banks in Czechoslovakia, established at the beginning of 1991, became the first bank to fail in the Czech Republic, due not only to its rapid expansion strategy but also to its deals with prime bank guarantees. Prime bank guarantees purport to be debt instruments, but are actually a form of unsecured promissory note; experts in financial fraud call them "rollover schemes". The rollover happens when an inexperienced bank eager to tap the international capital markets falls prey to middlemen who promise to buy the securities and then resell them at a profit to (equally inexperienced) investors. The bank never sees its money; investors are lumbered with potentially worthless paper; and the middlemen vanish with the cash. For instance among those who bought the Banka Bohemia's rogue paper was America's National Council of Churches of Christ. Its health-insurance fund paid \$7.9m for prime bank guarantees with a face value of \$12m, a hefty discount. The paper was sold by London-based middlemen.

¹⁸⁷ The banking staff dealing with prime bank guarantees at Banka Bohemia had extensive contacts with a group based in Germany, Switzerland, UK, London and the US. As this institution had already carried out some operations with good banks in developed countries, the newly established private banks in the Eastern Europe had no reason to be suspicious (Interview with Jan Zizka, Banka Bohemia 15 April 1998).

were set up for the purpose of tunnelling. One is the relatively low amount of capital at stake. The minimum capital for new banks as well as existing banks was raised from CZK 300 mn¹⁸⁸ (11 mn \$) to CZK 500 mn (18 mn \$) in January 1994. Low capital requirement, in turn, made concentrated ownership among NEBs quite common. No examinations were undertaken about the source of the minimum capital required. Because charter requirements were not very stringent a private-sector bank could be easily set up either with its own funds coming from private entrepreneurship or borrowed funds from big banks. Besides the redistribution credits obtained from the State bank, the Government's pursuit of a policy to promote the banking sector gave the new entrepreneurs easy access to funds from big banks.

A second is that along these structures with weak chartering requirements a mandatory deposit insurance scheme was introduced in July 1994. Up to 1994, private deposits in SOBs were fully insured by the Government. Under the new scheme all deposits of natural persons were insured either by an amount of 80% of the deposit or a maximum of CZK 100,000 per depositor (whichever was higher). This may have additionally increased moral hazard incentives on the part of bank managers and owners.

A third is that the legal form of limited liability was most popular among the newly established enterprises. As of January 1998, 108,445 limited liability companies (s.r.o.) out of a total of 146,398 registered units were recorded in the Czech Republic (Table 4-3-1). This legal form does not permit the lender to enforce rights by claiming the assets of the limited liability company.

Given the clandestine nature of corruption it is difficult to prove its extent, the method of conducting such activities or the degree of involvement of managers and owners. Because some banks were merely established to offer loans to their own limited liability companies it becomes even more difficult to prove the presence of self-dealing by managers. Nevertheless, some evidence was obtained during the

¹⁸⁸ The requirement for depositing capital was increased to CZK 300 mn in 1992, also applying to banks already in existence.

fieldwork on the prevalence of corruption in the secondary banking sector induced by owners. Both interviewees and questionnaire respondents were not reluctant to admit that informal activities were widely entrenched in their banks.

The officials interviewed from the NEBs gave a number of reasons which were causing principal-agent problems. First, the qualifications of the private owners to run a bank in particular were questioned by the banking staff who participated in the interviews. Agrobanka's experience with their strategic partner Motoinvest, initially a financially strong group, evidenced this point.¹⁸⁹ Agrobanka was acquired by the Motoinvest group, with no background in banking business.¹⁹⁰ In addition, since Motoinvest co-operated with many other enterprises its equity share in the bank led to disputes on the rights over the majority stake.

Second, managers claimed to pursue owners' interest in particular at banks with a concentrated ownership structure. Several banks provide evidence for this claim. Ailing private banks such as Pragobanka, AB-Banka, Banka Bohemia, Regiobanka and Interbanka were usually characterised by concentrated ownership and were used as providers of funds for their shareholders (Table A4-3-1). Pragobanka, an NEB running at a loss since 1996, is owned by the Czeska Pojtowna (Czech Insurance Company), which - at the time of writing - covered about 60-70% of the insurance market in the Czech Republic. The bank was, as claimed by the manager interviewed, set up to be a service bank for the Czech Insurance Company Group.¹⁹¹ Similarly, shareholders of Regiobanka, a universal bank established in 1991, were at the same time borrowers.¹⁹² These NEBs, which were highly exposed to clients during the initial phases of their operations, were those which failed soonest (Table A2-2-4). The

¹⁸⁹ Motoinvest had also similarly disruptive involvement in Komerční Banka.

¹⁹⁰ Interview with Dr. Slavoj Czesany, Adviser to the President and CEO at the Agrobanka, (9 April 1998).

¹⁹¹ Interview with Petr Musil, Manager Correspondent Banking Department, Pragobanka, a bank under the Stabilization Programme imposed by the CNB, (16 April 1998).

¹⁹² Regiobanka was the predecessor of CMHB. Interview with Frantisek Pavelka, Executive Director of CMHB, (3 April 1998).

debtors of the AB-Banka, a bank in liquidation, were small individual businesses most of which went bankrupt before the bank's failure.¹⁹³

Further evidence comes from analysis of financial data. At the beginning of their activities NEBs seem to have provided high amounts of loans to the non-financial sector, which decreases towards the end of the period discussed (Table 4-3-5).

Table 4-3-5: Loans to Non-banks over Total Assets

	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana			0.64	0.58	0.66			
Bankovni dum SKALA		0.73	0.68					
Ceska Exportni Banka				0.01	0.01	0.01	0.02	0.04
Ceskomoravska Zarucni a Rozvojova Bk			0.01	0.02	0.003	0.05	0.12	0.18
Coop Banka	0.80	0.66	0.65	0.54	0.55			
Foresbank			0.68	0.34	0.37	0.09		
GE Capital Bank	0.31	0.64	0.66	0.55	0.56			
Interbanka	0.64	0.46	0.37	0.35	0.45			
Moravia Banka	0.77	0.82	0.62	0.63	0.60	0.52	0.55	
Pragobanka	0.91	0.85	0.79	0.67	0.64	0.43		
Prvni Mestska Banka					0.29	0.22	0.14	0.16
Union Banka	0.66	0.58	0.62	0.63	0.40	0.49	0.47	0.52
Universal Banka			0.56	0.60	0.47	0.22		
Velkomoravska Banka	0.70		0.04	0.06				
Expandia Banka							0.07	0.01

Source: BankScope 2000; own calculations.

With a decreasing supply of funds to the non-financial sector, there is a simultaneous increase in equity investment implying the conduct of debt-equity swaps (Table A4-3-2,e). The only surviving banks in the sample are Banka Hana (est. 1990), Prvni Mestska Banka (PMB) (est. 1992), Union Banka (est. 1991) and Expandia Banka (est. 1998). Data for Banka Hana is characterised by dispersed ownership (Table 4-3-3) but the bank is 63.88% under foreign ownership, making it difficult to be highly exposed to a few shareholders. PMB is owned at 88.48% by the Capital City of Prague which is a public corporation.¹⁹⁴ The bank's exposure to clients seems not to be high. Union Banka had initially a high exposure to clients, but with a decreasing tendency towards

¹⁹³ Interview with Mr Ivan David, liquidator of AB-Banka, (16 April 1998).

¹⁹⁴ The Capital City of Prague is a special budgetary organisation, constituted by The Capital City of Prague Act No.131/2000 Coll. The stake of the Capital City of Prague in 2000 was 73.4%. See also Table A4-3-1.

the end of the period discussed. The bank was established in 1992 by a number of large industrial companies and in 1996 it became a 75% subsidiary of the Union Group which is engaged in all major activities of the financial market. The bank has entered into credit and deposit relationships with other Group companies, shareholders of the Union Group, and minority shareholders of the Bank and with their affiliates. In 1999 the bank granted uncollateralised loans of 37% of the total gross loans to related parties.¹⁹⁵ The recovery of these loans is expected to be repaid in connection with the contribution of a strategic investor in the Union Group. Expandia Banka, involved in direct banking and commerce, is one of the latest entries into the Czech banking market and its success remains to be seen. There was no high exposure to clients on the part of the two majority state-owned NEBs, that is the Ceskomoravska Zarucni a Rozvojova Banka (established in 1992) and Ceska Exportni Banka (est. in 1995). Initially, loans to the non-financial sector were several times less than that of the existing NEBs and the amount loaned increased only gradually.

The available data on the share of foreign currency denominated loans and related party lending to total client loans granted is for 1995 and 1996 and is shown in Table 4-3-6.

Table 4-3-6: Foreign Currency Denominated Loans and Related Party Lending

	<i>Foreign currency denominated loans to total client loans in %</i>		<i>Related party lending to total client loans in %</i>	
	1995	1996	1995	1996
	Large banks			
Ceska Sporitelna	4.5	6.6		
CSOB ¹	88.3	84.2	0.5	0.0
Komerčni Banka	20.8	28.2	1.2	1.3
Investiční a Poštovní Banka	13.8	14.6		5.1
	Small and medium size banks			
GE Capital Bank	18.9	15.1		
Interbanka		40.4	4.3	8.7
Pragobanka ²	3.1	1.5	13.0	42.6
Union Banka		5.6		20.0
Universal Banka		11.5		
	Foreign bank			
Vereinsbank	67.9	79.7		

Source: Annual Reports; ¹ A high share of foreign currency loans in CSOB are typical for the bank's business as foreign trade banking; ² Provisions and adjustments for bad loans were taken as proxy as there are no published data on related party lending.

¹⁹⁵ Annual Report 1999, p.17.

It appears that loans to shareholders were highest among NEBs compared with SOBs and foreign banks. One can also observe that, compared to 1995, credits to related companies increased in 1996. The available data for 1995 and 1996 for two small and medium size banks, namely Interbanka and Pragobanka indicate that related party lending to total client loans in 1996 increased by 100% and 230%, respectively. This is likely to do with the tunnelling of funds into own companies. Thus, there is strong evidence to support the assertion that NEBs were established to provide loans for own enterprises.

The data on foreign currency loans is aggregate, and does not distinguish the amount of foreign currency loans granted by domestic banks or foreign banks (Table A3-4c).¹⁹⁶ Nevertheless, it can be observed that foreign currency denominated loans were highest among foreign banks, but low amongst NEBs (Table 4-3-6). While foreign currency denominated loans to total client loans in 1996 as opposed to 1995 increased in SOBs and foreign banks, it declined in NEBs. The high share of foreign currency denominated loans of Interbanka in 1996, that is, the year before it was rescued by an FSPs, was not due to lending to enterprises but due to transfers to its own accounts abroad.¹⁹⁷ The low share of foreign currency denominated loans among NEBs implies the provision of funds not to foreign owned companies or blue chip companies but loans to domestic enterprises. This in turn may imply a high risk loan portfolio.

Besides moral hazard by owners, two pieces of evidence coming from the survey respondents indicate moral hazard behaviour on part of managerial staff in this study. One is high management turnover. In the case of Agrobanka, for instance, 25%

¹⁹⁶ As regards foreign currency denominated credits in the Czech Republic it can be observed that in 1993-2000 foreign currency denominated credits show an increasing trend upward through 1998, while starting to decrease from then onwards (Table A3-4c). In 1993-1995 the growth rates of credits in foreign currency was increasing, but shows a gradual decline since 1996, except in 1997. A low level of foreign currency credits in 1996-2000 may have been partly induced by a decline in FDIs. An increase in 1997 may have followed from the high demand for foreign currency during the Czech financial sector crisis in May 1997.

¹⁹⁷ Interview with V. Prokes, Senior Manager at Interbanka,(7 April 1998).

of its employees were changing to another institution within a year.¹⁹⁸ A second is moral hazard at branch level. Respondents claimed that bad loans at branch level were mainly resulting from the very close relationship between locally based managers and borrowers. Furthermore, in contrast to big banks, in NEBs training programmes were perceived as a low-priority function by senior managements.¹⁹⁹ This implies that insufficient loan management skills were simply tolerated. Due to the low priority given to training by small banks there was neither proper documentation nor proper organisation.²⁰⁰ The main difficulty of AB-Banka's liquidators was to find any documents which prove that thorough credit analyses of the loan applicant were conducted or to find any documents stipulating the terms of redemption of the loans granted.²⁰¹ To prove credit transactions the liquidators had no alternative but to arrange meetings between the bank's managers and its creditors.²⁰² In the case of Interbanka restrictions were imposed on those activities where the supervisors suspected fraud.²⁰³

To avoid moral hazard by loan officers a number of internal measures were taken by banks in this study which may indicate prudent lending towards the end of the period studied: one was to make promotions dependent upon the quality of loans granted by loan officers, i.e. the share of bad loans resulting.²⁰⁴ A second was to reward successful loan officers with a bonus.²⁰⁵ A third procedure was to centralise the approval and the administration of loans temporarily at the headquarters in order to reduce moral hazard at branch level.²⁰⁶ In order to avoid moral hazard by shareholders, banks also took internal measures such as approval of any loan application by shareholders at the general meeting. Also the CNB requires from the

¹⁹⁸ Interview with Dr Slavoj Czesany, Adviser to the President and CEO at the Agrobanka (9 April 1998).

¹⁹⁹ see Section 3.3 (Question 13).

²⁰⁰ Interview with Ivan David, liquidator of AB-Banka (16 April 1998).

²⁰¹ Interview with Ivan David, liquidator of AB-Banka (16 April 1998).

²⁰² Interview with Mr Ivan David, liquidator of AB-Banka (16 April 1998).

²⁰³ Interview with V. Prokes, Senior Manager at Interbanka (7 April 1998).

²⁰⁴ Interview with Ing. Pavel Hrubes, Credit Portfolio Risk Management, CMHB (9 April 1998).

²⁰⁵ Interview with Alois Sklanar, Personnel Manager, CMHB (9 April 1998).

²⁰⁶ Interview with Alois Sklanar, Personnel Manager, CMHB (9 April 1998).

private sector banks a report on the purpose of granting loans to shareholders, particularly from those banks with a history of cases of shareholders becoming borrowers.²⁰⁷ The CNB then decides whether to approve the planned transaction to the stakeholders.

4.3.3 Summary

Overall, principal-agent problems in NEBs seem to be severe compared to those in SOBs. Several bank failures among NEBs soon after their entry into the financial market makes the above assertion self-evident. The ownership structure of most NEBs in this study was concentrated. This was mainly the result of the low capital requirements for setting up a bank. Therefore, the low capital at stake and lack of banking experience on the part of owners, which - considering that large banks were carved out from the monobanking system - was relatively more severe than in big banks, brought a conflict of interest. The evidence provided by the analysis of the financial data as well as survey results suggests that both failed banks and existing NEBs were providing funds for a small number of borrowers, in particular their founders. The limited liability of bank owners may have eased the conduct of transfers of funds to own enterprises. High exposure to privately owned enterprises in a particular sector appeared to make the NEBs particularly prone to failure. While in some banks concentrated ownership were causing principal-agent problems, in some other banks, the lack of transparent ownership structures particularly in medium-size banks was also likely to cause conflict of interest.

²⁰⁷ Interviews with bankers at CMHB.

4.4 Corporate Governance in the Foreign banks

4.4.1 Shareholder and Depositor Protection

Overall, in 1991-99 the debt to equity ratio in foreign banks, as opposed to SOBs, shows an increasing trend, i.e. the financial indebtedness of foreign banks gradually increased (Table 4-4-1).

Table 4-4-1: Solvency of the Foreign Banks and Privatised Banks Studied

<i>Debt to Equity Ratio</i>	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bank Austria			3.13	3.99	7.20	9.08	12.65		
Bank Austria Creditanstalt	4.39	9.85	14.28	11.41	22.09	15.97	18.56	12.79	14.28
Banka Hana							-47.50	19.45	
BNP-Dresdner Bank			8.92	11.89	7.01	8.33	11.74	19.77	28.30
Citibank		14.00	12.45	25.69	15.22	12.54	10.12	8.62	8.48
Credit Lyonnais Bank		2.25	11.12	21.39	17.33	15.09	39.98	27.23	20.89
Erste Bank Sparkasse			8.34	15.67	19.29	25.96	19.47	25.33	28.01
GE Capital Bank								7.26	7.38
Hypo-Bank			6.78	5.10	6.61	10.01	14.12	17.04	
Hypovereinsbank					8.80	17.18	6.52	6.66	8.36
Interbanka							5.34	11.79	9.17
Raiffeisenbank akciová společnost				9.47	13.79	24.21	17.89	22.54	24.61
Societe Generale				9.91	16.91	16.62	12.61		
Zivnostenska banka		11.23	11.94	12.28	13.65	12.31	13.64	13.33	14.33
Mean	4.39	9.33	9.62	12.68	13.44	15.21	10.39	15.98	16.38

<i>Equity to Debt Ratio</i>	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bank Austria			0.32	0.25	0.14	0.11	0.08		
Bank Austria Creditanstalt	0.23	0.10	0.07	0.09	0.05	0.06	0.05	0.08	0.07
Banka Hana							-0.02	0.05	
BNP-Dresdner Bank			0.11	0.08	0.14	0.12	0.09	0.05	0.04
Hypo-Bank			0.15	0.20	0.15	0.10	0.07	0.06	
Citibank		0.07	0.08	0.04	0.07	0.08	0.10	0.12	0.12
Credit Lyonnais Bank		0.44	0.09	0.05	0.06	0.07	0.03	0.04	0.05
Erste Bank Sparkasse			0.12	0.06	0.05	0.04	0.05	0.04	0.04
GE Capital Bank								0.14	0.14
Hypovereinsbank					0.11	0.06	0.15	0.15	0.12
Interbanka							0.19	0.08	0.11
Raiffeisenbank akciová společnost				0.11	0.07	0.04	0.06	0.04	0.04
Societe Generale, pobočka				0.10	0.06	0.06	0.08		
Zivnostenska banka		0.09	0.08	0.08	0.07	0.08	0.07	0.07	0.07
Mean	0.23	0.18	0.13	0.11	0.09	0.07	0.08	0.08	0.08

Source: BankScope. Own Calculations. Note: (1) Financial indebtedness; (2) Financial independence.

This may have followed from a yearly increase in total deposits of over 100% since their entry into the Czech banking market, despite a secondary interest in providing retail banking services. In April 1993 only 2.5% of the savers kept their savings in a

foreign bank.²⁰⁸ Starting with a county-wide branch network on market entry was not what the foreign banks interviewed preferred, in as much as there was a low rate of savings in the country and the retail operation was generally complex. In particular, there was a shortage of skilled staff. Because retail banking remains a domain for the big banks it is plausible to assume that an increase in deposits was mainly due to foreign enterprises and privatised companies. Data on the share of deposits kept at foreign banks are not available. Nevertheless the available data on the Komerčni Banka show that foreign companies were likely to deposit less in SOBs (Table 4-4-2).

Table 4-4-2: Loans and Deposits in Komerčni Banka 1995-1996

	1995		1996		
	%	Loans	Deposits	Loans	Deposits
Foreign owned companies	1.9	4	2.1	3.1	
SOE	21.4	22.3	18.7	25.7	
Private sector	75.2	35.4	78.2	46.6	
Total	100	100	100	100	

Source: Annual Report.

The increase in the intensity of competition with the entry of foreign banks was repeatedly confirmed in the interviews with banks. Competition with foreign banks was fierce, not for services to retail customers but mainly for the top customer segment with monopoly status in the market or firms with foreign participation. Nevertheless, during the secondary banking crisis in 1996 and 1997, it was foreign banks together with SOBs which were still attracting deposits. In 1997 total deposits in NEBs were only 52% of the deposits held in 1996, a decline of 48%. However, in SOBs and foreign banks, respectively, deposits in 1997 made up 86% and 98% of deposits held in preceding year, showing a decline of only 14% and 2%. Overall, one could reasonably conclude that increasing debt contracts in foreign banks during the period studied may have induced increased moral hazard in foreign banks. This assumption seems, however, to be weakened by looking at the development of the inverse of the debt to equity ratio (Table 4-4-1).

In contrast to SOBs the financial independence (equity to debt ratio) of foreign banks seems to decline over the years 1991 to 1999. While shareholder protection in

²⁰⁸ According to a survey by Kern, H. (1994).

1991-1995 was almost twice as high as that of SOBs, in 1997-99 the average ratio was always lower than that of SOBs, but it was higher during this period if the ratio of CSOB, a relatively profitable bank, was excluded from the average ratio of the big banks. Hence, it may be concluded that shareholder control remained always higher in foreign banks than that of SOBs in 1991-99, apart from 1996, making it likely that foreign bank managers had comparatively lower moral hazard incentives than managers in SOBs.

In 1996 and 1997 average equity growth in foreign banks showed a 68% and 13% decline compared with 1995 and 1996, respectively (Table A4-4-1). The overall decline of financial independence probably resulted from the CNB's decision to stop granting permission to foreign banks to establish subsidiaries and branches. Furthermore, the acquisition of ailing banks entailed a risk of undisclosed bad assets, given the weak accounting and reporting standards²⁰⁹ and high restructuring expenses. Similarly, in 1999 average growth in equity was 60% less than the 1998 figures. The equity growth of 75% in 1998 vis-à-vis 1997 may have followed from the foreign acquisition of equity stakes in ailing domestic banks such as Interbanka²¹⁰ and Agrobanka.²¹¹

The overall results, notably a decline in the equity to debt ratio, probably also reflects a consequence of the erosion of foreign banks' potential foreign client base. In fact, the Czech Republic had witnessed a fall in foreign investment from \$2.6 bn in 1995 to \$1.2 bn in 1996.²¹² The drop was mainly due to the decline of investment from Western Europe and the US in the privatisation programme of the Czech Republic.²¹³ FDI in the Czech Republic increased from \$1.3 bn in 1997 to \$2.5 bn in 1998 and dropped to \$1.3 bn in the first half of 1999.

²⁰⁹ See for details on Accounting and Reporting Standards Appendix A1-1.

²¹⁰ Acquired by Bayerische Landesbank (BL).

²¹¹ Acquired by GE Capital Bank

²¹² in "*International Market*," based on data released by the United Nations Conference on Trade and Development in April 1997.

²¹³ in "*International Market*," based on data released by the United Nations Conference on Trade and Development in April 1997.

An alternative explanation of the decreasing equity to debt ratio could be the law restricting banks' acquisition of stakes in non-banks. This law was designed specifically to control the emerging partnerships between banks and industrial companies. It basically requires the endorsement of the CNB if a bank is interested in acquiring ownership rights in a company. Because of the Government's preference for not involving foreign investors in the economy the law discriminated particularly against foreign banks.²¹⁴ Decreasing ratios of financial independence since 1998 could also be due to the amendment of February 1998, which stipulated that the central bank is empowered to nominate its own management to a bank in financial distress. The limited authority of stakeholders to pursue own strategies according to the foreign banks interviewed, was making foreign investors reluctant to pursue equity investments in the country.

4.4.2 Reasons behind foreign bank entry in the Czech Republic

In 1997 and 1998 the core domestic institutions in the Czech banking market had a market share of 65.67% and 68.04 %, respectively. During the same period nearly 22.28 % and 21.35% of the real asset and credit market was captured by foreign banks (Table 4-4-3). In 1997 overall foreign banks had a market share of credits (deposits) of 11.6% (8.9%) and in 1998 the share of foreign banks was 13.2% (11.6%) within a market which was stable and not growing.²¹⁵ Foreign banks' share in the securities business was 5.7% and 9% in 1997 and 1998, respectively.²¹⁶ At the end of 1999 the share of foreign banks in the total assets of the banking sector increased to 27.2%, 9.2 points higher than at the end of 1995.²¹⁷

²¹⁴ Author's interviews with bankers in April 1998.

²¹⁵ CNB Survey of Banking Regulation for 1998. Generally, foreign banks are gaining their market share from the lowering share of the big SOBs which are currently in a privatisation process. However, because the act of privatisation can move a domestic bank into the sector of foreign banks by making the latter the majority owner, the growing market share of foreign banks needs to be evaluated with care.

²¹⁶ CNB Survey of Banking Regulation for 1998.

²¹⁷ CNB 1999.

Table 4-4-3: Share of Banks in Total Assets (%)

	1993	1994	1995	1996	1997	1998
Large banks	82.3	77.18	71.72	68.87	65.67	68.04
Small banks	8.9	4.44	4.92	5.21	4.72	3.52
Foreign banks incl.	7.2	11.67	16.46	18.84	22.28	21.35
Specialized banks		1.47	2.11	3.09	4.29	4.04
Banks under forced administration		5.24	4.78	4	3.04	3.03

Source: CNB in Matousek (1998, p. 28)

Table A4-4-2 shows that foreign banks entered the country mostly from Germany and other neighbouring states. There was a rapid entry by Austrian and German banks whereas late entrants such as Japanese and English banks acted as observers.²¹⁸ This may suggest that significant trade between the Czech Republic and Germany and Austria as well as the presence in the Czech Republic of production units of these countries were the main reasons for the entry of these intermediaries into the Czech market. Additional evidence for this assertion comes from the interviews. All interviewed foreign bank managers claimed that the purpose of their entry into the market was twofold. Firstly, foreign banks followed companies from their home countries to provide them with loans. Secondly, foreign banks' interest was to utilise business opportunities originating in the new markets (Table 4-4-4).

Table 4-4-4: Pulling Factors for Foreign Banks

Bank name	Country	A decision to set up a subsidiary came from the headquarters of the bank
Erste Bank Sparkassen	Austria	to extended its market of operations, to provide financial services to the customers it followed and to acquire stakes in domestic enterprises.
Raiffeisenbank	Austria	to utilize new business opportunities and to offer banking services in a market where these services were underdeveloped
Wüstenrot (building society)	Germany	to secure its presence on the East European financial market
BNP-Dresdner Bank	France & German	to capture markets and business opportunities
Midland Bank	UK	to extend Midland's already considerable international presence; to provide wholesale banking services, including corporate banking, trade, treasury and capital markets services, to large local businesses, domestic banks and multinational corporations, i.e. top tier companies

Source: Interviews.

²¹⁸ One of the latest newcomers to the Czech banking market was Midland Bank, which opened for business in May 1997 as the first UK commercial bank branch in Prague.

These findings on pulling factors for foreign banks are consistent with the findings of Kern.²¹⁹ In his study Kern compared the relationship between Foreign Direct Investment (FDI) and the presence of foreign banks in the Czech Republic. His findings are in conformity with the conclusions drawn in the present study: banks followed their customers, particularly those from neighbouring countries.²²⁰ Foreign bank managers in the present study also claimed that the sole factor in granting loans was to establish a market share; in contrast to SOBs, helping to rebuild the country ranked very low as a reason for granting loans. This implies that the Czech economy has probably benefited more from factors other than the expectation that foreign banks would help to overcome the difficulties associated with the transition.

4.4.3 Quality of Banking Policy in Foreign Banks

The above analysis has provided evidence that foreign banks were more cautious concerning longer-term investments than short-term investments²²¹ (subsection 3.4), and that in particular providing long-term finance to domestic enterprises was not preferred (subsection 4.4.2). The extent of foreign currency denominated loans could additionally give some indication of the quality of lending policies in foreign banks. The available data for only one foreign bank, namely Vereinsbank in 1995 and 1996, indicate that 67.9% and 79.7% of total credits, respectively, were denominated in foreign currency (Table 4-3-6). Furthermore, the advantage of the significant interest rate differential which prevailed between the Czech currency and foreign currency gives a rationale to believe that foreign currency denominated loans were mainly

²¹⁹ Kern, H. (1994).

²²⁰ Kern, Holger (1994, p. 82).

²²¹ This was repeatedly confirmed during the interviews. Only in one case, namely the Hypo-Bank, is providing loans with a maturity of 15 years gradually becoming part of its business strategy.

granted by foreign banks. In addition, while foreign banks had access to funds on favourable terms from their headquarters, the deterioration of the rating of the country made it difficult for domestic banks to access funds from foreign capital markets. The data on Ceska Sporitelna show that 4.5%, 6.6% and 8.7% of total credits in 1995, 1996 and 1997, respectively, were denominated in foreign currency (Table 4-3-6). This implies that SOBs, apart from the foreign trade bank CSOB, were possibly granting a meagre share of their loans in foreign currency.²²²

4.4.4 Assessing Corporate Governance in Foreign Banks

Overall, the evidence provided indicates that banking management in foreign banks is relatively better than domestic banks because of the presence of qualified staff and organisational and technological advances. This suggests that principal-agent problems and moral hazard in foreign banks are unlikely to be as severe as in domestic banks. Although foreign banks increased their holdings of debt contracts and decreased their equity base, principal-agent problems were unlikely to be increased, because the increases in debt contracts and decrease of the factors which had led to a reduction of equity investments were likely to do with transition-specific factors and were not necessarily organisational. Providing banking services to foreign owned enterprises and a high share of foreign currency denominated loans indicate that foreign banks have been pursuing prudent lending policies thereby being comparatively better shielded from the risks associated with a transitional environment than domestic banks. Furthermore, only a few foreign banks in this study claimed to have an interest in retail banking, given the costs associated with establishing retail banking networks. The absence of extensive branch networks, and thus accountability at branch level, additionally suggest that foreign banks are less encumbered with principal-agent problems.

²²² This is in conformity with the findings in this study that foreign banks were likely to provide a high share of foreign currency denominated loans.

Nevertheless, the deficiencies in the legal system and lack of clarity of the law in the early stages of the transition give a reason to assume that managers may have been tempted to pursue risky business lending policies or to incur moral hazard, thereby exacerbating principal-agent problems. According to the foreign bank managers interviewed, business opportunities were especially attractive because of the unorganised nature of a transitional environment compared with the developed parts of the world.²²³

Despite the availability of expert knowledge to exploit such opportunities in the market, corporate governance problems in foreign banks, particularly during the initial stages of the transition, were not entirely absent. High management turnover may shed light on the possible weaknesses in banking management in foreign banks. Because of the high salaries of foreign personnel, the long-term strategy of all foreign banks studied was to keep the numbers of foreign employees limited and confined to the board of directors, employing mainly Czech nationals especially in sections with low value transactions and the provision of retail banking services. Therefore, comprehensive training measures were adopted with a high wage bill for foreign coaches. Hypobank's started with 15-17 foreign personnel who trained 15 Czech employees. For 3-4 years foreign personnel in all lower and middle management positions were coaching domestic personnel. Erstesparkasse was recruiting over 90% of its employees locally. However, foreign banks turned out to be training institutions for domestic banks. The foreign banks interviewed repeatedly confirmed that management turnover was particularly high until 1996. Training in a foreign bank enabled staff to acquire both practical experience from international experts and to attain local banking experience. Because of the lack of trained staff, domestic banks

²²³ In the words of Nick Teller, General Manager at Commerzbank, *"I am doing business here as if I am walking through a minefield, just have to make sure you do not step on them, you have your own machine to check where they are, if you take your eye off the machine just once and are not totally clear what you are doing you will step on one of them."* Interview with Nick Teller, General Manager at Commerzbank, (8 April 1998).

were constantly offering trained staff employed in foreign banks better career opportunities with higher salaries.²²⁴

To improve the quality of corporate governance and to reduce the extent of principal-agent problems foreign banks in the survey were taking certain measures. Firstly, during the early stages of entry into the Czech financial market foreign banks managed to avoid the risk of being embroiled in connections with politicians and thus corruption in the medium-term by refraining from employing local management.²²⁵ The foreign banks studied employed mainly foreign personnel in the upper level of management, in particular the board of directors and the supervisory board, whereas the lower levels - partly due to high wages²²⁶ and the language problems associated with foreign staff - were staffed by domestic recruits. In 1998 Hypobank was employing 350 staff, 20 of whom were from Germany. Hypobank's risk control committee was occupied entirely by German staff, and the bank's long term strategy was to keep these positions occupied by foreign staff, particularly because credit officers required 15-20 years experience in banking. Secondly, to avoid speculative businesses, besides employing experts in risk assessment and availing themselves of the latest risk assessment techniques, foreign banks paid particular attention to establishing a properly organised credit process. Thirdly, the prudence of foreign subsidiaries was additionally guaranteed by the supervision of their own headquarters. For instance, the headquarters of Hypo-Bank, namely Bayerische Hypotheken- und Wechsel-Bank AG, was sending its own auditors, at most twice a year, to check its subsidiary's adherence to the German banking guidelines. Fourthly, given the risk associated with a transitional environment, headquarters were allowing their subsidiaries to grant loans only to selected borrowers who were considered to be viable. In order to control for prudent lending and to reduce the risk of incurring high amounts of bad loans, foreign banks had only restricted access to funds from

²²⁴ There were in the words of Pavel Trcka, "hunters" who were, "just stealing personnel from banks" resulting in significant personnel influx from foreign banks to domestic banks.

²²⁵ Interview with Nick Teller, General Manager at Commerzbank, (8 April 1998).

²²⁶ Foreign experts employed at the CSOB to train domestic staff earned 10-15 times more than the domestic staff. Interviews with bankers at CSOB, (14 April 1998).

headquarters. Hypobank CZ, for instance, has a limited capital base: the subsidiary is forced to operate within certain debt/equity ratios and to remain within tight lending limits.²²⁷ Interbanka can access funding from its headquarters at a low interest rate up to a certain credit line.²²⁸ Finally, but not least, in order to protect headquarters from a risky transitional environment, preference was given to establish subsidiaries rather than branches. Subsidiaries are legally independent from their parent companies and thus are forced to back their activities by their own capital. This, however, is disadvantageous in as much as subsidiaries are restricted in the amount they provide to large enterprises.²²⁹

4.5 Corporate Governance in Privatized Domestic Banks

Since 1996 the CNB ceased chartering foreign banks to establish subsidiaries or branches but gave preference to foreign banks entering the domestic market via the acquisition of one of the ailing banks. Several international banks interested in entering the Czech banking market had no alternative but enter it by acquiring an ailing domestic bank in distress. The General Electric Co. (acquiring Agrobanka), Bayerische Landesbank (acquiring Interbanka) and Belgian Credit Bank (acquiring Banka Hana), were among the first entries by this method. As one could observe, the success of the Government's strategy was confined only to some small- or medium size banks partly due to the ease of revealing bad assets. The lack of clarity concerning the true amount of bad loans in big banks' portfolios and connections to unprofitable debtor enterprises coming with the intermingled ownership structures with IPFs made the privatisation of these banks to an FSP less attractive.²³⁰

²²⁷ Interviews with bankers April 1998.

²²⁸ Interview with V. Prokes, Senior Manager at Interbanka, (7 April 1998). Interbanka, a small domestic bank in failure, was acquired by the German Bayerische Landesbank (BL).

²²⁹ Hypobank, for instance, provides funds to small size enterprises but has limited funds to supply large customers such as Volkswagen or Siemens. Interviews with bankers in April 1998.

²³⁰ Banks with a good track record were easily privatized as was the case in 1992 of the Zivnostenska Banka, the biggest bank in Czechoslovakia, established in 1868. The bank did not play a significant role during the Communist regime and specialized in foreign payments by individuals which saved the bank from incurring bad loans. The bank restarted its business after 1989 and its operations focus on corporate banking only.

The strategy of restricting foreign bank entry to the acquisition of ailing banks was expected to aid the restructuring of ailing banks at the expense of foreign investors and to bring in 'know-how' and improvement in the quality of corporate governance; this section examines how far this expectation was fulfilled.

4.5.1 Profitability of Privatized Domestic Banks

Table 4-5-1 shows the ROAA and ROAE of banks which are either entirely or majority foreign owned. The ROAA and ROAE show a gradual improvement of profitability since the entry of foreign investors. This is despite the facts that the FSPs only entered at the financially distressed stage of a domestic bank, and that there was a requirement to recapitalize and cover each year the losses from the preceding periods. ROAA in GE Capital Bank in 1998 was -15.5% and improved by 17.5% in 1999. In 1998 ROAE in Interbanka improved by 116.7% from a negative of -116.4% in 1997.

Table 4-5-1: ROAA % and ROAE % of Privatised Domestic Banks

ROAA %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CSOB	1.4	1.6	0.05	-6.66	1.4	1.6	1.6	1.2	1.3	1.1
<i>Change</i>		<i>0.1</i>	<i>-1.5</i>	<i>-6.71</i>	<i>8.0</i>	<i>0.2</i>	<i>0.1</i>	<i>-0.5</i>	<i>0.2</i>	<i>-0.2</i>
IPB		0.7	0.4	0.3	0.5	0.6	0.4	-5.0	0.2	
<i>Change</i>			<i>-0.2</i>	<i>-0.1</i>	<i>0.2</i>	<i>0.1</i>	<i>-0.2</i>	<i>-5.4</i>	<i>5.2</i>	
Zivnostenska banka	0.2	-1.1	1.0	2.1	1.5	1.4	1.2	1.0	0.3	-0.5
<i>Change</i>		<i>-1.3</i>	<i>2.1</i>	<i>1.1</i>	<i>-0.5</i>	<i>-0.2</i>	<i>-0.2</i>	<i>-0.2</i>	<i>-0.7</i>	<i>-0.9</i>
Banka Hana						-3.3	-5.1	-9.8	-5.1	
<i>Change</i>							<i>-1.8</i>	<i>-4.7</i>	<i>4.8</i>	
GE Capital Bank	0.2	3.8	0.8	-4.5	0.3	0.6	-15.6		-15.5	2.0
<i>Change</i>		<i>3.6</i>	<i>-3.1</i>	<i>-5.2</i>	<i>4.8</i>	<i>0.2</i>	<i>-16.1</i>		<i>0.02</i>	<i>17.5</i>
Interbanka		-2.2	0.049	0.005	-4.7	-9.6	-20.3	-7.3	0.0	0.1
<i>Change</i>			<i>2.3</i>	<i>0.0</i>	<i>-4.7</i>	<i>-4.9</i>	<i>-10.7</i>	<i>13.0</i>	<i>7.3</i>	<i>0.03</i>

ROAE %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CSOB	25.8	34.0	0.6	-79.2	17.0	18.8	18.4	12.2	12.3	9.8
Change		8.2	-33.4	-79.8	96.2	1.8	-0.3	-6.3	0.2	-2.5
IPB		16.6	9.5	6.6	8.1	8.8	5.8	-88.8	4.3	
Change			-7.2	-2.8	1.4	0.7	-3.0	-94.5	93.0	
Zivnostenska banka	6.2	-27.0	12.6	26.8	21.6	20.5	17.5	14.5	5.0	-8.3
Change		-33.2	39.6	14.2	-5.2	-1.0	-3.0	-3.0	-9.5	-13.3
Banka Hana						-54.5	-142.9	Return: \$-56,895th Equity: \$-11,548th	-400.0	
Change							-88.3		-257.1	
GE Capital Bank	2.9	57.3	16.3	-511.8	37.5	13.3				17.2
Change		54.4	-41.0	-528.2	549.3	-24.2				3.9
Interbanka		-4.8	0.8	0.1	-50.4	-165.7		-116.4	0.3	0.6
Change			5.7	-0.8	-50.5	-115.3		49.3	116.7	0.3

Source: BankScope; own calculations. *Highlighted figures indicate year of entry of the FSP

Liquidity ratios can be taken as a further proxy for any improvement in the quality of corporate governance in a bank with a strategic partner. On the whole one can conclude that liquidity improved with the entry of a foreign investor. Deposits made up a lesser portion of total loans (Table 4-5-2).

Table 4-5-2: Total Loans to Deposits % at Foreign Banks and Privatised Banks

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean
Bank Austria				44.3	56.7	48.1	50.0	52.7			50.3
Bank Austria Creditanstalt		93.8	72.6	57.0	59.1	31.7	51.0	45.3	56.6	52.2	57.7
Banka Hana								42.1	20.0		31.1
BNP-Dresdner Bank				13.9	19.7	29.0	40.9	44.7	45.1	36.9	32.9
Citibank			62.7	74.5	68.9	51.5	50.3	60.2	71.8	54.4	61.8
Credit Lyonnais Bank			2.6	18.9	37.4	44.0	107.6	47.2	54.3	49.1	45.1
CSOB										56.5	56.5
Erste Bank Sparkasse				53.3	51.2	34.0	31.0	41.3	53.6	58.5	46.1
GE Capital Bank									11.4	5.1	8.3
Hypo-Bank				32.4	33.3	33.6	36.4	41.2	44.4		36.9
Hypovereinsbank						54.0	32.5	43.4	51.9	62.7	48.9
Interbanka								55.2	37.2	51.1	47.8
Raiffeisenbank akciová společnost					44.0	45.2	42.3	54.9	49.6	56.3	48.7
Societe Generale					40.5	55.4	43.3	60.0			49.8
Zivnostenska banka			20.0	31.1	26.4	55.0	34.1	26.2	23.1	30.0	30.7

Source: BankScope 2000; own calculations. The ratios for the other categories of banks are shown in Table A 4-5-1.

The ratio of provisions to total loans reduced in the case of Interbanka, Zivnostenska Banka and GE Capital Bank (Table 3-4-5). In the last case, a drastic increase in provisioning in 1999 may have followed from the high restructuring cost.

Calculating the ratios of financial indebtedness (ratio of debt to equity) shows that with the entry of an FSP the protection of depositors improved from double digit

to one digit ratios (GE Capital bank and Interbanka) and improved by around 45% on average in the case of Zivnostenska Banka (Table 4-4-1). These results may indicate an improvement in net earnings and lower financial risk. The average protection for shareholders, i.e. ratios of financial independence (ratio of equity to debt) improved by 550%, 400%, and 70% in case of GE Capital Bank, Interbanka, and Zivnostenska Banka, respectively. Among 14 foreign banks the average shareholder protection in GE Capital Bank and Interbanka are second and third best whereas among large banks the average shareholder protection in Zivnostenska Banka is second best after CSOB. Hence, one can safely conclude that the involvement of an FSP in an ailing domestic bank is associated with sustained improvement in the quality of corporate governance.

Given the recent nature of bank privatisation and the limitations of ratio analysis, the qualitative data collected enrich the assessment of the quality of corporate governance after the involvement of FSPs. Since 1992 among the main problems of **Agrobanka** have been principal-agent problems (Question 8k).²³¹ On the acquisition of the bank by an FSP, that is GE Capital Bank, measures were adopted to improve internal controls. New rules were created for the responsibilities at headquarters level as well as at branch level. The main causes for the **Interbanka's** failure were fraud and embezzlement (Question 8n and 8p). The first and foremost restructuring measure adopted by its FSP was the implementation of rules for the pursuit of prudent lending. Among the initial strategies of the FSP was also the application of write-offs for a fresh start.²³² A further step taken was reorganising the credit departments, implementing new rules of operation and conducting training and retraining of personnel. Within six months, as a result of these measures, the balance sheet of Interbanka increased by around 250% and the level of bad loans decreased. Among other advantages for **Zivnostenska Banka** from its FSP was the transfer of know-how by the appointment of foreign banking experts as directors of certain

²³¹ See Section 3.3

²³² Interview with V. Prokes, Senior Manager at Interbanka, (7 April 1998).

divisions who carried out an improvement of the bank's loan portfolio.²³³ The techniques applied by the experts to assess loan risks saved Zivnostenska Banka from incurring bad loans. Since the beginning of 1990, before the involvement of its FSP, **IPB** was investing a great deal of its clients' funds in risky investment banking activities. Fraud and embezzlement were also not absent (Question 8n and 8p). *Inter alia*, Nomura, its FSP, imposed firewalls between the bank's investment and commercial banking activities though this was not a requirement of the Czech banking law. However, Nomura did not enter the market with a long term interest and remained a portfolio investor with no seats on the management board.²³⁴ The order of the board of directors and the supervisory board was reversed at the first extraordinary shareholders' meeting after the finalisation of the privatisation deal with the FSP.²³⁵ Consequently, the supervisory board with 15 members, of which only two were representatives of Nomura, took over with the task of managing and controlling.²³⁶ The bank's solvency deteriorated rapidly and substantially, and after two years, in June 2000, IPB was put under forced administration.²³⁷

The interviews also revealed that information technology was one of the main problems of domestic banks: either due to lack of funds, anticipated privatisation or simply due to mistakes in selecting the most efficient and sophisticated system

²³³ The biggest stake was taken by BHF Bank, a German bank, an important stake by International Finance Corporation (the investment arm of the World Bank), and the rest was acquired by the Czech Investment Fund; even individual persons were able to acquire ownership rights through voucher privatisation. Recently the bank became fully privatised after the state sold the remaining small stake of 3%. Since January 1998 Zivnostenska Banka has a new shareholder as BHF Bank sold its stake to Bankgesellschaft Berlin.

²³⁴ See also "Counting on Recovery Czechs Sell Stake in Bank to Nomura." *International Herald Tribune*. 23.01.1998.

²³⁵ Note that while the Board of Directors represents the managers, shareholders are represented by the Supervisory Board.

²³⁶ Interview with Jiri Vranek, Bank Analyst at IPB, (7 April 1998).

²³⁷ As of 16 June 2000 the CNB issued an irrevocable guarantee for creditors of IPB. One reason for the bank's illiquidity was bad loans and diverted profits. When the conservatorship was imposed 28% of IPB's loans were classified as nonperforming. IPB reported a preliminary CZK 1 bn profit for 1999 but the bank's auditors required CZK 21 bn of extra provisions. In contrast, Nomura's shares at the Tokyo stock exchange reacted with a 6% price gain. This was because IPB's heavy involvement in the voucher privatisation programme as creditor to enterprises on the one hand and - through its investment funds - as investor, on the other. Loans granted to enterprises in which the bank had stakes were often not repaid and equity was taken instead. Thus while the bank's loan portfolio deteriorated, its ownership in potentially viable enterprises increased. On 19 June 2000 IPB was taken over by CSOB.

available.²³⁸ The FSPs of banks in this study were the last resort for the implementation of the latest and the most appropriate information technology thereby setting the basic standards for the future operations of the Czech banking sector. Foreign bank participation was also solving the training problems of domestic banks. Banks in this study could utilise the training facilities of their headquarters abroad or were enjoying internal training programmes.

4.5.2 Summary

The evidence provided suggests that in line with expectations foreign financial involvement in domestic banks enabled consolidation and expansion into other areas of financial services. It is fair to conclude that all of the banks with a foreign strategic partner studied, apart from IPB with its FSP Nomura, have mitigated principal-agent problems to a certain extent. This was mainly achieved by capital investments as well as organisational improvements. However, the quality of corporate control with privatisation to an FSP was not likely to improve in all cases. Foreign investors may not always be interested in restructuring and reorganising the bank acquired but solely interested in stripping attractive industrial assets held by an investment fund which the SOB controls. In the case of IPB and Nomura this was mainly indicated by a conflict of interest between the new FSP and management. Following from this two suggestions arise. Firstly, the incidence of IPB and Nomura underlines the importance of first privatising SOEs owned by SOBs. There was also evidence from the survey that because SOBs were usually rendered powerless by their liabilities, the privatisation of SOEs helped to improve profitability.²³⁹ Consequently, privatising SOEs before the involvement of an FSP would both avoid the risk of asset stripping

²³⁸ SOBs which solved the information technology problem early on realized soon that it was a mistake as in the case of Komerční Banka. The bank had already settled the information technology problem but later the bank realized that it was not the most efficient and sophisticated system available. The bank acquired the Kirchman system. Nevertheless, in some information technology areas the Komerční Banka is more sophisticated than the Česká spořitelna. Still, the Česká spořitelna's information technology for processing transactions related to consumer loans, where it has a strong position, is better than Komerční Banka's new information technology (Interview with Hana Urbanová, Komerční Banka on the 14 April 1998).

²³⁹ see Section 3.3 (Question 1).

and improve the market value of banks. Alternatively, if the privatisation of SOEs is not feasible, an FSP to a bank can be prevented by contractual provisions against disposing of viable production units. Secondly, already during the fieldwork in April 1998, thus almost two years before the bank's failure, there was some indication from the management of IPB that its FSP did not have a long-term interest in the bank and that this was recognised from its reluctance to make reasonable organisational improvements within the bank. The conflict of interest between the board of directors and supervisory board underlines the importance of introducing Company Acts and legal frameworks at an early date to clarify the functions of both institutions irrespective of whether a bank is privatised or kept under state ownership.

CHAPTER FIVE

CRITICAL EVALUATION OF THE RESTRUCTURING PROGRAMMES

5.1 Introduction

The empirical analysis in the preceding chapter sought to assess the quality of corporate governance among various categories of banking firms in the Czech financial sector during the period 1992-99. The quality of corporate governance in foreign banks was found to be better than that of the SOBs and the NEBs. The evidence further suggests that improved corporate governance and hence gradual change of banks' behaviour from passively accommodating the financing needs of loss-making enterprises towards a more market-type lending was achieved, besides being partly due to improved prudential regulation and supervision, after the privatisation of the banks.

The Czech financial sector reform, in particular the approach used for dealing with bad loans in large banks and insolvency in the newly established banks, may have introduced moral hazard into the system. This chapter provides a critical evaluation of those factors, in particular those related to the recovery approaches, which may have undermined the quality of corporate governance in the domestic banks. Its section two is divided into five subsections. Subsections one and two investigate the restructuring programmes with respect to moral hazard in large and small banks, respectively. Subsection three is confined to the potential for ratios in helping to assess the profitability of banks under restructuring programme when there are many institutional deficiencies. The fourth subsection is on the impact of the Bankruptcy Act, which made it difficult to foreclose collateral. The final subsection examines various aspects of foreign bank entry in order to assess whether foreign bank

entry at the initiation of a transition and the competitive pressure associated with it were beneficial for domestic banks with respect to improvements in operational efficiency and profitability. The focus of the section three is the effect of the bank restructuring attempts on the public budget and the extent of returns coming from the banking system which could be used to recover the costs. The final section sums up the chapter.

5.2 Impact of the Restructuring upon the Financial Sector

In the Czech Republic recapitalisation, the good bank/bad bank approach and Government bonds-loan swaps were first and foremost applied to banks carved out from the monobanking system. Inherited stock problems were solved by establishing a hospital bank, and the flow problem in the inheritors of the monobank system was solved either by recapitalisation or by permitting debt-equity swaps.

The solution to the financial distress in NEBs required the implementation of recovery programmes with the support of shareholders at the end of 1995. Some banks could be rescued with the support of shareholders or new investors. Failure to comply with these regulations led either to the revocation of licenses or the introduction of conservatorship following a reduction in capital. In 1996 when several small and medium size banks collapsed, the Government saved them by “buying” bad debts from their books and placing the debts with Ceska Financni.

5.2.1 Large Banks and Moral Hazard

The hospital bank approach²⁴⁰ enabled a timely transfer of non-performing loans to the Consolidation Bank (KOB). However, although recapitalisation allowed a gradual increase in bank lending (Table A3-4c), a great part of this new lending turned out to

²⁴⁰ See Appendix A 2-2-2-1b on various methods of solving non-performing loans.

have the flow-problem of non-performing loans, which were also taken over by the KOB. However, not all non-performing loans were transition induced. In part, the growth of bad loans in the portfolio of KOB after 1998 were due to SOB's exposures to Russia, due to which one fifth of Komerční Banka's loans had to be written off.²⁴¹ Similarly, Česká Sportovní's losses of CZK 7 bn (\$232 mn) in 1998 were mainly due to its Russian exposures of CZK 5 billion (\$168 mn) incurred through derivatives deals.²⁴²

Several factors can be identified which may have increased the moral hazard in SOBs.²⁴³ The first may be associated with the state ownership of banks. State ownership induced SOBs to function as agents of the Government which lasted until privatisation was found to be the ultimate solution for their survival. A second reason which may have increased moral hazard is that big Czech banks could easily gamble on the possibility of government bailouts and further increase their risk exposure due to the Bankruptcy Law of April 1993 exempting both SOE and SOBs from bankruptcy if more than 50% of their shares had yet to be privatised. A third reason is likely to do with SOBs' reliance on the KOB, since March 1991 when it had been set up. It appears that the hospital bank approach and bank recapitalisation were likely to be associated with increased moral hazard and a high risk exposure of SOBs. This may well be the result of recapitalizing banks without imposing prudential regulations and improving supervision in banks. When the newly formed commercial banks in TEs were carved out of the branch networks of the monobanks there were no simultaneous implementation of prudential regulations. Furthermore, no credible guarantees were given that the support was a one-off event. Instead, negative incentive signals were given that unsound lending policies would be tolerated. In fact, in face of the difficulty of distinguishing loans due to factors outside the control of management and moral

²⁴¹ "IPB sell-off still shaky despite initialing of Nomura-state agreement," *The Prague Post*, February 4, 1998.

²⁴² *Ibid.*

²⁴³ In contrast to these findings Matousek, R. (1999, p. 22) argues: "...although there was a peril of moral hazard we cannot trace any signs from the side of commercial banks in the Consolidation Programme I."

hazard problems, policymakers announced that they recognised that some of the bad loans were also due to banks' own lack of experience.²⁴⁴

A further factor which may have induced moral hazard in SOBs is that the hospital bank approach has possibly deprived SOBs of market discipline. The loans which were transferred to the KOB were selected on the basis of their terms, such as the interest rate, rather than on the creditworthiness and payment record of the borrowers. Because mainly selected enterprises were relieved of their debts it is plausible to assume that KOB approach is likely to deprive banks of the potential market discipline which would accompany the selecting of best practice banks by enterprises in as much as a transfer of debts to KOB is likely to be conducive to retaining the already established banking relationship with the recapitalised bank.²⁴⁵ This seems to hold true in particular for cases where there was lenience towards enterprises which were not necessarily eligible for restructuring or which had good future prospects but rather reflected the political interest in avoiding bankruptcies and mass redundancies on the part of the decisionmakers. Furthermore, enterprises were deprived of finance for investment through a stock issue, making them excessively dependent on bank loans, and therefore less selective in choosing among different banks. In addition, granting Government support via the KOB is likely to strengthen borrowers' confidence in the participating banks in as much as it signals that these banks are basically "too big to fail." In fact, the 'too big to fail' policy has been extended to big banks which are not even among the four largest and not state owned. During the process of restructuring the ailing banks under the Consolidation Programme II, the sixth largest bank in the Czech Republic, namely Agrobanka, was also rescued in 1996. As was the case with SOBs, the bank's historical non-performing loans, i.e. accumulated losses from 1993, were also covered. Banks can also be deprived of market discipline on the part of borrowers by lack of competitors

²⁴⁴ Noted by Ing. Pavel Kysilka, Csc. Vice-Governor of the CNB, "The costs of Transformation: Impact on the Banking Sector." Translated by Ing. Stanislava Janackova, CSc. the Institute of Economics, CNB.

²⁴⁵ In view of bank failures in the US during the seventies several corporations have introduced their own models to assess the viability of banks (Sinkey, J. F. 1979, p. 16).

or other external sources of funds. Their monopoly power over savings deposits and their being the sole suppliers of large amounts of credits, combined with the policy of the Government to confine full coverage deposit insurance solely to SOBs up to mid-1994, may have further promoted their risky lending and allowed resource misallocation to continue for a substantial amount of time.

There is neither decisive evidence for the direct involvement of banks in the restructuring of enterprises nor for active ownership involvement of banks' diverse state owners in the banks themselves. It appears that delays in legal and property reforms and different governmental agencies as owners of SOBs with differing interests continued to undermine the quality of corporate governance within banks. Big corporations remained state owned for a relatively long time and given that big banks were also state owned moral hazard problems were likely to occur. Weak corporate governance in these banks may have possibly given an opportunity for both 'connected' insiders as well as shareholders of state-owned banks to pursue their own interest and transfer funds without conducting a thorough borrower analysis or to pursue more cautious lending policies.

The flow of funds to SOEs and subsequent relief of banks by the KOB was likely to strengthen even further the Government's ownership stakes in both the banking system and the production sector. Big banks assumed the role of 'main bank', i.e. as main supplier of funds not only for enterprises but also for NEBs. In fact, several NEBs were established with borrowed funds from big banks (see the example of AB-Banka and Ceska Sporitelna in section 5.2.2). In cases of borrowers' failure big banks generally took equity in exchange for non-performing loans (debt-equity swaps).

5.2.2 Small Banks and Moral Hazard

(a) Difficulties in financing

On the whole, in response to the secondary banking crisis, the savings of households held in small banks, despite the presence of deposit insurance, flow out to a significant extent thereby undermining the success of the rescue measures. In order to attract depositors, NEBs in this study, particularly those with an unsuccessful past track record or high stake of bad loans, were forced to offer higher rates than the benchmark of 2-3% interest rate paid by Ceska Sporitelna for the current account deposits. While comprehensive data on the individual rates offered in different groups of banks are difficult to obtain, the available evidence of some banks in this study suggests that Interbanka (a small bank) in 1996 paid more than 70% higher deposit rates but could only charge 17% higher on credits than big banks on average (Table A 5-2-2a and Table A 5-2-2b). Yet, the bank's net interest margin was 17% lower than the average net interest rate margin of the big banks. In 1997 the bank was able to offer almost the same credit rate as a big bank while being able to offer 10% higher deposit rates than the average rate in big banks. The deposit rate in Interbanka was around 8% in 1998, i.e. almost 40% higher than the benchmark in Ceska Sporitelna. Besides higher deposit rates, the high stake of bad loans was also increasing the price of borrowing from the interbank market (see Table A 5-2-2c). Interbanka, was only able to obtain finances on the Czech interbank market at extremely high prices reaching as much as 17%.²⁴⁶ High borrowing rates in the interbank market for NEBs can be attributed to large and highly volatile debt equity ratios in NEBs, reducing the protection of lenders as evidenced in Chapter Four, section 4.3.1. On the asset side, however, besides being restricted to charging at least similar credit rates as big banks, the requirement to make provisions for bad loans was additionally restricting banks' investment alternatives. Given the difficulty of attracting borrowers at higher credit rates in a competitive banking environment, the NEBs banks interviewed saw no alternative to make a profit

²⁴⁶ Interview with V. Prokes, Senior Manager at Interbanka, (7 April 1998).

from funds borrowed at high rates but investing in risky products with a high probability of loss, thereby increasing the risk of failure even further. Consequently, one may safely conclude that the benefits of recovery programmes were likely to be cancelled out by the unfavourable terms both on the primary and interbank market offered to NEBs.

(b) Restructuring Measures and Moral Hazard Incentives

Within the bank restructuring programmes the CNB liquidated nine banks. Theoretically, allowing bank failures reduces the moral hazard incentives for the remaining banks. This condition, however, may not have been fully achieved given the belated implementation of bankruptcy proceedings and the unsystematic nature of the rescue approaches. In fact, liquidations were only allowed after a number of attempts to rescue the banks, while immediate liquidations were allowed in a few cases only. Three banks, namely Kreditni a Prumyslova Banka and AB Banka and Ceska Banka were liquidated in August 1995 and in December 1995, respectively (Table A2-2-4). Further liquidations were allowed in two cases, i.e. Prvni Slezska Banka and Kreditni Banka Plzen, in May 1996 and October 1996, respectively. The remaining banks out of 18 under the Consolidation Programme II were either liquidated or merged, but only after failed attempts to find a new investor or perform a merger of the bank with another bank. Besides creating moral hazard incentives for the remaining banks, this approach was most likely to create moral hazard also for banks under conservatorship. Being under the governance of the supervisory authorities, its attempts to find a strategic partner for the ailing banks possibly exacerbated principal-agent problems as it did not give the banks much incentive or encourage them to find solutions for their own banking problems.

The Stabilisation Programme²⁴⁷, in operation since the end of 1996, gave an opportunity to ailing small banks to transfer non-performing loans to the special

²⁴⁷ For further details on the Stabilisation Programme see section 2.2.4 in Chapter II.

institution Ceska Financni on condition of repayment after seven years. Participation in the Stabilisation Programme was tied to the requirement to meet the Stabilisation Programme's pre-set target ratios and to submit reorganisation plans. However, illiquid small banks joining the Stabilisation Programme continued to face the flow problem of bad debts and most banks who volunteered to join the Stabilisation Programme failed to meet the prescribed targets.²⁴⁸ The three banks which were rescued by either increasing initial capital by existing shareholders or by a new investor under the Consolidation Programme II eventually joined the Stabilisation Programme. However, the measures prescribed within the latter approach were unable to halt a deterioration of the banks' profitability, ultimately leading to a rescue of one bank by performing a merger but to the liquidation of the remaining two banks. Furthermore, none of the three banks which joined the Stabilisation Programme in 1997 could manage to maintain its present legal status but needed either to be liquidated (Pragobanka in October 1998) or needed to be merged with a merger partner to take over the bank and its deposits (Foresbank's merger with Union Banka at the beginning of 1999; at the time of writing Expandia banka was looking for an FSP).

One of the likely reasons for the failure of banks to come up to the prescribed terms of the Stabilisation Programme are moral hazard problems. Any bank in a liquidity crisis had the opportunity to use Ceska Financni as a dumping ground for non-performing loans unless a credible reorganisation plan was produced and consent given to attempt the targets of the programme. Although these proposals were discussed with the individual banks and assessed with respect to their contribution to improving the banks' profitability, management and shareholder base it is likely that informational advantages on the part of insiders gave rise to principal-agent problems between bank managers and supervisors. Deterioration of the banks' portfolios due to economic decline in 1998 and 1999 may have been significant. Nonetheless, the

²⁴⁸ Interview with Ludek Prochazka, Director of Banking in Bankruptcy and Liquidation at Consolidation Bank, (10 April 1998).

failure of the banks, despite being under CNB auspices, permits the assumption that the opportunity to join the Stabilisation Programme to stay afloat may have given insiders with informational advantages an incentive to design their own restructuring programmes, despite *a priori* knowledge of there being no prospects for a survival.

Expecting co-operation from shareholders by recapitalising their banks with own funds was unlikely to succeed. In fact, several precedents for rescue attempts by capital injections from CNB funds was likely to be associated with moral hazard on the part of owners not to fully recapitalise their banks with own funds as required. For instance, after Pragobanka's shareholders increased the bank's equity in 1997 and in January 1998, the bank was able to improve its liquidity by selling loans with a face value of CZK 4.2 bn to the Czeska Financni for a period of seven years at zero interest. Yet in October 1998 the bank's licence was revoked.

In addition, the recovery programmes were relying heavily on the supervisors' appraisal of the specific situation in each bank (i.e. the extent of its losses, its development prospects, the capacity of the managers to manage risk during the process of restructuring and the willingness of the bank's shareholders and management to participate in the recovery process) as well as the supervisor's judgement of the reorganisation plan and rescue concept developed by the bank itself.²⁴⁹ However, an accurate evaluation by the authorities is particularly questionable in the face of the supervisory and regulatory deficiencies which prevailed at that time. In fact, during the initial phases of the transition a lack of qualified supervisors was one of the main problems of the CNB. According to the interviewees supervision and control were effectively absent during the years 1989 to 1996. Moreover, the CNB did not possess any specialist personnel who had experience of turning unprofitable banks around. The liquidator of the AB-Banka, for instance, had no any banking experience.²⁵⁰ Staff were unfamiliar with the new developments in

²⁴⁹ "Report on Banking Supervision in the Czech Republic", CNB December 1999.

²⁵⁰ Before being appointed for the liquidation of the AB-Banka he was employed by a foreign trade company and from 1991 onwards he started being active in the liquidation process of foreign trade companies. Interview with Mr Ivan David, liquidator of AB-Banka, (16 April 1998).

banking, which was simpler in the socialist economic system and there was a lack of institutions to promote the banking supervisory capacity in the early stages of the reforms. The learning process for banking supervisors began only in February 1992 when the content and conception of banking supervision were defined. Overall, one can observe that the number of supervisory staff per bank could barely keep pace with the increasing number of banks at this time (Table 5-2-1). In 1992, one supervisor was apparently responsible for every two banks, while in 1999 two supervisors could be assigned to one bank.

Table 5-2-1: Number of Banks and Supervisors

	1992	1993	1994	1995	1996	1997	1998	1999
Domestic banks and foreign banks:	37	52	55	54	53	50	47	42
Approximate number of supervisory staff:	21	26	60	70	80	86	86	90
Number of supervisors per bank:	0.57	0.5	1.09	1.3	1.51	1.72	1.83	2.14
Number of banks per supervisor	1.76	2.00	0.92	0.77	0.66	0.58	0.55	0.47

Source: "Report on banking supervision in the Czech Republic", CNB, December 1999. Author's own calculations.

In addition, an increasing number of banks and increasing demands for banks' shortcomings to be remedied were overwhelming the supervisors. Even after the lapse of a decade the CNB is still pursuing training measures to improve banking supervision. In 1999 it joined a twinning programme for banking supervision with its partner country Germany.

Furthermore, given the inability of supervisory staff to distinguish between regular banking business and fraud one can plausibly conclude that the supervisory assessment of the quality of the banks' assets based on the banks' statements may have been an important reason for the failure of the restructuring programme. In fact, as noted by the CNB, an overvaluing of the quality of banks' assets by supervisors induced the stipulation of lower provisioning limits than was actually required.²⁵¹ As a consequence banks under the Stabilisation Programme failed to meet the programme's targets and were required to make additional provisions. Modifying and re-evaluating the stipulated indicators prescribed under the Stabilisation Programme may have reduced incentives for restructuring on the part of managers and shareholders or

²⁵¹ "Report on Banking Supervision in the Czech Republic", CNB December 1999, p. 33.

increased the incentives to miss the targets. Such supervisory deficiencies and inconsistencies seem to have served only to prolong banks' agony, thereby also increasing the expenses to the Ceska Financni.

Besides the question of whether the authorities in charge, particularly as outsiders, were qualified enough to assess accurately the reorganisation plans or the capabilities of bank managers, the authorities' approach to take over much control may have created incentives for reducing attempts to improve the profitability of the banks by the managers or owners. As already cited, one example which may have had such an effect is the attempts of the authorities to find a strategic partner for ailing banks. A second example is the approach of putting an ailing bank under the auspices of a big bank (e.g. before the liquidation of AB-Banka a new management was nominated by the Ceska Sporitelna, because the latter was a major creditor). A further example is that the authority of shareholders to decide on the future of a bank were limited by a provision which gave priority to the depositor's interest in case of a banking sector crisis by appointing a state administrator with authority to make decisions on the future of the bank without involving the board of directors and the supervisory board, i.e. shareholders. In case of Agrobanka, a mid-size bank, a decision had to be made by the court as to whether a state administrator needed to be appointed or shareholders should be given authority to decide on the future of the bank.²⁵² These measures did not encourage the active involvement of the owners. Involving insiders in the restructuring process may have helped authorities who did not have the required skills to turn ailing banks around.

Among the main weaknesses of banks under conservatorship interviewed were internal organisational deficiencies. Neither manager nor supervisors were capable of forming a realistic solution for this deficiency. Generally it was expected that the transfer of non-performing loans to another institution would give banks and enterprises time for consolidation, to concentrate on restructuring rather than wasting

²⁵² Interview Dr Slavoj Czesany, Adviser to the President and Chief Executive Officer at Agrobanka (9 April 1998).

managerial time on the burdensome task of calling in the loans. However, banks under conservatorship which were interviewed had not only to stop their business activities but could also not pursue restructuring, given the lack of finances and the uncertainty about the future, i.e. whether a willing merger partner to take over the banks' business would be found. The main measure adopted by the supervisors assuming power in banks under conservatorship, in turn, was to fulfil the requirement to increase reserves for non-performing loans and to protect the interests of banks' depositors, whereas not much was done to reorganise any bank, due to lack of organisational skills. For this reason in some cases reorganisations took place under the guidance of foreign experts (e.g. the sale of Agrobanka to its new strategic investor General Electric Co., under the supervision of HSBC Investment Bank plc.).

Furthermore, mistakes were made on choosing an appropriate strategic partner for the ailing banks. It was not realised that some investors were speculation-oriented. The involvement of Motoinvest in Agrobanka, for instance, induced a drift from the measures and targets prescribed by the CNB initially, worsening the bank's market position even further. In addition although a new investor was generally required to present its plans for consolidation of the bank it acquired, the Czech authorities did not have any institutional set-up to control whether the business strategy agreed upon was actually followed. The success of an acquisition by an investor depended to a great degree on the investor's assurance that asset stripping was not their objective (e.g. Nomura's involvement in IPB). Such a requirement was particularly crucial because the acquisition by the new strategic investor terminated the forced administration.

A further factor which possibly has provided increased incentives for taking risks in the banking system is likely to be associated with deposit insurance. Corporate clients are not covered by the deposit insurance scheme. Exempting corporate clients from deposit insurance is expected to give corporate savers an incentive to monitor the bank by closely examining the bank's balance-sheet and off-balance-sheet activities and then pulling their money out if the bank was taking on too much risk. But given

the lack of trust in the secondary banking sector due to several bank failures, the interviewed small banks were facing particular difficulties in gaining small-size enterprises as clients. Being deprived of the much required market discipline exerted by corporate savers, NEBs may have felt that moral hazard incentives had increased. Consequently, exempting corporate clients from deposit insurance appears to be only to the disadvantage of small banks. In the case of big banks exempting corporate clients from deposit insurance may reduce incentives for monitoring. Because corporate clients are aware that the bank is too-big-to-fail, they have less incentive to monitor the bank.

Because of the repeated bailing-out of big banks, which were regarded as “too big to fail,” (i.e. most SOBs have been protected by implicit deposit insurance schemes), and the prolonged reluctance of the Government to close insolvent NEBs, mainly for political reasons, the possibility that NEBs also gambled on government bailouts cannot completely be dismissed. The fact that before the parliamentary elections in 1996 depositors of small- and medium sized banks in a liquidity crisis were not compensated through the deposit insurance fund but through authority support - not only to mitigate potential runs on other small banks but also to avoid social tensions²⁵³ - is only one example which shows that implicit deposit insurance possibly promoted moral hazard behaviour on the part of bank management.

Overall, it can be concluded that neither the Consolidation Programme II nor the Stabilisation Programme and the Ceska Financni were adequately planned. Because Ceska Financni was staffed with only 30 people, not as it should have been, managers of banks which joined the Stabilisation Programme noted that they did not entirely rely on Ceska Financni's endeavours to call in their non-performing loans successfully. The Consolidation Programme II was suffering from organisational deficiencies in as much as after one year from its introduction additional measures were adopted and the Stabilisation Programme was launched to rescue small banks in

²⁵³ See Matousek, R. (1998, p. 39).

a liquidity crisis. This may have affected Government credibility and it is likely that banks could actually gamble on the possibility of government bailouts.

5.2.3 Financial Ratios and Capital Adequacy Standards

The financially distressed banks which had voluntarily joined the Stabilisation Programme were obliged to meet certain defined ratios and submit regular reports. One such limit was to meet an 8% capital adequacy ratio.

Since 1994 the capital adequacy ratio of 8% was complied with by all banks. The average capital adequacy ratio in large banks shows a constant increase from the initial period of the transition (Table 5-2-2).

Table 5-2-2: Capital Adequacy of Big Czech Banks (in %)

	1992	1993	1994	1995	1996	1997	1998	1999	2000 ¹
Large banks									
Ceska Sporitelna	7.1	7.39	10.99	10.98	8.86	12.08	14.83	17.6	
Ceskoslovenska Obchodni Banka		6.49	7.25	9.96	12.31	12.6			
Komerčni Banka		7.94	11.66	10.73	10.68	8.48			
Investicni a Postovni Banka	7.09	8.84	8.41	8.47	8.23	8.8			
Mean	7.10	7.67	9.58	10.04	10.02	10.49	12.36	17.60	
Small and medium size banks									
Ceskomoravska Zarucni a Rozvojova Banka			25.7	22.8	19.7	15.7	21	16.8	
Coop Banka		11.93	11.81	-7.1	-51.3				
Moravia Banka				8.8	11.33	11.68	8.09		
Prvni Mestska Banka					18.87	15.61	1.33	16.35	
Union Banka				15.24	9.87	8.04	11.46	11.98	
Universal Banka		17.44	16.85	11.53	9.82				
Expandia Banka								13.43	
Mean²		14.69	18.12	14.59	13.92	12.76	10.47	14.64	
Foreign banks									
BNP-Dresdner Bank			9.8						
Citibank				17.62	20.96	18.79	14.78	18.99	
GE Capital Bank							68	74	
Zivnostenska banka	18.5	18.2	11.4	11.1	11.25	11.5		14.66	
Investicni a Postovni Banka							9.89		
Mean²	18.50	18.20	10.60	14.36	16.11	15.15	12.34	16.83	
All banks³					9.95	9.47	12.06	13.64	16.83

Source: Annual Reports of individual banks. ¹= as of September 2000; ²= in calculating the mean negative figures in Coop Banka and extremely high figures in GE Capital Bank were not considered. ³= Consolidation Bank and banks under conservatorship excluded.

In 1992-97 compared to other types of banks large banks held a low percentage of capital adequacy ratio. Capital adequacy ratio in NEBs was decreasing from 1994 up through 1998. In 1995-1998 the capital adequacy ratio in foreign banks was high with

respect to big banks and NEBs. Since 1998, all types of banks increased their capital adequacy ratios. On the one hand this may have followed from tighter supervision and control. A new amendment was enacted giving the CNB the right to intervene in banks after 1997-98. In cases of financial distress, the amendment stipulated that the central bank is empowered to suspend the bank's management and to appoint an emergency supervisor to scrutinise all activities. On the other hand, this improvement may have followed from the provision of July 1999 that banks' capital adequacy was required to take account of credit and market risks.

A capital adequacy ratio of eight percent may be appropriate for banks in advanced market economies, however, particularly in a transitional environment a compliance with the Basle capital adequacy requirements has several crucial flaws and limitations. Some of these were addressed by the interviewees.

One was that initially the lack of adequate regulation and supervision gave an incentive for bank managers, in particular the managers of small banks, to evade building up reserves. In fact, the secondary bank crisis was exacerbated by the failure to provide adequate reserves to offset bad loans.²⁵⁴ Towards the end of the period studied small banks were required to build up loan loss provisioning. However, because a significant portion of bank earnings were used to build loan-loss reserves against outstanding bad debts the accumulation of much needed new capital was impeded. Hence, the capital adequacy ratio did not necessarily reflect the latest financial achievements of a bank. A second flaw which was mentioned by the interviewees was that, given the regulatory and supervisory deficiencies, some banks had an incentive to adjust their capital adequacy requirements shortly before publishing their balance sheet statement.

In addition, difficulties in measuring the quality of assets made compliance with the capital adequacy ratio at the amount of eight percent questionable. This was on the one hand due to the presence of high amounts of non-performing loans and on the other to the quality of collateral. In many cases lenders interviewed were either not

²⁵⁴ *Finance East Europe*, February 9, 1996, p. 13.

able to find a market for collateral or the property was of no value due to its exposure to environmental damage.

A further reason was that accounting and financial principles, as well as being underdeveloped, were new, particularly to NEBs as opposed to SOBs.²⁵⁵ Given that institutions were weak and supervisors inexperienced it was likely that the financial reporting of small banks was exposed to the risk of window dressing. Notwithstanding this risk, given the gradual implementation of banking regulation, banks in the Czech Republic had no alternative but to apply the Czech accounting and auditing rules until Western-type prudential regulations could be more or less implemented. However, either because the Czech Accounting and Reporting standards did not address certain accounting issues (e.g. no regulations existed for revaluing fixed assets) or due to divergent provisioning practices, the adherence to these guidelines resulted in much lower reserves than were actually required.²⁵⁶ Large banks, for instance, were keeping equity in line with the capital adequacy requirements, but the amount maintained was not necessarily helping to gauge the financial strength of a bank. As of 31 December 1995 Komerční Banka, for instance, reported a capital adequacy ratio of 8.65% in

²⁵⁵ For instance, no comprehensive regulation existed for a decade on the evaluation of financial instruments, which prevented an accurate assessment of companies' risk profile. Only in 1 January 2001, did the International Accounting Standards Committee (IASB) issue IAS 39, Financial Instruments: Recognition and Measurement. All Czech enterprises preparing IAS financial statements, regardless of their size or industry, whether public or non-public, must account for financial instruments in the same manner (see for details *KPMG Factsheet*). See also Appendix A1-1.

²⁵⁶ Beattie, V. A., Casson et al. (1995) provide a comprehensive analysis of banks' provisioning practices, based on factual evidence from the most important banking centres (USA, Canada, Japan, Australia, UK, France, Germany, Luxembourg, Italy, Belgium, Spain, Netherlands, Denmark and Switzerland) by assessing the consequences and policy implications of disparate rules, accounting procedures and practices governing banks' provisioning decisions. In centrally planned economies there was no distinction between historic cost accounting (HCA) and market value accounting (MVA). HCA is based on the values at which transactions between the company and third parties take place. In the absence of default risk (i.e. credit risk); the value of a bank's loan portfolio under HCA is simply the nominal amount of the outstanding loans. Where, however, loans are considered to be irrecoverable (i.e. bad), the nominal sum outstanding is written off. With particular reference to banks, HCA has been criticized for its inability to reflect the market value of a bank's loans. According to White (1991) provisioning under HCA is too slow to recognize declines in the value of loans. HCA may facilitate the systematic overstatement of capital, as evidenced by Barth, Bartholomew and Labich (1989) and James (1991). MVA recognizes assets and liabilities at their market value. If the borrower is expected to and does make all the required payments under a loan agreement, and if the discount rate is the same as the rate charged on the loan, then there is no difference between HCA and MVA. The main problem with MVA concerns the determination of the values of loans. The problems are of two types: determining value when there is a market for loans; and determining value in the absence of a market.

accordance with the Czech requirements; however, if the 1988 Basle Committee guideline was applied, a capital adequacy ratio of 10.73% had to be maintained.²⁵⁷

5.2.4 Foreclosing Collateral

The success of the restructuring and recapitalisation programmes were likely to be undermined also by the Bankruptcy Act which made it difficult for creditors to seize collateral.²⁵⁸ The initial legal framework was controversial particularly in cases where the debtor was not able to meet his obligations and where all possibilities to agree on the loan payment (deferral of instalments, individual payment schedule etc.) had failed. On the whole, however, it favoured debtors over creditors, both in terms of recovering debts and in enforcing collateral for deferred instalments, and thus was likely to support the moral hazard evident in many loan applications. For instance, if the debtor enterprise was unable to meet its obligations it was against the law to stop the payment of credit and to foreclose on the pledged or mortgaged collateral received as security for loans granted. This was because, according to the law, discontinuation of the credit meant interruption of the agreement. Consequently, collateral remained in the ownership of the enterprises. Bankruptcy law did not allow creditors to enforce the sale of debtors' assets unless they got the debtors' permission. Bankers interviewed repeatedly confirmed that the bankruptcy option of creditors on customers could not be used and that permission to sell a collateral or to declare bankruptcy was never given.²⁵⁹

While the foreign banks interviewed were avoiding problems coming with the regulatory framework restricting creditors, *inter alia*, to cancel the purpose of the borrowed money or to declare bankruptcy in case of distress by abstaining from

²⁵⁷ Annual Report.

²⁵⁸ This legal bias favouring the debtor was traditionally shown when enterprises were in debt and, given the lack of capital, the means of production were sold by credit. Hence, the officials were not able to abolish these structures immediately. In response to creditors' difficulties in seizing collateral, banks were simply required by the CNB to provision to 100 percent for "loss" loans backed by real estate collateral.

²⁵⁹ Interview with Hana Urbanova, Komerční Banka, (14 April 1998).

lending to domestic enterprises based on collateral, small domestic banks in this study were resorting to working out some form of co-operation with their debtors if they could not keep up their payments.²⁶⁰ Large banks in this study, in turn, were less likely to opt for the liquidation of a financially distressed firm.²⁶¹ The reason for the reluctance to liquidate a firm in financial distress, besides the fact that most SOE were protected against liquidation, was that in most cases the outcome of liquidation was unlikely to pay out the credit granted due to the unadvertisable state of the enterprises and collateral under their ownership. Therefore it can be concluded that NEBs were at an advantage in as much as they could take action on their borrowers' default in repaying the borrowed funds and had a chance, if any, to recover at least some part of the loans while SOBs did not even have a choice because, as implied by the value of the collateral, any action would not have paid back the credit.

According to the findings in this study the decision to work-out is unlikely to depend on whether the bank is optimistic about the borrower's financial strength and ability to repay the obligation and whether applying to the courts would affect the banks' goodwill.²⁶² This implies that the distressed financial condition of a firm is likely to meet with a bankruptcy threat if the legal system is functioning according to market-based criteria. It further implies that the problem of gaining enough learning and experience to overcome the risks associated with the transition process may in fact be solved much earlier than assumed. These observations underline the importance of well defined property rights particularly during the initial stages of a transition. However, an amendment in line with market based criteria may still take some time to directly influence the willingness of banks to provide loans. Deficiencies in other laws as well as an ineffective judicial process - in particular due to a lack of precedent and implementation - might still impede such improvements in the bankruptcy process. Indeed, confusing and lengthy litigation were giving borrowers

²⁶⁰ see Section 3.3 (Question 4). *Work out* was applied by the Universal Banka and the specialized bank CMHB.

²⁶¹ see Section 3.3 (Question 3)

²⁶² see Section 3.3 (Question 4).

inter alia an increased incentive to shift assets to create new companies.²⁶³ As suggested by the representative of Komerční Banka, the guarantees such as items of real estate offered by the applicant were important for providing loans; however, in the face of general difficulties in foreclosing collateral the willingness of banks to provide loans in future will come to depend first and foremost on previous experience with the applicant for the loan and on the quality of the business plan and its evaluation by the bank.²⁶⁴ Hence, one can plausibly conclude that such a legal bias and the inability of banks to enforce the insolvency of a firm in financial distress mainly served to increase the moral hazard incentive for borrowers, thereby not only undermining restructuring attempts but also inhibiting the development of sound corporate governance structures, which could result from long-term relations between lenders and borrowers.²⁶⁵

Furthermore, there was some evidence from the interviews that specialised banks abstained from diversification to overcome the disadvantages of the legal bias in favour of debtors. Despite having a universal banking licence the CMHB, a mortgage bank interviewed, for instance, preferred not to expand its business by providing services to the corporate sector and thus to remain specialised for some time. The reason for this was that, in contrast to the corporate sector, individuals were found to have fewer incentives to delay the payments of their instalments because the bank had full property rights over the housing property pledged.²⁶⁶ This mainly implies that the Bankruptcy Act favouring debtors was also impeding diversification, and thus competition for almost a decade.

5.2.5 Foreign Banks and Consolidation via an FSP

The CNB's approach of restricting the direct entry of foreign banks into the Czech banking market since 1995/96 was intended to consolidate the Czech banking sector.

²⁶³ "Velvet devolution. Czech Republic's economic difficulties," *Reason*. 01.03.1998.

²⁶⁴ Direct inquiry from Marek Vesely, Ing. Komerční Banka, (12.06.2000).

²⁶⁵ Gerschenkron, A. (1968, p.137) and Binks, M.R., C.T. Ennew and G.V. Reed (1992, p. 39).

²⁶⁶ Interview with Ing. Pavel Hrubes, Credit Portfolio Risk Management, CMHB, (9 April 1998).

However, restricting the involvement of foreign banks to their participation in the privatisation of domestic banks was likely to have an impact upon competitive pressure and consequently on eventual efficiency gains in the banking system.

The collapse of several small banks led to a shift of clients to big banks with extensive branch networks and made small banks more vulnerable to eventual deposit outflows. As mentioned in Chapter Two, for a long period of time after the beginning of the reform process big banks retained quite a substantial market share. In 1996, for instance, big banks covered almost 70% of total assets on the market, leaving only 30% of the market for the remaining 48 small banks (Table 2-2-4). Both big banks and NEBs were in need of competitive pressure to improve efficiency. While the former required a challenge to their dominant market position, the latter needed competitive pressure to enter market niches. As regards big banks, the strategy of foreign banks to target low-risk or blue-chip enterprises tended to exert competitive pressure on big banks, in particular on Komerčni Banka; these are significantly prone to excessive credit risk due to a lack of diversified credit portfolios.²⁶⁷

In general, it can be argued that given the prevalence of bureaucracy and the problems associated with organisational and hierarchical inertia in big banks, small banks are relatively flexible in entering market niches in offering non-classical private banking services and investment banking products. Foreign banks in this study were found to be the only institutions which were actually creating a market by filling market niches. Competition coming with the financially and technologically advanced foreign banks and their offers of new products (e.g. mortgage business) were driving factors for small banks to follow suit and to improve operational as well as service efficiency. Mortgage bond dealings,²⁶⁸ selling electronic products in combination with consumer credits (the main strategy of GE Capital) and leasing were some examples of banking services which were initially offered solely by foreign banks and gradually

²⁶⁷ The Komerčni Banka's portfolio is in general heavily concentrated on loans of CZK 50 million or greater. As of 31 December 1995, 60.3% of total loans was CZK 50 million or greater shared among 879 clients. Offering Circular Komerčni Banka (9 May 1996, p. 49).

²⁶⁸ The first bank which received a special mortgage license was Hypo-Bank CZ in June 1996.

adopted by domestic banks. Given that foreign banks are better organised, more aggressive, with activities aimed at selecting the best customers by taking advantage of improved risk control instruments, their application of a more advanced technology²⁶⁹ was driving domestic banks to take them as a model for improvement.²⁷⁰ Domestic banks had to invest to improve technology and infrastructure, to adopt further measures to improve the training of personnel and to offer favourable conditions. Hence, it is plausible to conclude that, in general, restricting foreign bank entry is likely to inhibit the development of an efficient financial services industry.

Besides being experienced in banking business and financially and technologically advanced, foreign banks had a better starting position, in particular because they were not burdened with bad debts. It seems evident that the presence of foreign banks is related to the extent of FDI as well as the number of FDI and joint venture agreements, and the proximity of neighbouring countries, particularly Germany and Austria (Table 5-2-3).

Table 5-2-3: FDI and Foreign Bank Entry

	Total investment (planned) Mio \$ (as of 4/93) ¹	Total investment (planned) % (as of 4/93)	Number of FDI and Joint Ventures ¹	Banks with a banking license (as of 1/1993) ²	1990-1999 \$ Mio.	Number of FDI and Joint Ventures 1990-1999	Subsidiaries Branches, FSPs (as of 2000) ³
Germany	4 652.5	72.8	95	4	5032.8	87	9.5⁴
Netherlands	17.5	0.3	13	2	4627.1		2
Austria	21.9	0.3	33	4	2281.2		7
USA	1 005.9	15.7	39	1	1740.8	58	2
Belgium	86.9	1.4	7		1389.4		1
UK	8.5	0.1	13		848.0	15	1
France	171.0	2.7	30	3	838.9		2.5
Switzerland	237.7	3.7	27	1	565.8		
Others					1928.1		
Total					19252.1		

¹ Czech Business Update, "Foreign Investment in the Czech Republic: major acquisitions and some joint venture deals, excluding real estate" as of April 1993; ² Source: Ekonom 6/93, "Bankovni Sektor 1993"; ³ including foreign strategic partnerships and mergers among foreign bank subsidiaries; ⁴ 0.5 indicates the BNP-Dresdner Bank which is a joint venture between German and French institutions.

²⁶⁹ see Section 3.3 (Question 23a and b).

²⁷⁰ see Section 3.3 (Questions 23a,b).

Consequently, one could safely conclude that domestic enterprises in need of restructuring were not always able to benefit from the services offered by the foreign banks. Providing banking services mainly to clients whom they followed into the Czech Republic, and also to privatised, to monopoly and low risk companies in the Czech Republic, protected foreign banks from incurring bad loans. While domestic banks were forced to take up the burden of high credit risk connected with transformation and privatisation, *inter alia*, by having to maintain large interest rate spreads, the main reason for granting loans for both the foreign banks which responded to the questionnaire was to establish a market share; helping to rebuild the country ranked very low. One explanation which has been advanced in the interviews for the foreign banks' hesitation to provide long-term loans to domestic enterprises, besides the difficulty of foreclosing and seizing collateral, was the higher risk associated with fixed interest rates in a transitional environment and the legal status of a subsidiary which either was forced to back activities by own capital or to give only restricted access to finances, as obliged by headquarters.

However, given the costs associated with market exit, recent mergers among foreign subsidiaries²⁷¹ - indicating attempts to improve profitability and efficiency - as well as the continuous entry of foreign strategic partners into the Czech banking market by means of acquiring ailing institutions at a loss are possible indicators of the foreign banks' strategy of long-term interest in the Czech market and expanding the provision of financial services to domestic enterprises. Furthermore, most foreign banks in the Czech Republic are subsidiaries. The reason for setting a subsidiary was the ease of establishing a branch network through a subsidiary rather than through a branch of a foreign bank, as in the latter case the permission of the CNB is required for each branch in the Czech Republic. This may additionally indicate that the long-term strategy of foreign banks is also to develop new products and services for domestic enterprises as well as to provide retail banking services to households.

²⁷¹ Bank Austria with Bank Austria Creditanstalt on June 30, 1998; Hypo-Bank with Vereinsbank on December 31, 1998; Erste Bank Sparkassen with Ceska Sporitelna on September 30, 2000.

Moreover, the financial crisis in 1997 has proved that the Czech Republic was highly dependent on flighty short-term capital, resulting from a lack of confidence in the long-term financial policy of the country, rather than long-term FDI (Table A 5-2-5). This is likely to exert pressure on foreign banks to consider new market opportunities and to compete with domestic banks for domestic clients, in addition to their main activity of financing trade and short-term investments.

Besides a reduction in FDIs since 1999, a negative growth rate of credits provided in foreign currency can be observed (Table A3-4c, 3). This is likely to do with the reduction of the significant interest rate differential which prevailed between the Czech currency and foreign currencies since the early stages of reform. The erosion of one of the main competitive advantages of foreign banks in interest rate differentials further indicates that foreign banks on the market need to consider more than ever the provision of services to domestic companies. Thus restricting foreign bank entry bears the risk of inhibiting the development of a competitive financial services industry which may limit the financing alternatives for enterprises on the capital market at favourable terms.

The CNB's strategy to restrict the entry of foreign banks to joint ventures or in the acquisition of ailing banks enabled the latter to gain know-how in the evaluation of bad loans, risk analysis and the establishment of efficient organisational structures. Survey evidence has suggested that joint ventures with foreign institutions are driving the restructuring process within banks. Yet, FSPs' contribution seems to depend on economic prosperity, on the one hand, and long-term interest in the bank acquired, on the other. The FSP may not always have a long-term interest in the financial institutions acquired, but be more interested in the assets owned by the bank, as exemplified in the case of Nomura and IPB. This additionally strengthens the argument not to restrict the involvement of foreign banks solely to their participation in the privatisation of domestic banks.

5.3 The Costs of the Recovery Programmes and Sources of Recovery

The real extent of non-performing loans remained non-transparent and came only gradually to the surface with the improvement of prudential regulation and of supervision and of the reporting and accounting standards. The credit and loan portfolio of the Consolidation Bank (KOB) is depicted in Table A 2-2-2-1. For the period between 1991 and 1996 the gross expenses of the Consolidation Programme I implemented via the KOB were CZK 60.8 bn (\$ 2.2 bn) including the costs of transferring selected credits to KOB. In 1999 and 2000 the total old block of loans accounted for -12% and -19%²⁷² of the loans in 1996, respectively.

Although TOZ-credits are defined as permanently revolving working capital credits inherited, which were granted before 1989 by Czechoslovak commercial banks under the instructions of the State, one can observe that in 1993, 1994, 1995 and 1998 further TOZ clients joined the KOB. This may have resulted from the classification of certain long-term loans which were expected to be amortised during the post-reform period. In 1999 bad loans in SOBs (Komerční Banka, Česká spořitelna and Československá Banka) and transformation institutions (KOB, Česká inkasna and Česká finanční) were estimated to be on average 29% of all loans held by Czech banks.²⁷³

Bad loans in SOBs and transformation institutions (the KOB and Česká finanční) accumulated year by year and the fiscal costs for the restructuring of the banking sector generally absorbed a high proportion of the annual GDP which in turn increased public debt. In 1995-97 the banking system, enterprise sector and the Government each accounted for an average of 43%, 49% and 8% of the gross debt, respectively.²⁷⁴ More specifically, in 1993-94 state financial assets contributed an average of 8.7% to the budget surplus, whereas in 1995-97 they made up on average 16% of the budget deficit. In 1999 state financial assets represented almost 50% of the public deficit (Table 5-2-4). To sum up, the overall Government deficit continued, and

²⁷² As of September 2000.

²⁷³ "Czech Republic: Banks prepare for privatization," *Euromoney*, January 10, 1999.

²⁷⁴ Source: CNB (1999).

still continues, to be highly influenced by having to cover the losses of the Consolidation Bank.²⁷⁵

Table 5-2-4: Factors Affecting the Public Budget

	1993	1994	1995	1996	1997	1998	1999
Public budget surplus/deficit (in CZK bn)	23.3	5.5	2.9	-21.9	-27.8	-27.5	-10.7
State financial assets	1.5	1	-2.7	-2.3	-2.5	3.7	-5.2
NPF	13.4	-5.4	4	-5.9	-4.5	-5.1	2.9
Others	8.4	9.9	1.6	-13.7	-20.8	-26.1	-8.4

Source: CNB.

The costs to the Government were accruing through recapitalisation, subsidies to promote take-overs by strategic investors and the compensation of depositors in case of NEBs. For the most part, two sources were utilised to finance the cost of bank recapitalization and stabilisation, that is, privatisation proceeds or the resources of the NPF and issuing government bonds of the NPF. However, the resources of the NPF turned out to be insufficient for the purpose of recovering costs. In 1996-98 in particular, losses in NPF were responsible for about 20% of the public deficit (Table 5-2-4). The requirement to finance high budget deficit increased banks' holding of treasury bills on average by 33% in 1999 on the previous year (Table 3-4-12).

CNB profits

One of the sources of revenue on which the Government can draw from the financial system is central bank profits. In accordance with the Act No. 6/1993 Coll. on the CNB the state budget may claim profits from the CNB. Profits of the CNB are thus a further indicator of the revenue which the Government can draw from the financial system. Profits of the CNB as a percentage of GDP fell from almost zero in 1995 to around -0.6%, in 1996 increased to 0.7%, declined substantially to -2.8% in 1997 and went up to 1.8% in 1999 (Table 5-2-5).

²⁷⁵ The payment for KOB 1998 loss (CZK 14,4 bn.) was postponed from 1999 to 2000. In 2000 the government had to pay both the 1998 and 1999 losses, amounting together to approx. CZK 50,5 bn.

Table 5-2-5: Government Revenue from the Banking System, 1995-2000 (percent of GDP)

	1995	1996	1997	1998	1999	2000*
CNB profit (loss)	0	-0.6	0.7	-2.8	1.8	
Taxation of Commercial banks			0.06	0.17	0.06	0.16

* GDP as of end of 3rd quarter; Own calculations based on annual reports.

In 1998-99, however, the CNB profits to the Czech Government declined substantially in importance as a source of revenue. Although the CNB recorded a profit in 1999, covering the losses for 1998 was given priority status in the distribution of profit. Direct taxes paid by commercial banks, in turn, were lowest in 1997 and 1999, likely to be connected with high levels of weighted classification considering collateral.²⁷⁶ Loan loss provisions are treated as costs and are therefore deductible from taxable income. Overall, increasing the deductibility of specific provisions on classified loans, and allowing full tax deductibility of accrued interest on non-performing loans, helped to avoid paying taxes on paper profits, but reduced the profit remittances of the CNB to the Government. Given that provisions were highest among sample SOBs, and in particular NEBs and privatised banks, during the period of study it appears that these types of banks were the least favourable source of revenue for the Government. Because foreign banks show the least amount of provision, limiting direct market entry to this type of banks is likely to oppose the efforts to improve the sources of revenue which the Government may turn to.

Recovering Poor Loans

The Government's expectation of covering the expenses to recapitalise its banking system at least in part by some returnability of poor-quality assets were largely not fulfilled, because the repayment record of classified loans remained relatively low. In 1996, 1997, 1998, 1999 and 2000, 65.3%, 75.6%, 89.3%, 98.3 % and 99% of classified loans were written off, respectively. In 1994 newly incurred bad loans increased by 347.8% on those of the previous year and amounted to CZK 10.3 bn. In

²⁷⁶ Banks are required to provision to 100 percent for "loss" loans backed by real estate collateral.

1995-96, 1997-98 and 1999-2000 the average year-on increase in newly incurred bad loans was around 33%, 92% and 52%, respectively. During the period 1996-98 and 1999-2000 a yearly average of 24% and 42% was declared lost. In 1994-98 an annual average of 54% was written off from the total non-performing loans (i.e. TOZ loans plus newly incurred bad loans). In 1999, total non-performing loans amounted to CZK 160.8 bn, of which 65.4% had to be written off.

Besides the macroeconomic turmoil affecting the performance of enterprises, the low redemption record may either be due to a preference for closure and low survival prospects in an internationally competitive environment or poor restructuring attempts by the KOB. The KOB is not an institution for work-out but has the legal status of a bank. The task of the KOB is to administer bad assets rather than recovering loans. The non-performing credits became repayable in instalments as agreed by the KOB with each individual company. Creating a recovery institution which is independent from the interests of the Government and endowed with powers to impose a bankruptcy threat on firms in cases where its restructuring plans for recovering bad loans are not observed may have induced the restructuring of SOEs at an early stage. This proposal may have been successful because, according to the interviews with KOB managers, one advantage of the KOB in enterprise restructuring was its knowledge of the domestic industrial market and its inherent problems.²⁷⁷

Privatisation Proceeds

An additional source to cover the bad debt burden was expected to come from the sales of state stakes in four major Czech banks which in 1997 were estimated to represent a market value of about CZK 50 bn.²⁷⁸ It is logical to expect that the shift of

²⁷⁷ Interview with Petr Vrba, KOB, Head of Financial Institutions Department, (10 April 1998). One example of successful restructuring by the KOB is the case of TATRA, producers of heavy lorries, and part of the family silver of the Czech industry. The enterprise was almost bankrupt in 1995. The KOB managed to restructure it successfully, but still Tatra remained behind Skoda as a competitor in world markets.

²⁷⁸ This figure is based on estimates of the CNB in 1997. According to Business Central Europe, October 1997, however, the state's combined stakes in the three banks, Komerční Banka, Česka

bad loans to the KOB may have helped to increase the market value of the banks involved.²⁷⁹ However, the sale of state stakes realised prices lower than had been expected. Indeed, the Government's 36% stake in IPB was sold for only CZK 2.9 bn instead of the planned price of CZK 5.9 bn (\$175 mn). Even more discouraging was the sale of Agrobanka whereby the state took over CZK 20 bn in bad loans before selling the bank for approximately CZK 2 bn, half what it had hoped for.²⁸⁰

The relatively low price paid for Czech SOBs was probably to do with the deterioration of the profitability and efficiency of banks during the post-reform period, as a result of delays in restructuring. This was mainly due to political interest on the part of the initial Government to maintaining core SOEs as well as SOB domestically owned. Only in the face of deteriorating bank profitability and efficiency did the Government begin to consider the possibility of privatising its ailing SOBs. However, lack of funds among domestic investors made a sale to foreign investors inevitable. Due to the foreign investors' fear of hidden bad loans and high restructuring costs, as well as the association of banks with unprofitable enterprises, the Czech authorities played a passive rather than an active process during the sale of the banks. A lack of significant interest from foreign investors in acquiring Czech banks because of their anticipation of unrevealed bad loans and high restructuring cost may have been justified, in particular because of the weak auditing and reporting requirements prevailing at that time. Hence, in most cases the Government sold stakes in big banks at too low a price (e.g. the sale of IPB to Nomura) or else compensated the FSP for its losses in taking over the part of the banks with negative value (e.g. the sale of Agrobanka to GE Capital).

Sporitelna and CSOB, were estimated to amount to \$1.5 bn. The contradiction in these estimates may result from different valuation techniques.

²⁷⁹ Claessens, S. (1996, pp. 15) describes three possible transactional methods for obtaining government revenues by privatizing banks with positive franchise value - an initial public offering, an auction and a negotiated transaction.

²⁸⁰ "Banks near ground zero," *The Prague Post*, May 13, 1998. On March 14, 1997 the CNB Board gave its consent to a solution which required an internal restructuring of the Bank and the splitting of its balance sheet, i.e. to break the bank into two parts, a good bank and a bad bank. The good bank was acquired by GE, whereas the bad bank (CZK 20 bn) was transferred to the KOB.

A further reason for a drop in the market value of SOBs could be the bureaucracy which may have reduced the speed of banking privatisation. Privatisation policies concerning big banks changed with the change of parliament. While the first Government preferred to retain large banks which were domestically owned, the subsequent Government reversed this policy. During this period the rating of the big banks deteriorated. In addition, given that no clear rules were delineated for banking privatisation or for the requirements to be met by prospective buyers of SOBs, there was usually some controversy about the responsible institution and terms of the privatisation. The reason for this was lack of co-operation and divergence of interest between the Government, the CNB and the NPF. Moreover, no active role was assigned to the banking management during the privatisation of state stakes. The foreign investors had to negotiate solely with the Czech authorities. This may have impeded a successful privatisation of banks, due to the possibility of biased information during the sale negotiations.²⁸¹

In addition unclear ownership structures created during the division of federal property further affected the speed of privatising big banks. For instance, one of the four different shareholders of CSOB has been the National Bank of Slovakia which owned half of the bank's 70% state stake. The management of the loan portfolio of the bank was assigned to special agencies, the Czeska Inkasni and Slovak Inkasni. However, this brought consolidation problems such as the transfer of profits on the part of Slovak Inkasni.

Besides the low prices obtained for Government stakes, errors were made when selecting a reputable FSP with a long term interest in a bank. As was outlined above, with the retreat of Nomura from IPB, after it stripped the bank of its valuable equity interests in enterprises, the Government had to incur further expenses to sustain the bank and compensate its depositors. There are estimates that the provisioning gap could be around CZK 70 bn, equal to that of two other big SOBs.²⁸²

²⁸¹ In Poland, for instance, the banking management of Bank Handlowy w Warszawie played an active role during the privatization of the bank.

²⁸² "Failure of IPB shakes faith in Czech banks," *Financial Times*, 19.06.2000.

At the time of writing the transformation institutions KOB, Czeska Financni and Czeska Inkasni which assisted the CNB to deal with the transformation process are in a liquidity crisis. It appears that bad loans or restructuring of the banking sector are likely to continue to have negative implications for the revenues of the Government by absorbing a high proportion of the GDP, thereby increasing public debt even further.

5.4 Summary and Conclusions

Several factors have impacted upon efficiency and an improved corporate governance within the domestic banks studied, leaving them at a disadvantage in allocating funds efficiently compared to foreign banks. This chapter analysed, firstly, prudential regulations, and secondly the concept of recovery approaches which may have partly induced this shortcoming. Bank recovery concepts applied in the Czech Republic involved early recapitalizations by government bonds, further capital injections from the government budget for newly incurred bad loans in case of big banks, and the purchasing of insolvent receivables in the expectation of being paid back later (seven years in the case of Ceska Financni) by observing predefined limitations on banking activities in the case of NEBs.

Overall it can be concluded that increased moral hazard incentives in the banking sector were mainly due to a weak or paternalistic state during the post-transition period. One crucial factor which fostered moral hazard was a slow adjustment and enforcement of prudential regulations. The importance of a legal framework became crucial when the Government embarked on large-scale consolidation of domestic banks. While banks were relieved of their non-performing loans, weak supervision fostered moral hazard. In particular, the Bankruptcy Act, by restricting creditors' power to seize collateral, was not conducive to the pursuit of sound lending policies.

Because of the Government's reluctance to allow bankruptcy, the Consolidation Bank was equipped accordingly. It alone had the task of administering the overtaken loans and was not a work-out institution. Consequently, no significant improvements were made at the enterprise level and this gave rise to the flow problem of bad loans. Thus, while there was a tendency among foreign banks to favour blue-chip enterprises (credit rationing), domestic banks had to operate under great uncertainty. As a consequence, entry was forbidden to foreign banks. However, restricting foreign bank entry served to worsen the state of domestic banks in as much as potential efficiency gains which would have come with competition were blocked.

Furthermore, because various state institutions as owners of SOBs were not actively involved in the corporate governance of banks, the Consolidation Bank, in relieving banks from bad loans early on, seems not to have helped banks to improve efficiency. Shifting bad loans to another institution deprived bank managers of the incentive to improve their loan assessment skills, to improve their governance role in enterprises, to hasten innovation and search for remedies while managing bad loans themselves.

As was the case with the KOB, the approaches to consolidate the secondary banking sector did not meet with much success. Recapitalised banks could not successfully improve efficiency due lack of restructuring. Similarly, revitalisation attempts in banks under conservatorship also failed. It appears that the reason for this, besides the impact of the economic turmoil and loss of confidence on the small banking sector, is organisational deficiencies. Given the lack of Western-type disclosure requirements, reliance upon indicators to assess banks progress was likely to be misplaced, and the reorganisation plans submitted by banks were likely to be misinterpreted by the supervisors in charge who were usually not specialised in turning unprofitable banks around. The study results seem to confirm that restricting market entry for foreign banks was an additional impediment to the success of the consolidation attempts of the secondary banking sector. Lack of competitive pressure

coming with foreign banks helped big banks to retain monopoly power, while discouraging domestic small banks from entering market niches.

It is likely that the outcomes of the Czech recapitalisation and restructuring attempts, at least in the short- and medium-term, will continue to absorb a relatively high proportion of the public budget. Neither the revenues from banking privatisation nor the tax revenues which accrue from the banking system are likely to be sufficient to recover the costs of banking consolidation.

CHAPTER SIX

EMPIRICAL ANALYSIS OF CZECH BANKS' EFFICIENCY

6.1 Introduction

During the process of transition Czech banks faced several obstacles to competing effectively with foreign banks. Among the most common obstacles were inherited non-performing loans, lack of skilled banking personnel, overstaffing and the requirement to restructure. Generally it is argued that foreign banks have a comparative advantage in several respects, such as experience in banking, and sophisticated methods of evaluating credit risks. Therefore, foreign banks might be expected to be more efficient and more profitable than domestic banks. This can be assumed as having to do with their superior management of resources. Nevertheless, domestic banks were relieved of their portfolios of bad loans early on or were restructured to meet the anticipated competitive threat posed by both new domestic banks and foreign banks; they also availed themselves of the extensive branch network, and knowledge of the local market conditions. Moreover, foreign banks' comparative advantages are not always as extensive as assumed. For instance, for a decision to lend to small firms credit scoring methods which are based on "hard" or statistical information may not be entirely reliable. Lending to such firms may require "soft" information, i.e. information that is not easily quantifiable and is generally obtained through a long-term relationship with the client. This type of controversy raises the interesting question of the degree of efficiency of the domestic banks as opposed to foreign entrants.

Inefficiency can be either due to factors beyond the control of management (e.g., local or regional economic conditions, organisational and legal structures related to the regulatory regime, luck, labour strikes, or the performance of machinery) or due

to poor managerial performance (e.g., incompetent asset-liability management, expense preference behaviour, agency problems). Inefficiency due to factors under management control are further distinguished as being due to technical inefficiency and allocative inefficiency.²⁸³ The term X-inefficiency in banking denotes both technical and allocative inefficiency at the same time, as distinguished from scale and scope economies. Technical inefficiency is present if too many inputs are used in the production of outputs, and/or if too few outputs are produced.²⁸⁴ Allocative inefficiency results from failing to react optimally to relative prices of inputs. Combining technical and allocative efficiency provides a measure of cost efficiency which indicates how close a bank's cost is to what a best-practice bank's cost would be for producing the same output bundle under the same conditions. Standard profit efficiency - as opposed to the cost function - specifies variable profits in place of variable costs and measures how close a bank is to producing the maximum possible profit given a particular level of input prices and output prices (and other variables). Alternative profit efficiency employs also profits as dependent variable but employs the same exogenous variables as the cost function. It measures how close a bank comes to earning maximum profits given its output levels rather than its output prices.

This chapter attempts to answer the question as to how the three categories of banking firms, namely SOBs, NEBs and foreign banks, in the Czech banking system have achieved their highest operational capability or relative efficiency during the process of transition. In particular, the following two questions will be answered: What is the degree of profit and cost X-inefficiency in the three categories of banks during the period 1992-1999? And what were the underlying causes of efficiency or inefficiency in banks? In doing this, the study complements the existing US and UK institutional focus.

²⁸³ Farrell, M.J. (1957).

²⁸⁴ See for instance Ferrier, G. D. and C. A. K. Lovell (1990).

6.2 Importance of Measuring X-efficiency

The interest in studying the efficiency of the Czech banking sector is driven by the need to improve the quality of reforms to modernise the financial system. Tracing X-inefficiencies may have several policy implications. First, measuring the degree of X-inefficiencies are especially appropriate to capture the dynamics of bank efficiency which are particularly significant in transition economies, such as continuous regulatory changes and the restructuring of non-performing assets; the entry of new banks in the market; and the privatisation of enterprises and banks. Such changes may not always be captured by focusing on critical variables and financial ratios such as ROA or ROE.²⁸⁵ Hence, the policy implications of such research need to be considered with care. Second, identifying the degree of X-inefficiency is important because it indicates how closely the bank approaches its highest operational capability. If the degree of X-inefficiency is too high, measures need to be adopted to improve banks' performance. Identifying "best practices" banks and adopting their management practices or characteristics should help to improve performance. In particular, because X-inefficiency is mainly due to bad management, studies of X-inefficiencies in a transitional environment can be used to determine which banks are most in need of reform, local management replacement or closure.

Finally, therefore, measuring the degree of X-efficiency may help to find out whether simply lower costs (the efficiency hypothesis or relative efficiency model) in a particular category of banking firm is associated with higher efficiency and competitiveness or whether good performance was, for instance, due to free riding behaviour. Good performance of new entrants can be due to free riding behaviour by taking advantage of low interest rates on the interbank money market or a cherry-picking strategy, whereas the experience of old banks on the local market may allow them to operate at better levels of managerial efficiency than the new entrants.

²⁸⁵ Productivity measures (involve the calculation of total productivity by using all the factor inputs) and partial measures (such as output per man-hour) are some examples of this approach.

The following two sections discuss the importance of studying X-efficiency with regard to the Czech banking sector and the factors which are likely to induce nonmaximising behaviour on the part of bank management - which is the main source of X-inefficiency - during the transition process.

6.2.1 Profitability of the Czech banks

The structure of the financial market and institutions in the Czech Republic since the beginning of the transition is characterised by higher concentration in commercial banking along with increased competition with foreign banks. This was partly a result of several bank failures, legislative changes and economic adjustment. One major factor inhibiting a successful intermediation of domestic banks in this TE was inherited bad loans which also hindered successful competition consequent on the entry of foreign banks. Hence, in the Czech Republic the latest measure to increase profitability of domestic banks is to restrict further foreign bank entry but allow entry via acquisition of an ailing domestic bank. Czech banks are in dire need of increased profitability. Table 6-1 shows the performance of the sample of Czech banks used during the sample years 1992 to 1999 vis-à-vis the performance of the Polish banks.

Table 6-1: Performance Indicators of Czech and Polish Banks

	Czech Banks								Polish Banks							
	1992	1993	1994	1995	1996	1997	1998	1999	1992	1993	1994	1995	1996	1997	1998	1999
	Domestic Banks								Domestic Banks							
ROAA - %	0.2	-0.7	-0.3	-1.8	-7.2	-0.9	-0.6	-0.4	0.4	1.2	0.9	2.3	2.2	2.2	1.3	0.6
Loan Loss Provisions/TA %	1.6	3	1.6	4.3	5	-1	2.7	1.7	3.6	0.7	1.7	0.3	0.4	0.4	0.7	0.9
Net income/TA %	-0.2	-0.7	-0.4	-2.4	-9	-1.1	-0.7	-0.6	0.4	1	1	2	1.9	1.9	1.1	0.4
Operating profits/TA %	4.1	5	5.3	5.2	4.7	4.1	5.2	4	8.3	6.5	7.2	7	7	6.5	5.9	5
Core profitability	4.1	5	5.3	5.2	4.7	4.1	5.2	4	8.3	6.5	7.2	7	7	6.5	5.9	5
Cost efficiency	45.9	46.7	69.2	61	91.4	66.8	62.9	74.4	37.6	57.5	55.7	59.4	62.4	67.8	67.3	73.7
	Foreign Banks								Foreign Banks							
ROAA - %	0.4	0.8	0.8	1	0.9	-0.3	-1.2	0.4	4.2	5.7	4.4	2.3	-0.2	1.9	1.7	1.4
Loan Loss Provisions/TA %	0.9	0.5	0.4	0.3	0.3	0.8	0.7	0.8	3.4	2.1		0.5	0.3	0.1	0.4	0.3
Net income/TA %	0.4	0.8	0.7	0.8	0.8	-0.3	-1.4	0.3	4.2	4.7	3.7	1.9	-0.4	1.5	1.4	1.2
Operating profits/TA %	4.4	4.7	4	3.4	3.1	3	3.4	3.3	9.5	11	10.6	8.7	6.8	6.1	8	5.6
Core profitability	4.4	4.7	4	3.4	3.1	3	3.4	3.3	9.5	11	10.6	8.7	6.8	6.1	8	5.6
Cost efficiency	74.4	73.8	75.2	63.9	60.8	60.2	67.1	73.4	19	24.2	38.5	51.7	94.6	71.4	65.2	67.8

Source: Own calculations based on BankScope data.

All ratios indicate that Czech banks' profitability is low. Since 1993 the average return on assets of the Czech banks has been negative. During the sample period core profitability - operating profits before provisions over total assets - though stable, decreased from +5% to around +4%. In part, reduced average net interest margin and increasing loan loss provisions between 1994 and 1996 contributed to this trend. In 1996 loan loss provisions induced a drop in net income, bringing it to a record low of -9%. The interest in studying costs and efficiency in the context of Czech banking sector is therefore driven by the need of the sector to increase its profitability. The ability to improve cost efficiency is important in the Czech banking sector. While the cost efficiency²⁸⁶ figures for foreign banks are decreasing, domestic banks experience an increasing trend.

Table A 6-2-1 displays descriptive statistics of all the variables used in our efficiency models and regression estimates for sample Czech banks. The columns provide combined as well as yearly estimates of key assets, liability, income, expenditure ratios in respect to total assets and other related variables for the pooled sample. On average, the sample banks were granting fewer short-term loans, resulting in an increase in their liquid assets. While overall investment increased steadily there was an increase in financial investments only to the end of 1995. Across sample years there were no significant changes in the average growth of assets. While short-term loans declined retail deposits remained relatively similar across the sample years. Capital backing of the banks was strong in 1994 and 1995, worsening considerably in 1996 and improving to some extent in 1997 and subsequent years. Over the years there has been a substantial increase in total cost, most of it due to high interest expenses. Consolidation efforts pursuant to several bank failures in 1996 led to a decrease in non-interest expenses in consequent years. The performance proxy ratio, return on assets, was negative between 1995 and 1998, declining substantially by 1996 to -3.92. Return on equity shows a constant decline since 1995. The percentage of

²⁸⁶ Overheads as a proportion of operating profits before provisions.

foreign bank involvement in the domestic banking market increased from 7.2% in 1993 to 27.2% in 1999.²⁸⁷

A further factor which exerts pressure on Czech banks to increase profitability is associated with investment privatisation funds (IPFs). The imprudent developments which emerged with the establishment of IPFs indicate that there would be pressure from shareholders on banks in the future to improve performance.

The Czech government is also putting pressure on banks to improve profitability. Within the Consolidation Programme several measures were adopted to consolidate the banking system. First, in order to improve banks' profitability the Government injected capital into the ailing banks but on condition of repayment. Second, pressure on the Czech banking system to increase profits is also coming from an increase in the reserve requirement. In the second stage, starting from mid-1996 the CNB conducted a tight and restrictive monetary policy. CNB pursued a money supply target rate of 13 - 17% in 1996 and of 8-12% in 1997. A strain was put on the banking sector when the minimum reserve requirement of about 3% increased to approximately 12%, meaning that 12% of the deposits had to be placed with the CNB. Third, allowing bank failures indicated that the Government will not always act as a lender of last resort, which further increased the awareness in banks of the need to improve profitability.

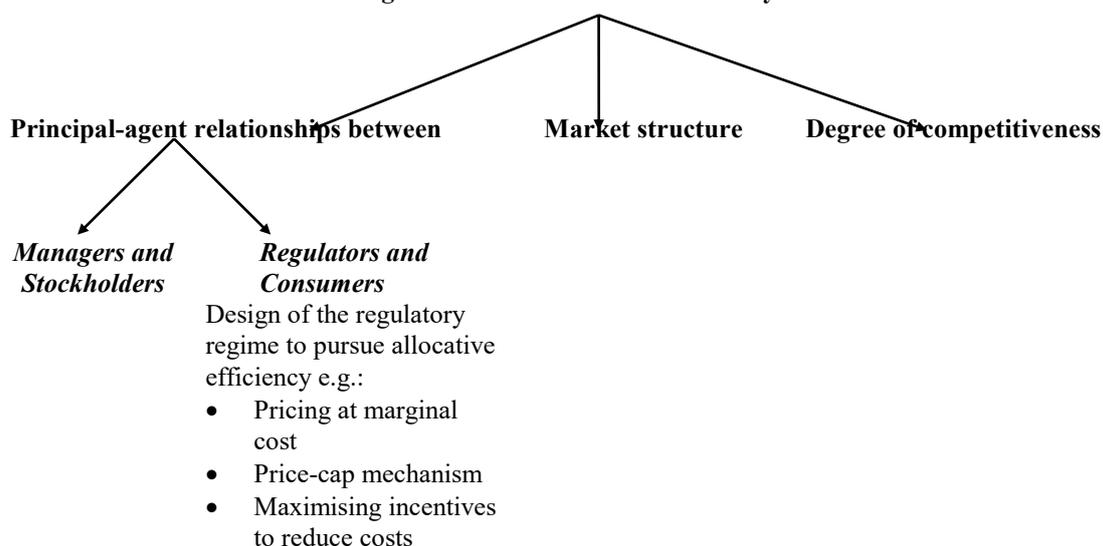
6.2.2 Managerial deficiencies in TEs

Nonmaximising behaviour is the key to the idea of X-efficiency.²⁸⁸ Lack of pressure from the external environment on managers diminishes their concern with the constraints operating on the organisation, which in turn reduces the effort expended. The inevitable consequence is higher costs, i.e. X-inefficiency.

²⁸⁷ Based on the ratio of assets of banks where foreigners own more than 50% of total equity to total bank assets foreign ownership in the Czech banking system has increased from 5.8% in 1994 to 49.3% in 1999 (as of December). "The Role of Foreign Banks in Emerging Markets", IMF International capital markets 2000, Part VI, p.153.

²⁸⁸ Leibenstein, H. (1978).

Figure 6-2-2: Sources of X-efficiency



There are several possible sources for the failure of the environmental pressures on managers to invest maximal effort (Figure 6-2-2). Difficulties in the principal-agent relationships between the utility managers and stockholders and between the regulators and the consumers are important sources of X-inefficiency.²⁸⁹ The degree of competitiveness in the industry and the market structure are among further sources of possible X-inefficiency in as much as these are associated with constraints from the operating environment. Each of these possible sources of X-inefficiency will be addressed with respect to transition economies in what follows.

(a) The Regulatory framework

Difficulties of principal agent relationship between the regulators and utility managers are likely to be a significant source of X-inefficiency in transition economies. In a transitional environment where regulatory and supervisory deficiencies are severe and where factors beyond the control of management are significant (such as macroeconomic instability), it may be difficult to detect inefficiency due to poor managerial performance. This may give bank managers moral hazard incentives. In developed market economies such problems are alleviated by maximising the

²⁸⁹ Leibenstein, H. (1975).

incentives to reduce costs or by instructing managers to pursue allocative efficiency, for instance, by pricing at marginal cost.

(b) Principal-agent relationship between bank managers and stockholders

Principal-agent relations between bank managers and stockholders are clearly critical in determining the extent to which constraints from the operating environment may force decision-makers to pursue allocative efficiency. A bank may face agency problems due to different preferences among its shareholders and managers for the employment of firm's resources. Shareholders would like to maximise the value of the firm's equity. Managers for their part are interested in maximising their own personal benefit by maximising the total value of the firm. However, although the management is interested in maximising the total value of the firm, it is quite possible that the funds are not invested as they should be but are partly used for perquisites. In transition economies the lack of market-type corporate control structures within banks, as discussed in previous chapters, is likely to be an important factor which may weaken constraints upon decision-makers to pursue allocative efficiency.

(c) Competitiveness

A further source of environmental pressure on a decision-maker to pursue allocative efficiency is competition. The influence of bank market structure on the performance of financial institutions can be significant.²⁹⁰ According to the structure-performance hypothesis, the degree of competition among firms in a market is influenced by the degree of concentration of their output among a few relatively large firms, since a more highly concentrated market structure is assumed to be conducive to more effective collusion.

The market structure of the banking systems in transition economies became mainly characterised by the emergence of a few big banks carved out of the

²⁹⁰ Heggstad, A. A. and J. J. Mingo (1976). See also Gilbert, A. (1984) for a survey of bank market structure and competition.

monobanking system, several newly established small size domestic commercial banks and foreign subsidiaries. After the partition of the monobank an oligopolistic structure emerged where SOBs were likely to retain their monopoly power in savings, foreign trade and investment banking. Overall, SOBs remained highly involved in bureaucracy and slow to become profit-oriented. There are several reasons for this outcome. One is that, due to political reasons, privatisation proved to be slow. A second is that the further entry of new local banks into the financial markets did not necessarily constitute effective competition to the bigger banks. This was probably due to the smaller size of the new entrants and lack of extensive branch networks. In general, smaller banks were at a disadvantage in as much as these not only had to attract deposits by paying the much lower benchmark price offered by big banks but had also to borrow at much higher funding rates from the interbank market. Furthermore, considering the fact that many of the smaller, “private” banks were created by their owners to provide finance to own companies, i.e. as a response to credit rationing, and fraudulent activity, it can plausibly be argued that competition and hence efficiency was unlikely to be a driving factor for both managers and owners. As regards competition with foreign banks, two factors were likely to impede domestic banks from competing head on with financially and technologically sophisticated foreign banks. First, domestic banks needed to undergo a learning process. This was not an easy task, especially because operating in a risky transitional environment requires much sensitivity and skill even from bankers with long-term experience in developed economies. Second, the lack of funds to invest in the most efficient and sophisticated system available impeded domestic banks from competing effectively with the technologically more advanced foreign competitors.

A prosperous enterprise sector and competition for borrowers are also critical in determining the extent to which constraints from the operating environment may impel decision-makers to pursue allocative efficiency. However, high amounts of non-performing loans partly led to credit rationing which additionally alleviated the intensity of the environmental pressure on a decision-maker. In Poland, for instance,

banks overextended credits to inefficient SOEs but often postponed the provision of new finance to private firms until these had a sufficiently long track record.²⁹¹ Overextending credits to inefficient SOEs and the lack of credit or too-expensive credit which was available for efficient new private firms were likely to shield banks from the pressures associated with the external environment which call forth maximal effort.

6.3 Relevant literature

A good deal of research has been done on the degree of X-efficiencies and the factors which impinge upon it. Most of this research is focused on the United States and only a few are on transition economies, mainly due to lack of data. Table 6-2 gives a brief summary of some of these research findings.

²⁹¹ Pawlowska, A. (1997).

Table 6-2: Studies of X-efficiencies in Banking

<i>Authors</i>	<i>Country</i>	<i>Type of data</i>	<i>Period</i>	<i>Statistical/Econometric Methodology</i>
1. Hasan and Marton (2000).	Hungary	Time series and pooled	1993-97	Fourier-flexible functional form SFA*
Results obtained: Banks with no foreign involvement reported higher inefficiency (25% and 30%) than their foreign counterparts in both cost and profit (21% and 25%) categories.				
2. Kraft and Tirtiroglu (1998).	Croatia	Panel data	1994-95	Three equations, comprising a translog cost function and two share equations are estimated simultaneously using the Iterative SUR technique. SFA
Results obtained: The degree of X-efficiency in the basic estimate ranged from 54.7% to 87.9%. Of the 43 banks, 27 had efficiency levels above 80%. Among the 10 banks with the highest X-efficiency, only two are new private banks while three are privatised banks, three are old SOBs, and two are new state banks. The poor X-efficiency of new banks may be due to a start-up problem. The new private sector as a whole showed an improvement from 71.4% efficiency in 1994 to 76.6% in 1995 in the basic estimate. The relatively satisfactory X-efficiency performance of old banks may be the result of measures taken to meet the anticipated competitive threat posed by both new banks and restructuring and privatising old banks.				
3. DeYoung, Robert (1998).	USA	Time series	1990- 93	Translog cost function Thick cost frontier analysis
Results obtained: Management quality is reflected in cost efficiency: in 1991 and 1992 estimated unit costs in poorly managed banks averaged about 29% higher than unit costs at well-managed banks.				
4. Berger and DeYoung (1997).	USA	Panel data	1985-94	Fourier-flexible functional form SFA
Results obtained: The average bank is measured to be about 92% efficient over the entire sample period; increases in non-performing loans Granger-cause decreases in cost efficiency (bad luck hypothesis); poor management practices increased cost inefficiency (bad management hypothesis); the amount of resources allocated to underwriting and monitoring loans affects both loan quality and measured cost efficiency (skipping hypothesis); on average, thinly capitalized banks take increased portfolio risk, which results in higher levels of problem loans in the future (moral hazard hypothesis).				
5. Berger and Mester (1997).	USA	Panel data	1990-95	Fourier-flexible functional form DFA
Results obtained: The mean cost efficiency is 86.8%. This suggests that 13.2% of costs are wasted on average relative to a best-practice firm. Cost efficiency during the 1980s was typically about 80%. Profit efficiency is 54.9% (based on standard profit efficiency concept) and 46.3% (based on alternative profit efficiency concept).				

6. Bauer and Berger, et al (1998).	USA	Single period and panel data	1977-88	Translog cost function DEA, SFA, TFA, DFA
<p>Results obtained: The mean efficiency from the SFA, TFA and DFA parametric models averaged 83%, while mean efficiency averaged only 30% in case of DEA models. It is not necessary to have a consensus on which is the single best frontier approach for measuring efficiency for the efficiencies to be useful for regulatory analysis. Instead, they propose six consistency conditions that efficiency measures derived from the various approaches should meet to be most useful for regulatory or other decision makers. The efficiency estimates derived from the different approaches should be consistent in their efficiency levels, rankings, and identification of best and worst firms, consistent over time and with competitive conditions in the market, and consistent with standard nonfrontier measures of performance. If the six consistency conditions are met for two or more approaches, regulators can be more confident about the conclusions drawn.</p>				
7. Berger, Leusner and Mingo (1997).	USA	Panel data	1989-91	Fourier-flexible functional form DFA
<p>Results obtained: X-inefficiencies are over 20% of operating costs. The findings discard the assumption that mergers between large banks would bring about large cost efficiency gains. The results suggest that at least with regard to branching costs, large efficiency gains may be very difficult to achieve. The data presented suggest that local branch management is important in determining branch efficiency, limiting the role of bank-level management. Hence it seems unlikely that out-of-state managers will be able to lower these costs substantially.</p>				
8. Chang, Hasan and Hunter (1998).	USA	Single period and Panel data	1984-89	Translog cost function SFA
<p>Results obtained: Both US owned multinational banks (USMNBs) and foreign owned multinational banks (FOMNBs) produce at a cost that is over 20% higher than necessary. However, the average inefficiency score of the USMNBs (21%) was significantly lower than the average inefficiency score posted by the FOMNBs (27%). The most inefficient banks were FOMNBs with foreign ownership exceeding 50%. Thus it appears that the larger the foreign presence in terms of ownership, the more inefficient the bank. This could be the result of difficulties encountered by FOMNBs in adapting customer and service delivery systems to the US market.</p> <p>OLS regression were estimated to examine the relationship between firm inefficiency and organizational structure among the multinational banking institutions. FOMNBs were less efficient than their USMNB counterparts; banks with larger foreign ownership tend to be less efficient. Overall, the empirical analysis suggests that organization structure plays a key role. Large banks in a holding company network carrying fewer foreign assets tend to be significantly more efficient.</p>				
9. Kaparakis and Miller, et al (1994).	USA	Panel data	1986	Translog cost function SFA
<p>Results obtained: First, average inefficiency rises with bank size, except for banks between \$5 and \$10 bn. For banks over \$10 bn in assets, the average inefficiency measure is 17%, which is more than 70% higher than the average for all banks combined (i.e. 9.8%). Second, the largest banks are almost twice as inefficient as the most efficient group with assets between \$75 and \$150 mn, where the inefficiency measure is only 9%. Finally, the four largest groups, with assets in excess of \$1 bn, have the highest inefficiencies of all groups.</p>				

Note: Berger and Humphrey provide an extensive list of studies of the efficiency of depository institutions in various countries.²⁹² A further summary of bank frontier studies is given by Kaparakis, Miller et al.²⁹³;

* For details see section 6.6.1 and 6.6.2.

Hasan and Marton examined the X-inefficiencies of the Hungarian banking system.²⁹⁴

Their findings show that banks with no foreign involvement reported higher inefficiency (25% and 30%) than their foreign counterparts in both cost and profit categories (21% and 25%). The policy implications of this finding would be to

²⁹² Berger A. N. and D.B. Humphrey (1997).

²⁹³ Kaparakis, E.I., S.M. Miller et al. (1994, p. 879).

²⁹⁴ Hasan, I. and K. Marton (2000).

promote mergers between foreign and domestic entities. Studies in the US, however, recommend the opposite for two reasons. Firstly, inefficiency seems to rise with size. Kaparakis, Miller et al. studied the efficiency of large-sized US banks.²⁹⁵ According to their findings average inefficiency rises with bank size, except for banks between \$5 and \$10 bn. The four largest groups, with assets in excess of \$1 bn, have the highest inefficiencies of all groups. Secondly, foreign banks do not always perform well. The empirical research by Chang, Hasan and Hunter, for instance, showed that the average inefficiency score of the US-owned multinational banks (USMNBs) (21%) was significantly lower than the average inefficiency score, (27%), posted by the foreign owned multinational banks (FOMNBs).²⁹⁶ The most inefficient banks were FOMNBs with foreign ownership exceeding 50%. It appeared that the larger the foreign presence in terms of ownership, the more inefficient the bank. The key role in the underlying cause of the comparatively lower performance of the FOMNBs was played by organisation structure. Large banks in a holding company network carrying fewer foreign assets tended to be significantly more efficient. One study related to transition economies known to us comes also to the conclusion that domestic banks were more efficient. The study of Kraft and Tirtiroglu of the Croatian banking sector shows that new banks were most X-inefficient as opposed to old privatised banks or old SOBs.²⁹⁷

DeYoung finds that management quality is reflected in cost efficiency: in 1991 and 1992 estimated unit costs in poorly managed US banks averaged about 29% higher than unit costs in well-managed banks.²⁹⁸ This implies that management is a crucial source of efficiency in financial institutions. The X-efficiencies study of US branches by Berger, Leusner and Mingo showed that it is unlikely that out-of-state managers will be able to lower the estimated X-inefficiencies of over 20% of operating costs.²⁹⁹ Instead local branch management was found to be important in determining branch efficiency, limiting the role of bank-level management.

²⁹⁵ Kaparakis, E.I., S. M. Miller et al. (1994).

²⁹⁶ Chang, C. E., I. Hasan, and W. Hunter (1998).

²⁹⁷ Kraft, E. and D. Tirtiroglu (1998).

²⁹⁸ DeYoung, R. (1998).

²⁹⁹ Berger, A. N., J. H. Leusner and J. J. Mingo (1997).

Notwithstanding this finding, the X-efficiencies of banks may not always be due to superior management expertise. The studies show that foreign banks usually experience excessive costs associated with transferring their own comparative advantages or due to the idiosyncratic features of the local customer and services delivery systems. The low performance of FOMNBs could be the result of difficulties encountered by FOMNBs in adapting customer and service delivery systems to the US market. Similarly, the performance of banks in transition economies may be influenced by certain measures taken by the governments to overcome the transition-specific problems. As concluded by Kraft and Tirtiroglu, the relatively satisfactory X-efficiency performance of old banks in Croatia may be the result of measures taken to meet the anticipated competitive threat posed by both new banks and restructuring and privatising old banks.³⁰⁰

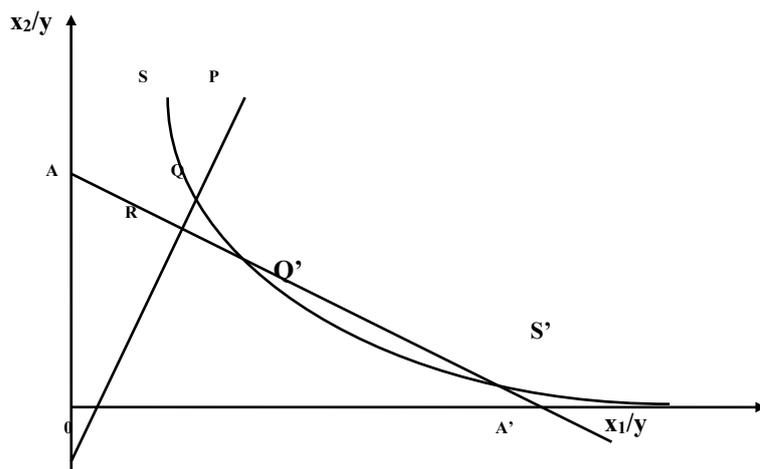
Overall, it becomes evident that findings differ between countries - and hence policy implications. This points to the importance of both measuring the bank efficiencies of each country individually and the factors which impinge upon efficiency. Until recently, lack of accounting data was restricting researchers on the performance of banks in transition economies to ratio analysis. The present analysis is one of the first to investigate the X-inefficiencies of Czech banks applying frontier techniques, thereby extending the existing literature in important respects. It trails the cost and profit efficiency of the Czech banks by using X-efficiency analysis which presents an important policy device to improve profitability.

6.4 The theoretical background of efficiency measurement

Figure 6-4 depicts a production function $y = y(x_1, x_2)$, which exhibits constant returns to scale.

³⁰⁰ Kraft, E. and D. Tirtiroglu (1998).

Figure 6-4: Technical and Allocative Efficiencies



The isoquant of the fully efficient firm SS' permits the measurement of technical efficiency. Isoquant SS' corresponds to one unit of output and the isocost line AA' is tangential to SS' .³⁰¹ A firm operating at P and producing an amount 1 of output is technically inefficient, since it is not maximising output, given the technology. The technical efficiency (TE) of this firm can be expressed by the ratio OQ/OP . This is the proportional reduction in all inputs (i.e. movement onto the efficient isoquant) which could be theoretically achieved without any reduction in output. The technical efficiency ratio for the firm at point P will then be less than unity; $TE \in (0,1]$. A firm at Q is technically efficient since it already lies on the efficient isoquant. The technical efficiency ratio of the firm at Q is OQ/OQ or unity. However, a firm at Q is not allocatively efficient, since it is not using the technology which minimises cost, as it would at Q' - the allocatively and technically efficient point. If the input price ratio AA' is known, then allocative efficiency (AE) at point P is the ratio OR/OQ , where $AE \in (0,1]$. The distance RQ is the reduction in production costs which would occur if production occurred at Q' , rather than Q . Hence, the total economic (cost) or the whole efficiency (WE) can be measured by:

$$WE = TE * AE = OQ/OP * OR/OQ = OR/OP,$$

(1)

³⁰¹ See Lee, J. (1986, p.84); Worthington, A. C. (1998, p. 461); Worthington, A. C. (2000, p. 77); Scarfiglieri, G. (1998, pp. 6-7).

where $WE \in (0,1]$, with the cost reduction achievable being the distance RP. This ratio gives the proportion of realised costs which are necessary to produce one unit of output, given the technology and input prices.

These efficiency measures assume that the production function of the fully efficient firm is known. As this is usually not the case, the efficient isoquant must be estimated using sample data. Farrell (1957) suggested the use of either: (i) a parametric function, such as the Cobb-Douglas form, fitted to the data, such that no observed point should lie to the left or below it (known as the econometric approach to the construction of frontiers); or (ii) a non-parametric piecewise-linear convex isoquant constructed, again such that no observed point should lie to the left or below it (known as the mathematical programming approach). These approaches use different techniques to envelop the observed data and therefore make different accommodations for random noise and for flexibility in the structure of the production technology.

First, the mathematical programming approach seeks to evaluate the efficiency of an organisation relative to other organisations in the same industry. Second, and in contrast to the non-parametric approach, the econometric measurement of efficiency or measuring efficiency purely from managerial qualifications is undertaken mainly through the specification of a particular functional form for the cost (or production) function, whereby inefficiency or the extent of suboptimal utilisation of resources by banks is identified with disturbances (or error term) in a regression model (or in reference to an idealised frontier isoquant).³⁰² The distance of an observation from the corresponding point on the frontier is interpreted as a measure of the inefficiency of the firm. A firm may not be on the frontier, firstly, because of reasons beyond the control of management, i.e. random effects (or statistical noise), including econometric errors (such as misspecification of the production function and measurement error), and secondly, due to technical and allocative efficiency. Therefore, several kinds of frontiers, with a double error term - as some of the random

³⁰² This was first suggested by Farrell, M.J. (1957).

errors might be attributed to true randomness - have been proposed. The equation to be estimated for the calculation of inefficiencies is usually of this kind:

$$C = C(y, w) \cdot \exp(e) = C(y, w) \cdot \exp(u + v)$$

(2)

where $C = C(y, w)$ is the cost function of a multiproduct firm; y is the vector of outputs and w of input prices; and the random variable e , or the composite error term, is the sum of two components, u (inefficiency) and v (random error). Several approaches have been developed which seek to take external factors into account when estimating the efficiency of firms (see 6.2). The structural parameters in the model can be estimated by the most efficient estimator available, one of ordinary least squares, generalised least squares or maximum likelihood.³⁰³

6.5 The Data

The data used in our study comprises the financial statements of 30 banks, notably commercial banks, savings banks, medium and long term credit banks with various types of owners in the Czech Republic recorded in the database BankScope for the years 1992-1999, totalling 179 observations. The number of banks during each sample year varies considerably, on the one hand due to the new entry of several banks during the initial phases of the transition, and on the other to the failure or mergers of several new entrants towards the end of the period studied. Missing data was supplemented either by using annual reports or direct inquiry at the bank in question. Table A 6-5a gives a brief summary of the characteristics of the sample of Czech banks used during the data period.

Figures 6-5-1 to 6-5-7 present (also see Table A 6-5b) summary data on the variables used in estimating the cost and profit function for the three categories of

³⁰³ Greene, W. H. (1993, p. 71 and p. 74).

banking firms. Overall, the price of borrowed funds shows an increasing trend in 1992 up through 1997 and decreases from then onwards. In 1994-1998 the input prices paid by NEBs were higher than that of SOBs and foreign banks. In 1992-96 foreign banks paid least for borrowed funds in 1992-96, but from 1997 onwards their competitive advantage was eroded in favour of the SOBs.

Figure 6-5-1: Price of Borrowed Funds

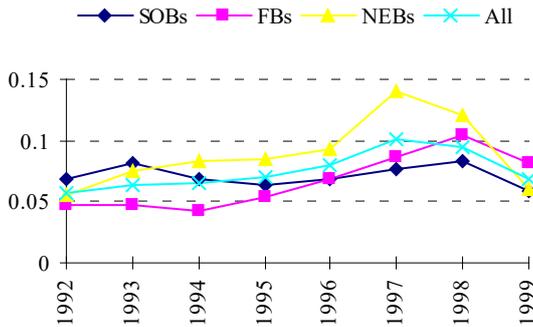
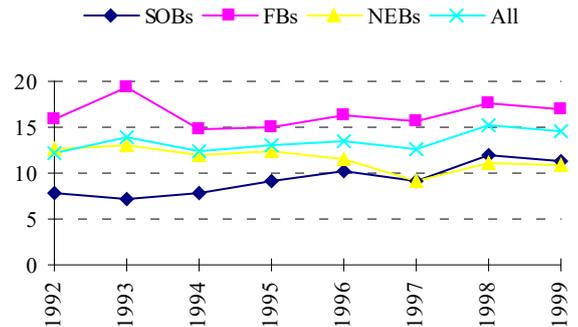


Figure 6-5-2: Price of Labor



Source: Own calculations based on BankScope data.

Figure 6-5-3: Total Loans (as % of Assets)

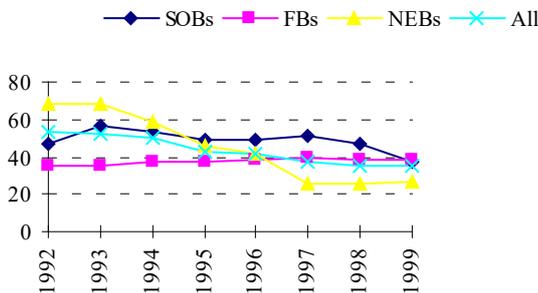
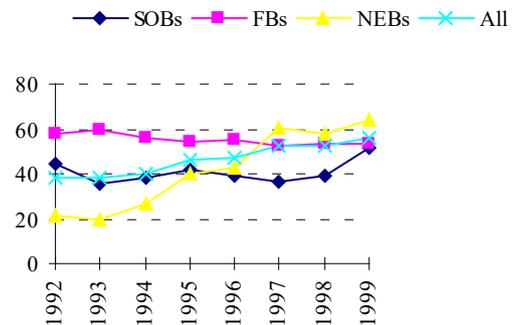


Figure 6-5-4: Total Investment (as % of Assets)



Source: Own calculations based on BankScope data.

Figure 6-5-5: Total Borrowed Funds (as % of Assets)

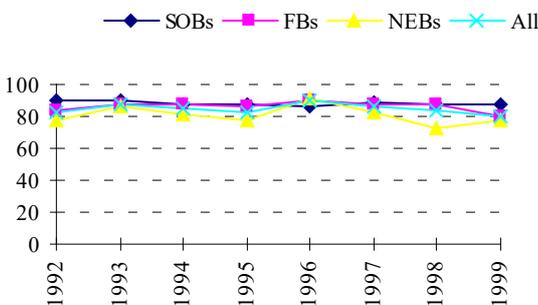
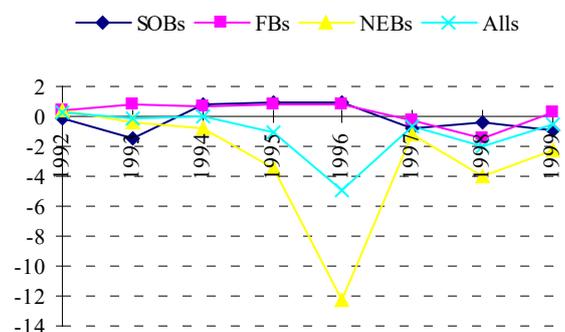
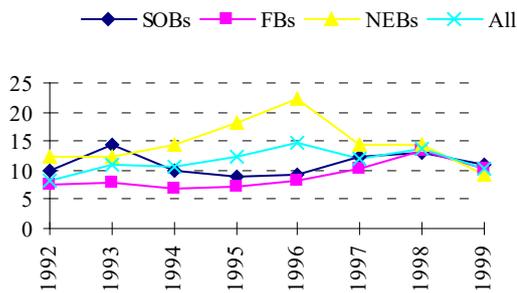


Figure 6-5-6: Net Income (as % of Assets)



Source: Own calculations based on BankScope data.

Figure 6-5-7: Total Cost (as % of Assets)



Source: Own calculations based on BankScope data.

The price of labour paid by foreign banks was observed to be significantly higher, on average, than that paid by domestic banks. In 1992-97 SOBs paid least for banking staff, and from 1997 onwards SOBs and NEBs paid almost the same price for labour.

On average, total loans granted as a percentage of assets show a decreasing trend in 1992-99. In 1992-94, loans were granted most by NEBs but in 1997-99 least. Foreign banks' lending remained relatively constant. In 1992-96 foreign banks were granting less in loans than other types of banks. In 1995-98 loans made up a higher share of total assets in SOBs than in NEBs and foreign banks.

Total investment shows, on average, an increasing trend during the sample period. In 1992-96, foreign banks were investing the highest share of total assets. While investment activity in SOBs and foreign banks remained relatively constant during 1992-99, NEBs show a continuous increase in investment activity. On average, total borrowed funds remained around 85% of total assets. In 1997-99, NEBs borrowed least.

As regards the net income of banks studied, it can be observed that NEBs were, on average, in loss throughout the period studied, except in 1992, and in 1994-99 this category of banks was least profitable. Foreign banks recorded a loss only in 1997-98, but, on average, performed better than SOBs and NEBs in 1993, 1997 and 1999. SOBs were incurring the highest loss in 1992-93, but in 1994-96, compared

with the other two types of banks, their net income made a higher percentage of total assets than that of NEBs and foreign banks.

In 1990-99, total cost made up on average 11.8% of total assets of the sample banks. Looking at annual developments one can observe that total cost over total assets increased from 8.2% in 1992 to a peak of 14.6% in 1996. In 1997, 1998 and 1999 total cost made up 12%, 13.6% and 10.1% of total assets, respectively. In 1992-98, apart from 1993, NEBs recorded on average higher cost as a percentage of assets than did SOBs and foreign banks. In 1992-97 foreign banks had lowest costs, whereas in 1998 and 1999 SOBs and NEBs could manage to be least cost-inefficient, respectively.

The higher price of borrowing and higher price of labour in NEBs in 1994-98 and 1992-97, respectively, implies managerial inefficiencies. This is especially the case if one considers the higher share of total cost in NEBs in 1994-98. Similarly, higher input prices for labour in foreign banks relative to domestic banks throughout the period studied, as well as the higher price of borrowing in 1997-99 is suggestive of managerial inefficiencies also in foreign banks. However, the total cost for foreign banks in 1992-97 was significantly lower than that for domestic banks. These should be kept in mind when the model and the results are presented.

6.6 Methods of estimating X-efficiencies

6.6.1 Difficulties with the functional form

Several proposals have been put forward for ways to evaluate the frontier (i.e. error term). As briefly alluded to in section 6.4, these are categorised into two statistical techniques of inference, namely, parametric and nonparametric techniques³⁰⁴, which differ in their assumptions about the way to distinguish true randomness from X-efficiencies. While non-parametric techniques do not provide for random error,

³⁰⁴ Non-parametric techniques are also known as “distribution-free” techniques.

parametric techniques impose functional form which describes the productive process of a bank. The resulting efficiency estimates are more accurate the closer the specified functional form approximates to the true underlying cost (or production) function.³⁰⁵ However, the choice of an explicit functional form for the production or cost function is not straightforward. One difficulty is that imposing functional form requires assumptions to be made and this may cause misspecification errors.

The multivariate total cost function (C) of a bank is the sum of the quantities of the various inputs employed, $X=(x_1,x_2,\dots,x_n)$, multiplied by their factor prices, $P=(p_1,p_2,\dots,p_n)$:

$$C = p_1L+p_2K,$$

(3)

where p_1 and p_2 are the input prices for labour and capital. The relation between output and inputs might be best described by a multiplicative function of the form:

$$q = a_0x_1^{b_1}x_2^{b_2}\dots x_n^{b_n},$$

(4)

which is known as the Cobb-Douglas production function. The Cobb-Douglas specification, or log linear cost relationship, i.e. the direct approach, is considered to be more restrictive. This is because the log linear specification of the cost function becomes difficult to interpret if more output measures are added.³⁰⁶ This is problematic in particular because bank activities have a multiproduct nature. The log linear specification of the cost function is also limited to allow for a u-shaped curve and hence the possibility of changing scale economies over the entire range of output.

The translog cost function - which can be written in a simplified form as:

$$\log C = a + \beta \log Y + \delta \frac{1}{2} (\log Y)^2$$

(5)

³⁰⁵ Drake, L. (2000).

³⁰⁶ Davis, K.T. and M.K. Lewis (1982, p. 670).

- addresses both deficiencies. Given that the translog cost function, i.e. the dual approach, has the properties of being a flexible functional form, it maintains as general a specified functional form as possible and provides a second order approximation to any underlying function providing accurate estimates of scale economies.³⁰⁷ It makes it possible to bypass the problem of multicollinearity - inherent in the direct approach - the presence of which may lead to an improper selection of input variables which in turn may cause the explanatory variable matrix to be correlated with the error vector.³⁰⁸

The commonly specified translog form is a local approximation which performs well for banks close to the sample means, but can perform poorly for particularly small or large banks. As the technology of small and large banks differs using the same functional form, in particular a standard translog functional form, for both sizes of bank may not bring the desired outcome. Particularly in banking, however, scale and product mix are often far from the mean. To enhance the flexibility of the translog functional form, Berger et al. suggest the Fourier- flexible functional form, which is a cost function with a global approximation.³⁰⁹ The performance of small, medium, and large banks can be directly compared by applying the Fourier flexible form which combines a standard translog functional form with the non-parametric Fourier functional form. This specification includes trigonometric terms for transformations of the translog variables so that the function globally approximates the underlying profit or cost function over the entire range of data.³¹⁰ In other words, Fourier trigonometric terms are considered simultaneously with a translog specification to reduce the number of terms needed for a close approximation.

A further difficulty of specifying a cost (or production) function is determining the output of banks. In general two theories may be distinguished. One strand of knowledge is based on the view that loans are the end product because the financial

³⁰⁷ Drake, L. (2000).

³⁰⁸ Fuss, M., D. McFadden and Y. Mundlak (1978).

³⁰⁹ Berger, A. N. et al. (1997).

³¹⁰ Hasan, I. and K. Marton (2000, p. 15).

firm uses deposits merely as an input to produce a flow of services to its debtors, represented by the volume of loans.³¹¹ Another strand of knowledge looks at deposits produced as an output of the act of making loans.³¹² Humphrey identifies two general classes of approach: the production approach (which focuses upon the number of accounts and transactions on accounts) and the intermediation approach (among other things, loan volume as a measure of output).³¹³

Besides different interpretations of bank output there are different measures of costs. The provision of financial services requires institutions both to incur interest costs and to incur expenses for using real resource inputs such as buildings, staff and equipment. For the intermediation approach, operating as well as interest costs appear to be the more appropriate measure of the costs of producing loans. For the production approach, operating costs alone seem to be more appropriate.

6.6.2 Parametric Methods of Estimating X-efficiencies

As already alluded to above, once the composite error term is obtained parametric or non-parametric frontier techniques are applied to estimate the extent of X-efficiencies. Parametric approaches comprise the Stochastic Frontier Approach (SFA) or the Econometric Frontier Approach (EFA), the Distribution Free Approach (DFA), and the Thick Frontier Approach, whereas the non-parametric technique comprises only Data Envelopment Analysis (DEA) and the Free Disposal Hull (FDH) technique.

³¹¹ Sealey, C.W. and J.T. Lindley (1977).

³¹² Pesek, B.P. (1970). See also Towey, R.E. (1974).

³¹³ Humphrey, D.B. (1984).

Table 6-3: Frontier techniques

Parametric Frontiers (stochastic methods)	Non-parametric Frontiers (non-stochastic or deterministic methods)
Stochastic Frontier Approach (SFA) or Econometric Frontier Approach (EFA)	Data Envelopment Analysis (DEA)
Distribution-Free Approach (DFA)	Free Disposal Hull Approach (FDH)
Thick Frontier Approach (TFA)	

Stochastic Frontier Approach

The SFA (also termed the econometric frontier approach, EFA) is suggested by Aigner, Lovell and Schmidt.³¹⁴ The problems associated with deterministic frontiers are alleviated by stochastic frontiers which explicitly consider the stochastic properties of the data. Stochastic Frontier models avoid these problems by decomposing the composite error term into two parts: the phenomena which is due to inefficiency beyond the control of management is attributed to random shocks or statistical noise v_{it} which is assumed to be symmetrically distributed around a zero mean. In other words, the component v_i is distributed as a normal random variable. The remaining errors, u_{it} , are assumed to capture firm-specific effects, i.e. X-inefficiency, and are assumed to follow a (positive) truncated normal distribution (i.e. u is distributed as the absolute value of a normal random variable). The assumption for this is that inefficiencies cannot be negative. Both variables are independent, that is:

$$v_i \approx N(0, \sigma_v^2) \qquad u_{it} \approx |N(0, \sigma_u^2)|$$

In other words, u_{it} represents the deviations above the minimum cost frontier. Hence the frontier can shift from one observation to the next, being random rather than exact.

The cost efficiency variable X-EFF is constructed as follows. First, the expected value of the inefficiency term $\ln u$ is estimated using the so-called Jondrow

³¹⁴ Aigner, L. and P. Schmidt (1977).

estimator,³¹⁵ which gives the mean of \mathbf{u} conditional on the information available in \mathbf{e} , for each observation. The Jondrow estimator is defined as:

$$U_i = [\sigma\lambda / (1 + \lambda^2)] [-\phi(\varepsilon_i\lambda/\sigma)/\Phi(\varepsilon_i\lambda/\sigma) + (\varepsilon_i\lambda/\sigma)] \quad (6)$$

where $\sigma = \sigma_v^2 + \sigma_u^2$, $\lambda = \sigma_u^2 / (\sigma_v^2 + \sigma_u^2)$. ϕ is the standard normal density function, and Φ the cumulative normal density function.³¹⁶ The ratio is between the variances of the two terms - expressed with λ - which basically expresses the relative importance of the two components.³¹⁷

For bank i in year t , X-EFF $_{i,t}$ equals $\mathbf{u}_{min,t}/\mathbf{u}_{i,t}$, the estimated value of \mathbf{u} for the most efficient bank (i.e. the minimum value achieved by the most efficient, or best-practice bank in the sample) at time t divided by the estimated value of \mathbf{u} for bank i , where $\mathbf{u} = \mathbf{e}^{\ln \mathbf{u}}$. The ratio X-EFF $_{i,t} = \mathbf{u}_{min,t}/\mathbf{u}_{i,t}$ is then interpreted as the ratio of the lowest predicted costs to the predicted costs for bank i for any given Y (output quantity) and \mathbf{w} (input price). For the calculation of profit efficiency the terms are reversed. In this case for bank i in year t , X-EFF $_i$ is $\mathbf{u}_{i,t}/\mathbf{u}_{max,t}$. X-efficiency ranges over (0,1], higher numbers indicating greater efficiency. X-inefficiency (X-INEFF) is given by 1-XEFF.

One criticism of previous studies of the estimation of production and/or cost frontiers and the measurement of efficiency was their inability to consider banks of different size in their sample.³¹⁸ The Stochastic Frontier approach can provide inefficiency estimates for banks of different sizes and thus allow a direct comparison of their performance.³¹⁹ Notwithstanding the advantages of this approach, it is worth noting that, firstly, this technique imposes essentially arbitrary assumptions concerning the distribution of the X-efficiency error term, and, secondly, the

³¹⁵ Jondrow, J. and C.A. K. Lovell, et al. (1982).

³¹⁶ See for further details Battese, G. E. and T.J. Coelli (1993).

³¹⁷ Greene, W.H. (1993, p. 77).

³¹⁸ Berger, A.N. and D.B. Humphrey (1991) employed a methodology which provided a remedy to the failure of earlier studies to consider banks of different size categories simultaneously in their estimations of technical and/or allocative inefficiencies.

³¹⁹ Details in the methodology section below.

specification of the error term as the sum of only two components does not enable us to separate the technical and the allocative efficiency.³²⁰ The latter problem has been solved only in some recent works by Ferrier and Lovell³²¹ and Greene.³²²

Distribution-Free Approach

The DFA method of measuring bank efficiency was first suggested by Berger.³²³ DFA is a ‘hybrid’ of the SFA. This method assumes that the composed error terms, ε_{it} , average out over each year³²⁴ of the sample for each firm. The only item in the cost function which does not change over time is the X-efficiency (X-EFF) factor $\ln u$, which is assumed to remain constant for each branch. This implies the estimation of a cost function separately for each time period, allowing the parameter of the cost function to vary over time. The most efficient firm is then chosen as a benchmark to normalise each individual efficiency measure.³²⁵ However, the problem is that the frontier may shift due to other factors than efficiency, i.e. technical – thus DFA generates the average best practice frontier, but not the level of efficiency at a given time. The X-efficiency ratios are calculated in the same way as in the case of the SFA. Table 6-4 illustrates the calculation of X-EFF as well as X-inefficiency (X-INEFF) using the DFA frontier technique. For brevity the data comprises only two banks over the sample period 1992 to 1996. The highlighted figures are the estimated disturbances from a translog regression model. The $\ln v$ for the year 1992 for bank A is -0.0555, which is the average of 0.0193, -0.0549, -0.0805, -0.1058; for the year 1993 it is -0.0781, the average of -0.0711, 0.0549, -0.0805, -0.1058; etc. The same procedure applies for bank B. Minimum $\ln v$ points to the least inefficient bank during a year. In 1992 bank B seems to be more efficient, while in 1993 the reverse is true. X-EFF for bank A is then $\exp(-0.0573 - (-0.0555)) * 100 = 99.8\%$, and X-INEFF is

³²⁰ Ferrier, G. D. and C.A.K. Lovell (1990) and Greene, W.H. (1993)

³²¹ Ferrier G.D. and C.A.K. Lovell (1990).

³²² Greene, W.H. (1993).

³²³ Berger, A.N. (1993).

³²⁴ According to Berger, A.N. (1993), a period of five years ought to be appropriate.

³²⁵ Berger, A.N., J.H. Leusner and J.J. Mingo (1997).

100%-99.8%=0.2%. In the year 1992 bank B is also the more profit efficient bank in the sample. Hence it is taken as a benchmark to measure the X-EFF of bank A. The X-EFF of bank A is given by $\exp(-0.0141 - (-0.006)) * 100 = 99.2\%$, and its X-INEFF is $100\% - 99.2\% = 0.8\%$.

Table 6-4: Decomposition of the Error Term through DFA

Dependent Variable: Total Cost			Dependent Variable: Total Profit		
Residual			Residual		
	Bank A	Bank B		Bank A	Bank B
1992	-0.0711	0.0143	1992	0.4476	0.046
	-0.0555	-0.0573		-0.0141	-0.006
	-0.0573	-0.0573		-0.006	-0.006
X-eff	99.8	100	X-eff	99.2	100
X-ineff	0.2	0	X-ineff	0.8	0
1993	0.0193	-0.0797	1993	-0.0437	0.0440
	-0.0781	-0.0338		0.1087	-0.0055
	-0.0781	-0.0781		0.1087	0.1087
X-eff	100	95.7	X-eff	100	89.2
X-ineff	0	4.3	X-ineff	0	10.8
1994	-0.0549	-0.0436	1994	-0.0283	-0.0196
	-0.0595	-0.0428		0.1049	0.0104
	-0.0595	-0.0595		0.1049	0.1049
X-eff	100	98.3	X-eff	100	90.99
X-ineff	0	1.7	X-ineff	0	9.01
1995	-0.0805	-0.0847	1995	-0.0098	-0.0060
	-0.0531	-0.0325		0.1003	0.0070
	-0.0531	-0.0531		0.1003	0.1003
X-eff	100	98.0	X-eff	100	91.1
X-ineff	0	2.0	X-ineff	0	8.9
1996	-0.1058	-0.0211	1996	0.0253	-0.0422
	-0.0468	-0.0484		0.0915	0.0161
	-0.0484	-0.0484		0.0915	0.0915
X-eff	99.8	100	X-eff	100	92.7
X-ineff	0.2	0	X-ineff	0	7.3

Source: Own calculation.

Thick Frontier Approach

One problem with the parametric stochastic frontier approach is its requirement to impose strong distributional assumptions on the error term. To avoid this problem in estimating inefficiency, Berger and Humprey suggest the TFA which requires weaker distributional assumptions.³²⁶ In TFA a larger number of “best-practice” firms support the frontier. Divergence from predicted costs for the lowest quartile of the banks in the

³²⁶ Berger, A.N. and D.B. Humprey (1991).

industry represent random errors, while deviations from predicted costs for those banks between the lowest and highest quartiles evolves from X-inefficiencies. However, this approach is limited in as much as in the case of multiple-input/multiple-output technology the ordering criterion implies a different model from that estimated.

6.6.3 Non-Parametric Methods of Estimating X-efficiencies - Data Envelopment Analysis

The non-parametric technique Data Envelopment Analysis (DEA) approach assumes that all deviations are due to X-inefficiencies in providing a piecewise linear frontier by enveloping the observed data points. In contrast to the econometric approach there is no room for the error term (or luck) so that inefficiency beyond the control of management is also attributed to management failure. However, as only a small subset of data supports the fixed deterministic frontier which encompasses all the sample, the measurement of efficiency may be distorted (overestimation of inefficiency) due to sampling, outliers and statistical noise problems.

One approach which emerged as an option to the limitation of the DEA requirement for linear input substitution is the non-parametric free disposal hull approach (FDH).³²⁷ In cases of FDH, the isoquant is represented by a step function through the observed input combinations. However, this less constrained alternative to DEA assumes that, as is the case with the DEA, all deviations from the frontier are the result of inefficiency.

6.7 *The Preferred Frontier Techniques*

It is the SFA technique which is applied in this chapter to estimate profit and cost inefficiency. As the degree of identifying X-inefficiencies is different across the alternative methods, and as the SFA imposes arbitrary assumptions concerning the distribution of the X-efficiency error term, the DFA approach - as applied by Berger,

³²⁷ Berger, A.N. and D.B. Humphrey (1997). See also Berger, A.N. and J.H. Leusner, et al. (1997) and Drake, L. (2000).

Leusner, et al. - is also used, in particular because of its quality of being a method with the least arbitrary assumptions of all the approaches.³²⁸ Because the X-efficiency estimates vary according to the models of the composite error term, the results from the DFA approach are not expected to confirm the accuracy of the SFA results, but are simply meant to provide a comparison. DFA results are explicitly mentioned, otherwise comments as well as OLS regressions (see below) are related to the SFA results.

Finally, the estimated profit and cost inefficiency indexes obtained through the SFA technique were used to investigate the relative importance of cost inefficiency in determining profit (revenue) inefficiency. An econometric model (or second-stage inefficiency model) is specified which regresses the profit and cost inefficiency index onto observable and firm specific nondiscretionary input such as managerial quality and ownership structure. However, because inefficiency is measured as error, profit or cost inefficiency scores (regressands) might be correlated with the regressors selected. In order to avoid this problem explanatory dummy variables need to be considered in the functional specification (Table 6-5).

Table 6-5: Dummies used in the Regression Model

1	Year dummies	Year dummy variables for the sample years 1992 to 1999, e.g., if year is 1993 then $\text{yeardum}_{1993} = 1$ or else 0.		
2	Ownership dummies	DFBK: Foreign ownership dummy, e.g. if a bank is foreign-owned then $\text{DFBK} = 1$ or else 0.		
3	Number of years in business dummy ¹	DA	≤ 2 years	
		DB	≥ 3 years	
		DC	≥ 4 years	
		DD	≥ 5 years	
		DE	≥ 6 years	
		DF	≥ 7 years	
		DG	≥ 8 years	
		DH	≥ 9 years	
4	Asset size dummies	DGA: ²	Total assets	$\leq 156,905$ th \$
		DGB:	Total assets	$>156,905$ and $\leq 321,654$
		DGC:	Total assets	$>321,654$ and $\leq 572,913$
		DGD:	Total assets	$>572,913$ and $\leq 946,406$
		DGE:	Total assets	$>946,406$ and $\leq 1,783,499$
		DGF:	Total assets	$>1,783,499$ and $\leq 16,448,046$

¹ Log of years in business is also used in the regression. ² Total assets were categorised at these levels because assets usually fell into these six boundaries.

³²⁸ Berger, A.N. and J.H. Leusner, et al. (1997).

Those binary variables which are eliminated from the cost and profit function are unlikely to be correlated with the cost and profit inefficiency scores derived from the error term e . Thus, such dummy variables can readily be employed as regressors to find a possible correlation between X-inefficiencies and other relevant organisation-specific and related variables reflecting management practices.

The first variable, year dummies for the sample period, is intended to control for the influence of macroeconomic turmoils and crises. The coefficient would necessarily depend on the relative impact of technological change over the period, and the impact of institutional and structural considerations, among other factors. Hence, no *a priori* coefficient is postulated. The second explanatory variable included is the foreign ownership dummy variable. One hypothesis here is that foreign ownership may bring effective corporate control and hence reduce moral incentives on the part of bank managers - thus a negative coefficient is hypothesised. The next variable is the number-of-years-in-business dummy variable. One hypothesis here is that length of the banking experience may bring lower inefficiency; *ex ante* one would expect a negative coefficient when inefficiency scores are regressed against the number-of-years-in-business dummy variable. Finally, the total assets variable is intended to control for the overall size of a bank. It may be argued that larger banks direct more managerial inputs into identifying and resolving inefficiency; *a priori* a negative coefficient is postulated.

6.8 The Fourier-Flexible Specification

In order to estimate the error term and to calculate each bank's efficiency index the Fourier-flexible profit (cost) function is used. The mixed functional form, including a full translog and all first-, second- and third-order trigonometric terms as well as a composite error term (η) has the following form:

$$\begin{aligned}
\ln P(\ln C) &= \alpha_0 + \sum_{j=1}^3 \beta_j \ln Y_j + \frac{1}{2} \sum_{j=1}^3 \sum_{k=1}^3 \beta_{jk} \ln Y_j \ln Y_k + \sum_m^2 \gamma_m \ln W_m \\
&+ \frac{1}{2} \sum_{m=1}^2 \sum_{n=1}^2 \gamma_{mn} \ln W_m \ln W_n + \sum_{j=1}^3 \sum_{m=1}^2 \rho_{jm} \ln Y_j \ln W_m \\
&+ \sum_{j=1}^5 [\delta_j \cos Z_j + \theta_j \sin Z_j] + \sum_{j=1}^5 \sum_{k=1}^5 [\delta_{jk} \cos(Z_j + Z_k) + \theta_{jk} \sin(Z_j + Z_k)] \\
&+ \sum_{j=1}^5 \sum_{k=j}^5 \sum_{l=k}^5 [\delta_{jkl} \cos(Z_j + Z_k + Z_l) + \theta_{jkl} \sin(Z_j + Z_k + Z_l)] + \eta
\end{aligned}$$

(7)

where,

C = total cost

P = after-tax profit

Y = vector of outputs including total loans, total investments, total borrowed funds

W = vector of inputs for the price of borrowed funds, price of labour.

Z = functions which rescale the $\ln Y_j$ and the $\ln W_m$ terms so that they fall on specific intervals,

DFBK = dummy equal to 1 if bank is foreign owned (not displayed in the equation).

ln = natural logarithm.

Standard homogeneity and symmetry restrictions are imposed on the translog portion of the model. Factor share equations were omitted because application of the usual cross-equation restrictions would impose the assumption that the given input proportions were the allocatively efficient ones.³²⁹ The variables selected to estimate profit and cost inefficiency follow the intermediation approach. The reason for not choosing the production approach, besides the difficulty of obtaining data on the number of accounts in a transitional economy,³³⁰ is that taking account of operating costs only and ignoring interest costs is likely to produce distorted results in a banking system where only two major banks have an extensive branching network, and hence a

³²⁹ Berger, A. N. (1993, p. 266).

³³⁰ According to the author's inquiry in the Public Relations Division of the CNB on 24 May 2000, the number of accounts of the banking sector is not statistically followed by the CNB.

high market share over deposit, whereas the remaining small-and medium size banks fund a larger share of their assets from non-deposit sources.

In line with the intermediation approach our model includes the following three output and two input variables. Total customer loans, total investments³³¹ and total borrowed funds³³² - all falling into the category of interest bearing assets and liabilities - were taken as a measure of output. The price of borrowed funds and price of labour were taken as a measure of the costs of producing loans. The price of borrowed funds equals the total interest expense divided by the total of borrowed funds. The price of labour equals personnel expenses divided by the number of employees.³³³ The dependent variable is total costs defined as total operating costs inclusive of total interest costs. To estimate profit inefficiency, after-tax profit (net-income) is taken. Total investments comprise total other earning assets, such as deposits with other institutions, securities, bills, bonds, certificate of deposits, equity and other investments. Total borrowed funds include a) customer and short term funding (inclusive deposits) and b) other funding. The explanatory foreign ownership dummy variable controls for cost and profit differences due to structural elements beyond the control of management.

Table 6-6 shows the Fourier flexible alternative - with one dummy variable - and the regression statistics before and after the elimination of the insignificant variables. It is noteworthy to mention that the first-, second- and third-order trigonometric terms cannot simply be eliminated. These variables can only be dropped by maintaining a symmetric treatment of all the outputs and inputs. In order to reduce the number of variables to be estimated, six third-order trigonometric terms in a single output (i.e., $\cos 3z_i$, $\sin 3z_i$) were dropped from the Fourier-flexible specification thereby maintaining the symmetric treatment of all the outputs. A complete translog with the 3 outputs and 2 input prices plus first-, second- and third-order trigonometric terms in the 3 outputs and 2 inputs plus one dummy yields a total of 85 coefficients

³³¹ Total investment comprises total other earning assets including financial investments.

³³² Total of borrowed funds comprises total deposits, total money market funding plus other funding.

³³³ The best available alternative total non-interest expenditure.

(20 translog variables, 64 trigonometric terms³³⁴) in the model shown in equation (7) above.

Table 6-6: Fourier-Flexible Cost Function Specification - Regression Results

Total Cost (foreign ownership dummy)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
All Translog + 64 ¹ Fourier								
Common (Pooled Least Squares)	85	158	0.98	0.95	8.84	1.37	18	
Fixed effects (Pooled Least Squares)	85	158	0.99	0.98	2.09	1.99	15	all insignificant
SUR+ common constant	85	158	0.98	0.95	9.09	1.20	5	
SUR+ common constant (after the elimination of insignificant variables)	79	158	0.98	0.95	9.11	1.21	0	
<i>Likelihood Ratio (LR) test</i>			LR = $\ln(16.96 / 9.11) 158 = 98.19 > 37.6$					
URSS _{Fourier} = 9.11 (n=158, k=79)			From the χ^2 tables with 20 d.f. the 1% significance point is 37.6.					
RRSS _{Translog} = 16.96 (n=179, k=20)								
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	0.18	Probability: 0.85						
LM test statistic	0.63	Probability: 0.73						

Note: N = number of observations; RSS = Sum of squared residuals; DW = Durbin Watson statistic. ¹ The following 6 trigonometric terms out of the 70 trigonometric terms were dropped: cos(H1), sin(H1), cos(H2), sin(H2), cos(H3), sin(H3).

As alluded in Section Four above, the estimator employed should be the most efficient available, one of ordinary least squares, generalised least squares, or maximum likelihood.³³⁵ In the present case, maximum likelihood estimation did not yield meaningful results. The coefficients were mainly insignificant, and if the residual was estimated through the frontier techniques, namely SFA or DFA, the cost inefficiency score lay around 80%, which is not realistic. This is most likely to occur with a small sample size. However, the pooled least square estimator seems to be the best suitable alternative. The panel data method, in contrast to cross-section methodology,³³⁶ reveals more information, since it simultaneously uses all the data set.

Fixed effects estimate different intercepts for each cross-section pool member. This is particularly necessary when dummies are included in the equation. However, because fixed effects coefficients in the Fourier-flexible specification are all

³³⁴ 70 minus 6 trigonometric terms.

³³⁵ Greene, W. H. (1993, p. 71).

³³⁶ Cross-section methodology requires separate estimates for each year in the sample.

insignificant, a common constant was selected. This also allows the estimation of the parameters of the equation using Seemingly Unrelated Regression (SUR), also known as multivariate regression. SUR estimates the parameters of an equation correcting for cross-section heteroskedasticity.

The Lagrange Multiplier (LM) is a test for autoregressive conditional heteroskedasticity (ARCH) in the residuals. To test for heteroskedasticity, the ARCH-LM test is applied to the residuals. The test is based on the regression of squared residuals on lagged squared residuals. The statistic is asymptotically distributed as χ^2 , with degrees of freedom equal to the number of lagged squared residuals, and provides a test of the hypothesis that the coefficient of the lagged squared residuals are all zero; that is, there is no ARCH effect. The ARCH-LM statistic in Table 6-6 indicates that there is no heteroskedasticity in the residuals for the calculation of X-inefficiency scores, suggesting that the model does remove heteroskedasticity.

The Likelihood Ratio test reject the null hypothesis that the translog specification (the translog variable cost function) is correct - i.e., that the coefficients of all the trigonometric terms are jointly zero - at the 1% significance level, supporting the Fourier-flexible specification.

Eliminating insignificant translog variables from the Fourier flexible specification leaves us with variables to 79 (Table 6-6). The Durbin-Watson statistic with 1.21 remains within the inconclusive range. Table 6-7 shows the coefficients of the cost function.

Table 6-7: Fourier-Flexible Cost Function Specification: SUR Estimates
(for brevity, trigonometric terms are not displayed)

Dependent Variable: LN Total Cost				
Method: Seemingly Unrelated Regression				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 158				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.160288	0.878773	8.148051	0.0000
LNW1	1.669181	0.260851	6.398970	0.0000
0.5*LNW1LNW1	0.570319	0.052169	10.93207	0.0000
LNy1	-2.404057	0.292957	-8.206166	0.0000
LNy3	2.413449	0.326668	7.388074	0.0000
0.5*LNy1LNy1	0.160038	0.034083	4.695543	0.0000
0.5*LNy3LNy3	0.805555	0.121643	6.622297	0.0000
LNy1LNy2	0.308513	0.037672	8.189462	0.0000
LNy1LNy3	-0.400669	0.070918	-5.649757	0.0000
LNy2LNy3	-0.356110	0.040183	-8.862233	0.0000
LNy1LNW1	-0.289642	0.034275	-8.450517	0.0000
LNy1LNW2	0.349266	0.032232	10.83595	0.0000
LNy2LNW1	-0.213454	0.020721	-10.30115	0.0000
LNy3LNW2	-0.340683	0.029819	-11.42492	0.0000
LNy3LNW1	0.510965	0.047093	10.85022	0.0000
Foreign ownership dummy	-0.124869	0.032982	-3.785926	0.0003

During the period studied losses at banks were not uncommon. However, annual losses (indicated by negative figures) cannot be estimated in the case of profit function. Consequently, all sample data were transformed to positive figures by adding the highest loss incurred by one bank during the sample period to the remaining banks' profit as well as loss data.

Table 6-8: Fourier-Flexible Profit Function Specification - Regression Results

Profit (foreign ownership dummy)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
All Translog + 64 ¹ Fourier								
Common	85	157	0.716	0.376	9.63	2.45	18	
Fixed	85	157	0.816	0.315	6.25	2.88	20	all insignificant
SUR+ common constant	85	157	0.714	0.372	9.68	2.49	7	
SUR+ common constant (after the elimination of insignificant variables)	80	157	0.713	0.411	9.73	2.47	0	
ARCH-LM Statistic								
Lagged squared residuals up to order 2								
F-statistic	5.26	Probability: 0.10						
LM test statistic	4.67	Probability: 0.10						

Note: N = number of observations; RSS = Sum of squared residuals; DW = Durbin Watson statistic. ¹ The following 6 trigonometric terms were dropped: cos(H1), sin(H1), cos(H2), sin(H2), cos(H3), sin(H3).

Eliminating the insignificant translog variables, including dummies - in addition to the six trigonometric terms - from the Fourier-flexible specification leaves us with 16 translog variables (Table 6-8) and 64 trigonometric terms. In contrast to our cost function, the estimation of the profit function resulted in a higher Durbin-Watson statistic than that of the specified cost function. However, in contrast to the cost function R^2 and \bar{R}^2 were low. The Durbin-Watson statistic with 2.47 lies on the right hand side of the upper limit thereby indicating no evidence of positive first-order serial correlation, which reduces the risk of serial correlation. Table 6-9 shows the coefficients of the profit function.

Table 6- 9: Fourier-Flexible Profit Function Specification; SUR
Estimates (for brevity trigonometric terms are not displayed)

Dependent Variable: LN Profit				
Method: Seemingly Unrelated Regression				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 157				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.84278	1.388103	14.29489	0.0000
LNW1	3.893529	0.380612	10.22964	0.0000
LNW1LNW2	-0.182845	0.035698	-5.121962	0.0000
0.5*LNW1LNW1	0.243028	0.039961	6.081683	0.0000
0.5*LNW2LNW2	-0.418616	0.032479	-12.88878	0.0000
LN Y1	-1.078682	0.211844	-5.091863	0.0000
LN Y2	-1.543173	0.190855	-8.085593	0.0000
LN Y3	2.437081	0.330802	7.367192	0.0000
0.5*LN Y1LN Y1	0.101379	0.025795	3.930238	0.0002
0.5*LN Y2LN Y2	0.201454	0.016201	12.43477	0.0000
0.5*LN Y3LN Y3	-0.462546	0.045393	-10.18975	0.0000
LN Y1LN Y3	0.073028	0.027503	2.655290	0.0096
LN Y1LN W2	-0.220133	0.030887	-7.127015	0.0000
LN Y2LN W1	0.232111	0.024826	9.349616	0.0000
LN Y2LN W2	0.240470	0.032714	7.350670	0.0000
LN Y3LN W1	-0.425212	0.035502	-11.97697	0.0000
Foreign ownership dummy	0.127983	0.029123	4.394622	0.0000

6.8.1 Profit and Cost Inefficiency Scores

Descriptive statistics for estimated inefficiency applying the Stochastic Frontier technique (SFA) are shown in Table 6-10a. Overall, the pooled average estimate indicates a cost inefficiency of 27.4%. Hence, an average bank could improve its cost category by 27.4%, thus matching its performance with the best-practices bank. Observing the inefficiency trend over the sample years, a decrease in 1993-96, an increase in 1997 and a decrease from then onwards can be noticed. In 1997 cost

inefficiency rose to 23.7%. The lowest level of cost inefficiency, at 12.2%, was observed in 1999. The performance of different categories of banking firms for each year is also shown in Table 6-10. Highest cost inefficiency among banks were reported by the SOBs in 1992, 1993 and 1997. In 1994-95 and 1998 NEBs fared worst than SOBs and foreign banks.

Table 6-10a: Fourier Cost Inefficiency (SFA)						Table 6-10b: Cost Inefficiency (DFA)				
	All banks ¹	St.Dev	SOB	NEB	Foreign Banks	All banks	St.Dev	SOB	NEB	Foreign Banks
1992	19.2	9.7	24.8	14.4	22.0	10.8	8.3	9.9	10.3	12.2
1993	26.1	11.8	29.1	23.2	27.8	13.7	9.3	9.9	15.3	13.6
1994	16.2	9.3	12.9	20.7	12.3	18.0	14.2	15.6	19.9	16.8
1995	16.7	9.3	10.4	19.6	16.0	26.6	13.2	28.6	28.1	24.3
1996	13.4	6.4	11.7	13.6	13.8	19.3	7.5	20.9	17.6	20.4
1997	23.7	7.4	28.1	17.8	25.9	16.3	9.0	16.7	13.8	17.7
1998	16.1	9.5	18.8	19.4	14.0	15.0	8.9	21.9	6.4	17.7
1999	12.2	5.9	9.67	12.0	12.7	19.3	17.2	17.8	26.8	16.7
Combined 1992-99	27.4	8.0	18.2	17.6	18.0	26.0	10.2	17.6	17.3	17.4

For comparison, the inefficiency scores resulting from the distribution free approach (DFA) are reported in Table 6-10b. Because there is no simple rule for determining which of the frontier techniques best describes the true nature of the banking data the choice of measurement method appears to strongly affect the level of measured inefficiency. The two methods do not arrive at the same conclusion. DFA estimates indicate that an average bank could improve its cost category by 26%.

In case of the SFA estimation method the average X-inefficiency for each bank ranged from 7.1% to 39.1%, while by the DFA technique it ranged from 0.5% up to 58.6% (Table 6-11). Among the 10 banks with the lowest X-inefficiency, only one is a recently privatised NEB, while four are foreign banks (out of a total of 11 in the sample), and five are newly established small banks.

Table 6-11: Cost-Inefficiency Score per Bank

	Ranking by the SFA technique	Start and end of operation	Data period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data period	X-ineff
F	Ceska Exportni Banka	1995-	95-99	7.1	F	Ceska Exportni Banka	1995-	95-99	0.5
D	Bankovni dum Skala	1990-96	93-94	9.0	Z	Union banka	1991-	92-99	2.4
E	BNP-Dresdner Bank	1992-	93-99	9.8	S	IPB	1992-	92-98	8.2
Z	Union Banka	1991-	92-99	11.3	W	Prvni Mestska Banka	1992-	96-99	10.3
W	Prvni Mestska Banka	1992-	96-99	12.1	L	Credit Lyonnais Bank	1992-	92-99	11.7
Q	Hypovereinsbank	1992-	95-99	12.5	V	Pragobanka	1990-99	92-97	12.5
X	Raiffeisenbank	1993-	94-99	13.6	R	Interbanka	1991-	92-99	13.1
S	IPB	1992-	92-98	14.7	E	BNP-Dresdner Bank	1992-	93-99	13.4
Y	Societe Generale	1991-	94-97	15.0	Q	Hypovereinsbank	1992-	95-99	13.8
N	Foresbank	1993-97	94-97	15.5	U	Moravia Banka	1992-99	92-98	15.0
L	Credit Lyonnais Bank	1992-	92-99	15.8	X	Raiffeisenbank	1993-	94-99	15.3
M	Erste Bank Sparkasse	1993-	93-99	16.1	T	Komercni Banka	1990-	92-99	15.9
R	Interbanka	1991-	92-99	16.3	M	Erste Bank Sparkasse	1993-	93-99	16.0
T	Komercni Banka	1990-	92-99	17.3	Y	Societe Generale	1991-	94-97	16.5
O	GE Capital Bank	1990-	92-96, 98-99	17.5	N	Foresbank	1993-97	94-97	16.8
V	Pragobanka	1990-99	92-97	18.1	O	GE Capital Bank	1990-	92-96, 98-99	18.2
G	Ceska Sportelna	1969-	92-99	18.1	B	Bank Austria Creditanstalt	1991-	92-99	19.5
U	Moravia Banka	1992-99	92-98	18.1	AC	Zivnostenska Banka	1868-	92-99	21.5
AA	Universal Banka	1993-99	94-97	18.8	J	Citibank	1991-	92-99	22.1
A	Bank Austria	1991-	93-97	20.2	G	Ceska Sportelna	1969-	92-99	22.4
AC	Zivnostenska banka	1868-	92-99	20.2	A	Bank Austria	1991-	93-97	24.0
J	Citibank	1991-	92-99	20.4	AA	Universal Banka	1993-99	94-97	24.1
B	Bank Austria Creditanstalt	1991-	92-99	20.9	K	Coop Banka	1992-96	92-96	24.3
P	Hypo-Bank	1992-	93-98	21.2	P	Hypo-Bank	1992-	93-98	24.7
K	Coop Banka	1992-96	92-96	21.9	I	CSOB	1965-	92-99	27.0
C	Banka Hana	1990-	94-98	22.6	C	Banka Hana	1990-	94-98	28.7
I	CSOB	1965-	92-99	23.8	AD	Expandia Banka	1998-	98-99	42.5
AD	Expandia Banka	1998-	98-99	28.7	AB	Velkomoravska Banka	1992-98	93-95	55.8
H	Ceskomoravska Zarucni a R.	1992-	94-99	37.5	H	Ceskomoravska Zarucni a R.	1992-	94-99	58.6
AB	Velkomoravska Banka	1992-98	93-95	39.1	D	Bankovni dum Skala	1990-96	93-94	

Note: Banks which fall into the same category across estimation techniques are highlighted.

Profit Inefficiency Scores

Descriptive statistics for estimated profit-inefficiency are shown in Table 6-12a. Overall, the pooled average estimate indicates a profit inefficiency of 33.3%. The pooled average profit-inefficiency estimate based on the DFA frontier technique is 22.5% (Table 6-12b). It can be observed that SFA estimates in the profit categories were on average higher than the cost inefficiency scores obtained. Hence, an average bank experienced higher profit inefficiency than cost inefficiency.

Table 6-12a: Profit Inefficiency (Fourier plus dummy) SFA						Table 6-12b: Profit Inefficiency (DFA)				
	All banks ¹	St.Dev.	SOB	NEB	Foreign Banks	All banks	St.Dev.	SOB	NEB	Foreign Banks
1992	14.2	10.4	15.5	<i>13.3</i>	14.7	14.8	8.3	15.1	15.9	12.9
1993	20.3	9.4	<i>8.4</i>	21.1	23.0	11.8	7.1	15.8	11.7	10.7
1994	24.6	7.8	<i>21.3</i>	25.6	24.5	9.4	6.5	9.4	9.3	9.5
1995	31.3	8.0	<i>29.6</i>	29.8	33.5	16.5	8.6	18.1	18.7	13.8
1996	15.3	8.8	15.4	16.9	<i>13.8</i>	16.6	7.7	16.6	14.6	18.5
1997	21.7	11.1	27.3	<i>18.6</i>	21.6	13.3	7.8	10.3	13.1	14.4
1998	26.5	10.6	33.0	29.0	<i>24.1</i>	22.4	7.9	18.2	18.1	25.1
1999	7.3	7.8	<i>6.4</i>	6.8	7.6	21.1	9.5	22.7	19.9	21.4
Combined 1992-99	33.3	7.9	<i>19.6</i>	20.1	20.3	22.5	7.3	15.76	<i>15.2</i>	15.79

Observing the profit inefficiency trend over the sample years, a drastic increase from 14.2% in 1992 to 31.3% in 1995 can be noticed. Profit inefficiency decreases in 1996 but increases in the following two years. The lowest average profit inefficiency is reported in 1999. It can be observed that sample banks fared worst in 1995 (31.3%), and best in 1999 (7.3%). As in the cost category, SFA results are higher than the DFA profit inefficiency scores. Looking at banks within different categories the profit-inefficiency estimates resulting from the SFA technique show that profit inefficiency was lowest among SOBs in 1993-95 and 1999. In addition, average profit-inefficiency during the sample years was lowest among SOBs and highest among foreign banks. Foreign banks seem to have fared better in the cost category than in the profit, because in 1993, 1995 and 1999 highest profit inefficiency was recorded among foreign banks.

Table 6-13 shows the best banks in calculating the cost and profit inefficiency scores across both the SFA and DFA frontier techniques. Applying both techniques, two NEBs, namely Union Banka and Prvni Mestska Banka, were selected seven and five times as “best-practice” banks, respectively; Ceska Exportni Banka, Hypovereinsbank and IPB were selected three times as “best-practice” banks; Bank Austria Creditanstalt, GE Capital Bank and Komerčni Banka twice each. Two foreign banks and three NEBs were selected once each as “best-practice” banks. Almost 57% of sample banks were never selected as “best-practice” banks during the sample years considered under either of the two approaches. Six of these banks were foreign and two are privatised.

Table 6-13: “Best-Practice” Banks

	Best banks	Cost	Profit		Non-best practices banks
Z	Union Banka	7		D	Bankovni dum Skala
W	Prvni Mestska Banka		5	E	BNP-Dresdner Bank
F	Ceska Exportni Banka	3		G	Ceska Sportelna
Q	Hypovereinsbank	1	2	H	Ceskomoravska Zarucni a R.
S	IPB	3		I	CSOB
B	Bank Austria Creditanstalt		2	J	Citibank
O	GE Capital Bank		2	K	Coop Banka
T	Komercni Banka		2	L	Credit Lyonnais Bank
A	Bank Austria		1	M	Erste Bank Sparkasse
AA	Universal Banka	1		AD	Expandia Banka
C	Banka Hana		1	N	Foresbank
V	Pragobanka		1	P	Hypo-Bank
Y	Societe Generale	1		R	Interbanka
				U	Moravia Banka
				X	Raiffeisenbank
				AB	Velkomoravska Banka
				AC	Zivnostenska banka

Table 6-14 shows the “best-practice” banks for each year. In no year was any bank a “best-practice” bank in both cost and profit categories at the same time.

Table 6-14: “Best-Practice” Banks for Each Year

Cost inefficiency Fourier SFA			Profit inefficiency Fourier SFA	
1992	Z	Union Banka	O	GE Capital Bank
1993	Z	Union Banka	T	Komercni Banka
1994	Y	Societe Generale	B	Bank Austria Creditanstalt
1995	S	IPB	O	GE Capital Bank
1996	S	IPB	T	Komercni Banka
1997	AA	Universal Banka	W	Prvni Mestska Banka
1998	F	Ceska Exportni Banka	Q	Hypovereinsbank
1999	Q	Hypovereinsbank	W	Prvni Mestska Banka
Cost inefficiency Fourier DFA			Profit inefficiency Fourier DFA	
1992	Z	Union Banka	V	Pragobanka
1993	S	IPB	B	Bank Austria Creditanstalt
1994	Z	Union banka	A	Bank Austria
1995	F	Ceska Exportni Banka	Q	Hypovereinsbank
1996	F	Ceska Exportni Banka	W	Prvni Mestska Banka
1997	Z	Union Banka	C	Banka Hana
1998	Z	Union Banka	W	Prvni Mestska Banka
1999	Z	Union Banka	W	Prvni Mestska Banka

Observing the average profit-inefficiency score for each bank it can be noticed that inefficiency ranged from 7.7% to a maximum of 31.3% in case of the SFA, and from 1.2% to a maximum of 29.9% in the case of the DFA (Table 6-15). Among the 10

banks with the lowest profit-inefficiency based on SFA, only four banks are NEBs, one is an SOB, while five are foreign banks. Among the most profit-inefficient 10 banks only three banks are foreign, one is an SOB, while six are NEBs. It is noteworthy to mention that three failed banks are in the category of the worst-performing 10 banks.

Table 6-15: Profit-Inefficiency Score Ranking per Bank

	Ranking by the SFA technique	Start and end of operation	Data period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data period	X-ineff
W	Prvni Mestska Banka	1992-	96-99	7.7	W	Prvni Mestska Banka	1992-	96-99	1.2
Q	Hypovereinsbank	1992-	95-99	14.4	V	Pragobanka	1990-99	92-97	3.9
V	Pragobanka	1990-99	92-97	17.6	B	Bank Austria Creditanstalt	1991-	92-99	5.3
B	Bank Austria Creditanstalt	1991-	92-99	17.6	Q	Hypovereinsbank	1992-	95-99	6.4
C	Banka Hana	1990-	94-98	18.1	A	Bank Austria	1991-	93-97	9.1
AD	Expandia Banka	1998-	98-99	18.4	I	CSOB	1965-	92-99	10.3
L	Credit Lyonnais Bank	1992-	92-99	18.4	K	Coop Banka	1992-96	92-96	11.6
T	Komerčni Banka	1990-	92-99	19.3	L	Credit Lyonnais Bank	1992-	92-99	12.2
X	Raiffeisenbank	1993-	94-99	19.4	U	Moravia Banka	1992-99	92-98	12.2
AC	Zivnostenska Banka	1868-	92-99	19.5	C	Banka Hana	1990-	94-98	12.6
O	GE Capital Bank	1990-	92-96, 98-99	19.7	E	BNP-Dresdner Bank	1992-	93-99	13.4
I	CSOB	1965-	92-99	20.2	X	Raiffeisenbank	1993-	94-99	13.8
U	Moravia Banka	1992-99	92-98	21.3	N	Foresbank	1993-97	94-97	14.1
K	Coop Banka	1992-96	92-96	21.5	AC	Zivnostenska Banka	1868-	92-99	14.2
A	Bank Austria	1991-	93-97	22.0	H	Ceskomoravska Zarucni a R.	1992-	94-99	15.7
J	Citibank	1991-	92-99	22.2	T	Komerčni Banka	1990-	92-99	17.1
R	Interbanka	1991-	92-99	22.4	S	IPB	1992-	92-98	17.2
S	IPB	1992-	92-98	22.6	O	GE Capital Bank	1990-	92-96, 98-99	17.3
N	Foresbank	1993-97	94-97	23.0	AA	Universal Banka	1993-99	94-97	17.6
E	BNP-Dresdner Bank	1992-	93-99	23.6	F	Ceska Exportni Banka	1995-	95-99	17.7
Z	Union banka	1991-	92-99	23.7	G	Ceska Sportelna	1969-	92-99	17.9
F	Ceska Exportni Banka	1995-	95-99	23.7	Y	Societe Generale	1991-	94-97	18.0
G	Ceska Sportelna	1969-	92-99	24.1	AB	Velkomoravska Banka	1992-98	93-95	18.9
Y	Societe Generale	1991-	94-97	24.8	R	Interbanka	1991-	92-99	20.5
AA	Universal Banka	1993-99	94-97	25.1	J	Citibank	1991-	92-99	21.0
P	Hypo-Bank	1992-	93-98	26.5	P	Hypo-Bank	1992-	93-98	21.5
M	Erste Bank Sparkasse	1993-	93-99	28.0	Z	Union banka	1991-	92-99	22.9
AB	Velkomoravska Banka	1992-98	93-95	29.8	AD	Expandia Banka	1998-	98-99	28.4
D	Bankovni dum Skala	1990-96	93-94	30.2	M	Erste Bank Sparkasse	1993-	93-99	29.9
H	Ceskomoravska Zarucni a R.	1992-	94-99	31.3	D	Bankovni dum Skala	1990-96	93-94	

X-inefficiency at Privatised Banks

Estimating X-inefficiency upon privatisation was difficult for two reasons. First, only four banks in the sample were privatised to an FSP. Second, these banks were

privatised only in 1997 and 1998. Hence, the impact of privatisation is yet to be seen. Nevertheless, bearing in mind that these banks were at the initial stages of restructuring by the acquirers, some conclusions may be drawn from the available data. Table 6-16 shows the extent of X-inefficiency before and after the privatisation of these banks. Banka Hana and Interbanka were both privatised in 1997. X-inefficiency in the cost category of both banks were relatively high at 26.8% and 22.3%, respectively. After privatisation in 1998 X-inefficiency at Banka Hana was reduced to 20.7%, and at Interbanka to 10.1%. Similar improvements can be observed in the profit category. Cost and profit inefficiency at IPB were reduced from 29.3% and 51.8% to 13.3% and 17% respectively after its privatisation in 1998.

Table 6-16: Cost and Profit Inefficiency (in %) in Privatised Banks - Fourier with Dummy

	Cost Inefficiency				Profit Inefficiency			
	Banka Hana '97-	Interbanka '97-	GE Capital '98-	IPB '98-	Banka Hana '97-	Interbanka '97-	GE Capital '98-	IPB '98-
1992	n.a.	7.4	20.0	19.1	n.a.	10.1	0.0	6.4
1993	n.a.	24.6	21.3	26.4	n.a.	28.6	35.6	16.8
1994	n.a.	19.2	24.7	14.5	n.a.	21.2	24.8	17.8
1995	n.a.	19.9	9.8	0.0	n.a.	37.3	0.0	31.1
1996	20.2	12.4	11.9	0.0	9.3	13.1	48.4	17.5
1997	26.8	22.3	n.a.	29.3	25.0	23.5	n.a.	51.8
1998	20.7	10.1	21.2	13.3	20.0	30.5	27.4	17.0
1999	n.a.	14.8	13.8	n.a.	n.a.	14.7	1.5	n.a.

Note: The extent of X-inefficiency since privatisation is highlighted.

To sum up, comparing the average cost-inefficiency rankings by the two frontier techniques it can be observed that the most inefficient (efficient) banks among the three categories of banks by the SFA method were SOBs (NEBs). In the profit category most inefficient banks were foreign banks according to the results of both techniques. Profit inefficiency was lowest among SOBs by the SFA technique while being lowest among NEBs by the DFA technique. The pooled average estimate by both techniques showed different results. The pooled average estimate by SFA technique indicates a cost and profit inefficiency of 27.4 and 33.3%, respectively, while by DFA it indicates an average inefficiency for cost and profit categories of

26% and 22.5% respectively. Most frequently selected “best-practice” banks appear to be NEBs in both the cost and profit categories. The privatisation of domestic banks seems to have improved their efficiency.

Controlling for foreign ownership does not change the results significantly. The inefficiency estimates resulting from the Fourier flexible specification without any dummy (see Appendix A6-8-1) differ only slightly. The dummy variable reduced the inefficiency scores in the cost category among SOBs and NEBs by an average of 0.4 and 0.5 points, while increasing inefficiency at foreign banks by 0.3 points. In the profit category, the dummy variable increased inefficiency at SOBs and foreign banks by 0.1 and 0.6 points, respectively, and reduced inefficiency at NEBs by 0.2 only. Furthermore, the ranking of banks is almost identical (see Appendix A6-8-1, Table A6-8-1-4).

6.8.2 Correlates of Profit and Cost inefficiency scores

As a next step, in order to find out the underlying causes of the measured X-efficiencies, a series of Ordinary Least Squared (OLS) regressions are employed to find the possible correlation between inefficiency and other relevant organization-specific and related variables reflecting portfolio positions and management practices.

$$\text{Pineff}_i = a_0 + b_1\text{LA}_i + b_2\text{STLOANS}_i + b_3\text{FININVEST}_i + b_4\text{RETAILLOAN}_i + b_5\text{RETAILDEP}_i + b_6\text{EQUITY}_i + b_7\text{CINEFF}_i + b_8\text{LASSET}_i + b_9\text{YRBUS}_i + \sum_{10-16} b_{10-16}\text{YEARDUM}_i + \sum_{17-23} b_{17-23}\text{DYRBUS}_i + e_i$$

Pineff_i = Profit-inefficiency score, our dependent variable.

LA = Liquid assets.

STLOANS = Short-term loans to total assets.

FININVEST = Financial investment to total assets.

RETAILLOAN = Retail loans to total assets.

RETAILDEP = Retail deposits to total assets.

EQUITY = Equity to total assets.

CINEFF = Cost inefficiency score.

LASSET = Logarithm of assets.

YRBUS = Logarithm of number of years in business.

YEARDUM = Year dummy variables for all sample years, e.g., if year is 1993 then year₁₉₉₃ = 1 or else 0.

DYRBUS = Number of years in business dummy: ie. DA ≤ 2 years; DB ≥ 3; years; DC ≥ 4 years; DD ≥ 5 years; DE ≥ 6 years; DF ≥ 7 years; DG ≥ 8 years; DH ≥ 9 years.

Three sets of pooled ordinary least squares regressions are estimated: a) a profit efficiency test which uses profit inefficiency as a dependent variable without cost inefficiency considered as an independent variable; b) a revenue efficiency test which uses profit inefficiency as a dependent variable with cost inefficiency included in the regression; and c) a cost efficiency test which employs cost inefficiency as the dependent variable. For all three versions the profit and cost inefficiency scores resulting from the SFA methodology are employed. The results are shown in Table 6-17.

Table 6-17: Correlates of Profit Inefficiency Scores OLS Regressions (t-statistics in parenthesis)

Independent variables	Profit inefficiency regression	Prob.	Revenue inefficiency regression	Prob.	Cost inefficiency regression	Prob.
Intercept	0.21 (1.92)	0.058	0.17 (1.51)	0.134	0.20 (2.07)	0.041
Liquid Asset Ratio	-0.17 (-2.30)	0.023	-0.17 (-2.35)	0.020	0.01 (0.10)	0.921
Short-term Loans	0.11 (1.00)	0.321	0.12 (1.15)	0.253	-0.07 (-0.72)	0.475
Financial Investment Ratio	0.05 (0.57)	0.571	0.03 (0.31)	0.760	0.11 (1.37)	0.173
Retail Loan Ratio	-0.16 (-1.25)	0.213	-0.19 (-1.47)	0.145	0.12 (1.05)	0.295
Retail Deposit Ratio	0.00 (0.03)	0.977	0.00 (-0.07)	0.947	0.02 (0.49)	0.623
Equity Ratio	-0.12 (-1.21)	0.230	-0.13 (-1.34)	0.184	0.05 (0.59)	0.553
Cost Inefficiency			0.22 (2.08)	0.040		
Log of Assets	-0.01 (-0.72)	0.472	-0.01 (-0.40)	0.693	-0.02 (-1.70)	0.093
Log of Years in Business	0.01 (0.46)	0.647	0.01 (0.23)	0.816	0.03 (1.18)	0.240
1992	0.04 (0.58)	0.566	0.01 (0.09)	0.925	0.14 (2.49)	0.014
1993	0.08 (1.44)	0.153	0.05 (0.86)	0.392	0.15 (2.91)	0.004
1994	0.14 (2.56)	0.012	0.12 (2.34)	0.021	0.06 (1.25)	0.213
1995	0.20 (3.94)	0.000	0.18 (3.68)	0.000	0.06 (1.46)	0.148
1996	0.03 (0.59)	0.559	0.02 (0.40)	0.688	0.04 (0.98)	0.331
1997	0.12 (2.57)	0.011	0.09 (1.89)	0.062	0.13 (3.26)	0.002
1998	0.17 (3.76)	0.000	0.15 (3.43)	0.001	0.07 (1.74)	0.085
Number of years in business:						
2 years	0.02 (0.53)	0.597	0.03 (0.73)	0.467	-0.03 (-1.00)	0.320
3 years	-0.01 (-0.20)	0.842	0.00 (-0.08)	0.933	-0.02 (-0.61)	0.545
4 years	0.01 (0.17)	0.868	0.01 (0.44)	0.663	-0.04 (-1.39)	0.168
5 years	0.01 (0.37)	0.715	0.02 (0.72)	0.473	-0.06 (-1.84)	0.069
6 years	0.04 (0.96)	0.340	0.04 (1.02)	0.312	-0.01 (-0.23)	0.822
7 years	0.00 (0.00)	0.997	0.01 (0.20)	0.843	-0.04 (-1.00)	0.319
8 years	-0.03 (-0.65)	0.520	-0.03 (-0.67)	0.504	0.00 (0.08)	0.939
9 years	0.17 (2.14)	0.035	0.16 (2.10)	0.038	0.02 (0.35)	0.729
R-squared	0.42		0.44		0.28	
Adjusted R-squared	0.30		0.32		0.14	
S.E. of regression	0.10		0.09		0.08	
F-statistic	3.52		3.65		1.96	
Prob(F-statistic)	0.00		0.00		0.01	
Mean dependent var	0.22		0.22		0.18	
S.D. dependent var	0.11		0.11		0.09	
Sum squared resid	1.03		1.00		0.80	
Durbin-Watson stat	2.56		2.59		1.50	
No of Observations	137					

Note: Inefficiency scores are based on the estimates with foreign ownership dummy. Coefficients which are significant up to 10% significance level are highlighted.

The evidence reveals that concentration in liquid assets decreased profit and revenue inefficiency as portrayed by a negative correlation between liquid assets and profit (revenue) inefficiency. The evidence reveals that cost inefficiency seems to have increased revenue inefficiency. The asset variable, a proxy for firm size, showed an inverse relationship with the dependent variable cost inefficiency. This reflects that bigger institutions were relatively more cost efficient. The evidence also reveals that during the years 1992-95 and 1997-98 banks did not perform well. During 1992-93

cost inefficiency increased, whereas in 1994-95 profit and revenue were negatively affected. In 1997-98 profit, revenue and cost inefficiency increased. The length of banking experience, i.e., the number-of-years-in-business variable showed a significant relationship only in one instance. The variable for the number-of-years-in-business for up to five years yields a significant relationship. Institutions with experience in banking business of up to five years are likely to have lower cost inefficiency. However, the variables for number-of-years-in-business for up to nine years is associated with higher profit and revenue inefficiency. This can be partly explained by the fact that those banks which were in operation for more than eight years were in existence before the fall of the communist regime and the banks which were carved out from the monobanking system. Hence, the inefficiency accompanying long tenure may have led to higher inefficiency.

6.9 Translog functional form

To examine whether the previous model may have understated efficiency by imposing too much structure on the cost (profit) function and the inefficiency term $\ln u$, the X-efficiency is re-estimated using the translog variable cost and profit function (the same as Equation 7, but without the non-parametric Fourier form). Dummies are introduced to control for foreign owned banks. Table 6-18 shows the regression statistics of the translog variable cost function including a foreign ownership dummy.

Table 6-18: Translog Cost Function Specification - Regression results

Total Cost (foreign ownership dummy)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Fixed (Pooled Least Squares)	21	179	0.983	0.977	7.475	1.878	10	all insignificant
Common (Pooled Least Squares)	21	179	0.964	0.960	16.098	1.011	17	
SUR+ common constant	NSM							
Common (after elimination) (Pooled Least Squares)	11	179	0.962	0.959	17.229	1.022	3 (jointly significant by Wald-test)	
Likelihood Ratio (LR) test: URSS _{Translog} = 16.098 (n=179, k=20) RRSS _{Cobb-Douglas} = 29.33 (n=179, k=5)				LR = $\ln(29.33/16.098)$ 179 = 107.4 > 15.1 From the χ^2 tables with 5 d.f. the 1% significance point is 15.1.				
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	1.34	Probability: 0.33						
LM test statistic	2.78	Probability: 0.25						

Note: NSM = Near Singular Matrix.

The null hypothesis that the Cobb-Douglas cost function would have been appropriate is rejected using the likelihood ratio test. Because the fixed effects coefficients of the translog specification are all insignificant, a common constant is chosen. The specification did not allow the application of the SUR technique. Hence, the parameters of the equation were estimated using Pooled Least Squares. As is the case with the Fourier-flexible specification, the ARCH-LM statistic (Table 6-18) indicates that there is no heteroskedasticity in the residuals for the calculation of X-inefficiency scores, suggesting that the model does remove heteroskedasticity. Table 6-19 shows the coefficients of the estimated cost function.

Table 6-19: Translog Cost Function: Pooled Least Squares Estimates

Dependent Variable: ln Total Cost				
Method: Pooled Least Squares				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 179				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.279590	1.422614	4.414122	0.0000
LNW1	1.446033	0.955019	1.514141	0.1319
LNW2	0.969773	0.351213	2.761207	0.0064
LNW1LNW2	0.368060	0.134401	2.738528	0.0068
0.5*LNW1LNW1	0.531415	0.176778	3.006118	0.0031
0.5*LNW2LNW2	-0.061220	0.014942	-4.097291	0.0001
0.5*LNW3LNW3	0.182899	0.050577	3.616251	0.0004
LNW1LNW3	-0.032873	0.019110	-1.720207	0.0872
LNW2LNW1	-0.120792	0.078990	-1.529207	0.1281
LNW2LNW2	-0.216265	0.052564	-4.114285	0.0001
LNW3LNW1	0.289675	0.130602	2.218002	0.0279
Foreign ownership dummy	-0.178752	0.062863	-2.843521	0.0050

Profit function

Table 6-20 shows the pooled least squares estimates for the translog profit function.

Table 6-20: Translog Profit Function Specification - Regression Results

Profit (foreign ownership dummy)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Fixed	21	177	0.251	-0.047	25.925	1.67	21	all insignificant
Common	21	177	0.120	0.000	30.461	1.44	21	
SUR+ common constant	21	177	0.119	0.000	30.477	1.44	4	
SUR+ common constant (after the elimination of insign. variables)	18	177	0.119	0.019	30.479	1.44	0	
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	6.98	Probability: 0.04						
LM test statistic	5.89	Probability: 0.05						

Note: N = number of observations; RSS = Sum of squared residuals; DW = Durbin Watson statistic. ¹ = Wald-test rejects the null hypothesis that the coefficients of the five variables are jointly zero. Hence these variables are retained in the equation.

The ARCH-LM statistic in Table 6-20 indicates that there is no heteroskedasticity in the residuals at the 1% significance level, suggesting that the model does remove heteroskedasticity. The coefficients of the translog variable profit function with foreign ownership dummy are shown in Table 6-21.

Table 6-21: Translog Profit Function: SUR Estimates

Dependent Variable: LN Profit				
Method: Seemingly Unrelated Regression				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 177				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.57610	0.260929	59.69472	0.0000
LNW1	1.294771	0.054171	23.90166	0.0000
LNW2	0.335574	0.084364	3.977672	0.0001
LNW1LNW2	-0.108093	0.008374	-12.90882	0.0000
0.5*LNW2LNW2	-0.127796	0.011529	-11.08458	0.0000
LN Y1	-0.740841	0.050073	-14.79516	0.0000
LN Y2	-1.244292	0.051948	-23.95254	0.0000
LN Y3	1.741978	0.075803	22.98023	0.0000
0.5*LN Y1LN Y1	0.081888	0.007533	10.87120	0.0000
0.5*LN Y2LN Y2	0.049636	0.003947	12.57471	0.0000
0.5*LN Y3LN Y3	-0.350793	0.029441	-11.91518	0.0000
LN Y1LN Y2	-0.049732	0.008691	-5.722256	0.0000
LN Y1LN Y3	0.057663	0.016147	3.571059	0.0005
LN Y2LN Y3	0.108531	0.011225	9.668967	0.0000
LN Y1LN W1	-0.071665	0.003012	-23.79608	0.0000
LN Y1LN W2	-0.102486	0.007489	-13.68416	0.0000
LN Y2LN W1	-0.013126	0.001996	-6.576195	0.0000
LN Y2LN W2	0.073899	0.004881	15.13882	0.0000
Foreign ownership dummy	0.065815	0.006163	10.67917	0.0000

6.9.1 Cost and Profit Inefficiency Scores

Descriptive statistics for estimated inefficiency applying the Stochastic Frontier technique (SFA) are shown in Table 6-22a.

	Table 6-22a: Translog Cost Inefficiency (SFA)					Table 6-22b: Translog Cost Inefficiency (DFA)				
	All banks	St.Dev.	SOB	NEB	Foreign Banks	All banks	St.Dev.	SOB	NEB	Foreign Banks
1992	25.6	10.4	29.2	18.2	33.1	25.2	10.2	23.9	28.3	21.9
1993	32.3	13.2	36.5	29.5	33.0	28.0	12.6	24.9	30.6	26.9
1994	18.7	10.4	17.5	20.2	17.3	26.5	13.0	23.3	31.0	22.2
1995	13.2	10.4	5.6	19.4	9.2	36.7	12.9	38.2	36.4	36.5
1996	23.1	10.1	16.9	26.6	21.6	26.2	12.1	30.1	23.4	27.8
1997	43.1	10.4	46.3	36.0	46.5	26.3	12.0	27.2	24.9	26.9
1998	27.7	11.3	29.1	30.6	26.1	28.2	11.1	31.5	21.7	30.4
1999	22.8	9.2	26.6	19.2	23.5	31.6	17.2	32.1	33.2	30.7
Combined 1992-99	44.3	8.4	26.0	25.0	26.3	37.1	11.3	28.9	28.7	27.9

Comparing the results of the Fourier-flexible and translog specification it can be observed that the results of the translog specification with one dummy yields higher inefficiency scores for cost and profit categories by both SFA and DFA technique. Both models show a similar trend (Figures 6-5-8 and 6-5-9).

Figure 6-5-8: X-inefficiencies based on Fourier and Translog Cost Function Specifications (SFA)

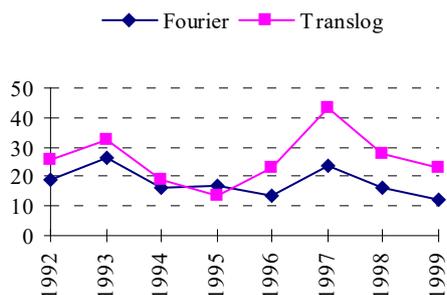
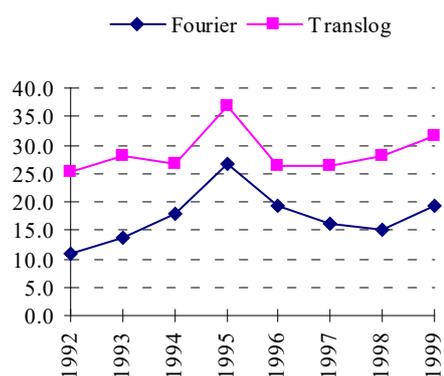


Figure 6-5-9: X-inefficiencies based on Fourier and Translog Cost Function Specifications (DFA)



Observing the inefficiency trend over the sample years inefficiency based on the SFA estimation technique shows a decreasing trend in 1993-95 and an increasing trend in 1996-97. Inefficiency was highest in 1997 with 43.1%. The pooled average estimate based on the SFA for 1992-99 indicates a cost inefficiency of 44.3%. This implies that in order to match its performance with the “best-practices” bank an average bank had to improve its performance by 44.3%. By the DFA frontier technique, overall average cost inefficiency during the sample period was 37.1%. Table 6-22a also shows the sectoral averages of the X-efficiency scores for the SFA estimation technique. In 1993 and 1999 average inefficiency was high among SOBs, and among NEBs was high in 1994-96 and 1998. Foreign banks recorded high inefficiency in 1992 and 1997.

Table 6-23 shows the estimated average X-inefficiencies by both frontier techniques for each bank in our sample. Although DFA results were slightly higher than the SFA results both SFA and DFA methodologies show a similar trend. Among the 10 banks with the lowest X-inefficiency, four banks are foreign owned (out of 11) while one is a recently privatized bank, and five are newly established small banks. 80% of those banks which are among the best 10 banks according to the Fourier-flexible specification were also among the best 10 banks according to the translog functional form. 70% of the most inefficient banks according to the Fourier-flexible specification are also among the 10 worst practices banks using the translog

specification. Ceska Exportni Banka has the lowest while Velkomoravska Banka has the highest cost inefficiency score using both techniques.

Table 6-23: Cost Inefficiency Score Ranking per Bank

	Ranking by the SFA technique	Start and end of operation	X-ineff	SFA		Ranking by the DFA technique	Start and end of operation	X-ineff
F	Ceska Exportni Banka	1995-	95-99	10.1	F	Ceska Exportni Banka	1995-	0.0
L	Credit Lyonnais Bank	1992-	92-99	16.5	L	Credit Lyonnais Bank	1992-	8.8
Y	Societe Generale	1991-	94-97	17.8	Z	Union Banka	1991-	14.6
Z	Union banka	1991-	92-99	18.2	Y	Societe Generale	1991-	17.6
N	Foresbank	1993-97	94-97	20.5	V	Pragobanka	1990-99	20.0
E	BNP-Dresdner Bank	1992-	93-99	21.3	S	IPB	1992-	20.7
X	Raiffeisenbank	1993-	94-99	21.5	W	Prvni Mestska Banka	1992-	21.1
AA	Universal Banka	1993-99	94-97	22.0	E	BNP-Dresdner Bank	1992-	21.8
S	IPB	1992-	92-98	22.5	N	Foresbank	1993-97	24.4
W	Prvni Mestska Banka	1992-	96-99	23.5	D	Bankovni dum Skala	1990-96	24.7
V	Pragobanka	1990-99	92-97	23.9	X	Raiffeisenbank	1993-	25.1
M	Erste Bank Sparkasse	1993-	93-99	24.2	AA	Universal Banka	1993-99	25.3
Q	Hypovereinsbank	1992-	95-99	25.0	M	Erste Bank Sparkasse	1993-	27.2
T	Komercni Banka	1990-	92-99	25.5	U	Moravia Banka	1992-99	27.3
G	Ceska Sportelna	1969-	92-99	26.2	T	Komercni Banka	1990-	28.1
U	Moravia Banka	1992-99	92-98	26.3	G	Ceska Sportelna	1969-	28.5
K	Coop Banka	1992-96	92-96	26.3	B	Bank Austria Creditanstalt	1991-	31.6
C	Banka Hana	1990-	94-98	26.5	Q	Hypovereinsbank	1992-	32.1
D	Bankovni dum Skala	1990-96	93-94	26.5	K	Coop Banka	1992-96	32.4
B	Bank Austria Creditanstalt	1991-	92-99	27.4	R	Interbanka	1991-	33.2
R	Interbanka	1991-	92-99	28.2	C	Banka Hana	1990-	34.1
I	CSOB	1965-	92-99	28.9	AC	Zivnostenska banka	1868-	34.1
AC	Zivnostenska banka	1868-	92-99	29.0	A	Bank Austria	1991-	34.7
A	Bank Austria	1991-	93-97	29.4	I	CSOB	1965-	35.5
J	Citibank	1991-	92-99	30.2	J	Citibank	1991-	36.5
P	Hypo-Bank	1992-	93-98	30.7	P	Hypo-Bank	1992-	38.3
O	GE Capital Bank	1990-	92-96, 98-99	30.9	O	GE Capital Bank	1990-	42.7
H	Ceskomoravska Zarucni a R.	1992-	94-99	33.6	H	Ceskomoravska Zarucni a R.	1992-	46.6
AD	Expandia Banka	1998-	98-99	40.1	AD	Expandia Banka	1998-	54.0
AB	Velkomoravska Banka	1992-98	93-95	45.9	AB	Velkomoravska Banka	1992-98	67.8

Note: Those banks that are among the best 10 banks using the Fourier-flexible specification are highlighted by letter. Banks which fall into the same category across estimation techniques are highlighted by name.

Profit inefficiency scores

Tables 6-24a and 6-24b show the estimated profit inefficiency scores. The pooled average estimate indicates a profit inefficiency of 27.7% which is almost 40% lower than the average cost inefficiency score. This does not necessarily imply that profit inefficiency was lower than cost inefficiency throughout the years studied. In 1995

and 1999 profit inefficiency was higher than cost inefficiency. The empirical finding that cost inefficiency was higher than profit inefficiency contradicts the results obtained from the Fourier-flexible specification.

Table 6-24a: Profit Inefficiency (SFA)						Table 6-24b: Profit Inefficiency (DFA)				
	All banks	St.Dev.	SOB	NEB	Foreign Banks	All banks	St.Dev	SOB	NEB	Foreign Banks
1992	17.5	9.0	17.3	16.9	18.7	23.7	12.3	19.4	28.8	20.4
1993	25.9	7.7	12.6	26.6	30.2	22.1	11.4	26.7	22.5	20.0
1994	18.0	7.0	8.1	18.6	21.3	24.0	11.1	21.0	26.5	22.6
1995	16.8	6.6	7.2	16.4	20.7	22.3	10.7	20.1	23.7	21.5
1996	20.5	15.9	4.2	26.2	20.2	21.6	9.0	23.2	19.1	23.9
1997	15.9	12.5	19.7	14.2	15.8	20.5	9.9	14.6	20.7	22.3
1998	17.2	14.2	30.5	14.5	15.4	19.0	11.0	8.7	16.8	22.4
1999	23.1	12.6	38.2	19.6	20.4	21.2	12.9	10.0	19.7	25.4
Combined 1992-99	27.7	9.9	17.2	19.1	20.3	23.2	10.6	18.0	22.2	22.3

Observing the profit inefficiency trend over the sample years, a decrease can be observed in 1993-1995. The declining trend continues in 1997 after a slight increase in 1996. However, an increase follows in 1998-99. The average X-inefficiencies for the three categories of banking firms in the profit category was lowest for the SOBs and highest for the foreign banks taking into account both techniques. These findings are in conformity with the results of the Fourier-flexible estimation method, except that by the DFA technique NEBs were least inefficient in the profit category.

The best practices banks for each year for both estimation techniques are displayed in Table 6-25. Ceska Exportni Banka was most frequently a reference bank for the calculation of the cost X-inefficiencies of banks. This bank was also one of the most frequently chosen banks in the cost category of the Fourier-flexible specification. In the profit category CSOB and Komerčni Banka appear to be “best-practices” banks. Credit Lyonnais Bank was selected as the “best-practices” bank four times in the cost category. Overall, 70% of those banks which were selected as “best-practices” banks in the Fourier-flexible specification are also chosen as anchor banks in the translog functional form. In both estimation techniques 16 banks were never chosen as

best practices banks; nine of these banks were foreign (82% of foreign banks in the sample) and six were NEBs, one being privatized in 1997.

Table 6-25: Best-Practice Banks

Best banks ¹	Start and end of operation	Data period	Cost	Profit	Non-Best-Practice Banks	Start and end of operation	Data period
F Ceska Exportni Banka	1995-	95-99	6		A Bank Austria	1991-	93-97
I CSOB	1965-	92-99		5	E BNP-Dresdner Bank	1992-	93-99
L Credit Lyonnais Bank	1992-	92-99	4		H Ceskomoravska Zarucni a R.	1992-	94-99
T Komerčni Banka	1990-	92-99		4	J Citibank	1991-	92-99
D Bankovni dum Skala	1990-96	93-94	1	1	K Coop Banka	1992-96	92-96
G Ceska Sportelna	1969-	92-99		2	M Erste Bank Sparkasse	1993-	93-99
Z Union banka	1991-	92-99	2		P Hypo-Bank	1992-	93-98
B Bank Austria Creditanstalt	1991-	92-99	1		Q Hypovereinsbank	1992-	95-99
C Banka Hana	1990-	94-98		1	R Interbanka	1991-	92-99
N Foresbank	1993-97	94-97	1		U Moravia Banka	1992-99	92-98
O GE Capital Bank	1990-	92-96, 98-99		1	V Pragobanka	1990-99	92-97
S IPB	1992-	92-98		1	X Raiffeisenbank	1993-	94-99
W Prvni Mestska Banka	1992-	96-99		1	Y Societe Generale	1991-	94-97
AA Universal Banka	1993-99	94-97	1		AB Velkomoravska Banka	1992-98	93-95
					AC Zivnostenska Banka	1868-	92-99
					AD Expandia Banka	1998-	98-99

Note: ¹ Banks that were considered as “best-practice” banks also in the Fourier-flexible specification are highlighted by letter.

“Best-practice” banks for each year are displayed in Table 6-26. In the cost category Union Banka and Credit Lyonnais Bank were the “best-practice” banks in two consequent years, while in the profit category Komerčni Banka was the “best-practice” bank in 1993-96. According to the DFA estimation technique Credit Lyonnais Bank and Ceska Exportni Banka in the cost category, and in the profit category CSOB were “best-practice” banks at least twice.

Table 6-26: Best-Practice Banks for Each Year

Cost inefficiency Translog SFA			Profit inefficiency Translog SFA	
1992	Z	Union banka	G	Ceska Sporitelna
1993	Z	Union banka	T	Komercni Banka
1994	N	Foresbank	T	Komercni Banka
1995	B	Bank Austria Creditanstalt	T	Komercni Banka
1996	F	Ceska Exportni Banka	T	Komercni Banka
1997	AA	Universal Banka	G	Ceska Sporitelna
1998	L	Credit Lyonnais Bank	I	CSOB
1999	L	Credit Lyonnais Bank	O	GE Capital Bank
Cost inefficiency Translog DFA			Profit inefficiency Translog DFA	
1992	L	Credit Lyonnais Bank	I	CSOB
1993	D	Bankovni dum Skala	D	Bankovni dum Skala
1994	L	Credit Lyonnais Bank	I	CSOB
1995	F	Ceska Exportni Banka	I	CSOB
1996	F	Ceska Exportni Banka	W	Prvni Mestska Banka
1997	F	Ceska Exportni Banka	S	IPB
1998	F	Ceska Exportni Banka	C	Banka Hana
1999	F	Ceska Exportni Banka	I	CSOB

Note: Banks that are also “best-practice” by the Fourier-flexible specification are highlighted by letter.

The average profit-inefficiency score for each bank is shown in Table 6-27. The bank with the lowest X-inefficiency score (8.3%) is CSOB, while the most inefficient bank has a score of 27.6%. Both estimation techniques rank banks almost identically.

Table 6-27: Profit-Inefficiency Score Ranking per Bank

	Ranking by the SFA technique	Start and end of operation	Data period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data period	X-ineff
I	CSOB	1965-	92-99	8.3	I	CSOB	1965-	92-99	1.1
W	Prvni Mestska Banka	1992-	96-99	9.6	W	Prvni Mestska Banka	1992-	96-99	3.9
C	Banka Hana	1990-	94-98	10.7	C	Banka Hana	1990-	94-98	7.7
F	Ceska Exportni Banka	1995-	95-99	13.4	F	Ceska Exportni Banka	1995-	95-99	11.1
G	Ceska Sportelna	1969-	92-99	14.7	G	Ceska Sportelna	1969-	92-99	12.8
N	Foresbank	1993-97	94-97	14.7	L	Credit Lyonnais Bank	1992-	92-99	13.9
L	Credit Lyonnais Bank	1992-	92-99	15.8	D	Bankovni dum Skala	1990-96	93-94	14.7
S	IPB	1992-	92-98	17.5	N	Foresbank	1993-97	94-97	15.6
AD	Expandia Banka	1998-	98-99	18.4	AD	Expandia Banka	1998-	98-99	17.8
Q	Hypovereinsbank	1992-	95-99	18.5	AB	Velkomoravska Banka	1992-98	93-95	18.3
V	Pragobanka	1990-99	92-97	19.0	Z	Union Banka	1991-	92-99	19.6
Z	Union banka	1991-	92-99	19.0	AC	Zivnostenska Banka	1868-	92-99	19.8
AC	Zivnostenska banka	1868-	92-99	19.1	V	Pragobanka	1990-99	92-97	19.8
X	Raiffeisenbank	1993-	94-99	19.4	Q	Hypovereinsbank	1992-	95-99	21.0
U	Moravia Banka	1992-99	92-98	19.5	K	Coop Banka	1992-96	92-96	21.2
J	Citibank	1991-	92-99	19.8	U	Moravia Banka	1992-99	92-98	21.3
Y	Societe Generale	1991-	94-97	20.3	J	Citibank	1991-	92-99	21.3
B	Bank Austria Creditanstalt	1991-	92-99	20.5	X	Raiffeisenbank	1993-	94-99	22.6
K	Coop Banka	1992-96	92-96	20.8	B	Bank Austria Creditanstalt	1991-	92-99	22.8
D	Bankovni dum Skala	1990-96	93-94	20.9	E	BNP-Dresdner Bank	1992-	93-99	23.2
AB	Velkomoravska Banka	1992-98	93-95	21.3	S	IPB	1992-	92-98	23.7
E	BNP-Dresdner Bank	1992-	93-99	21.3	M	Erste Bank Sparkasse	1993-	93-99	23.7
M	Erste Bank Sparkasse	1993-	93-99	21.5	Y	Societe Generale	1991-	94-97	25.3
AA	Universal Banka	1993-99	94-97	21.7	P	Hypo-Bank	1992-	93-98	25.7
P	Hypo-Bank	1992-	93-98	22.1	R	Interbanka	1991-	92-99	26.2
T	Komerčni Banka	1990-	92-99	22.2	A	Bank Austria	1991-	93-97	27.5
R	Interbanka	1991-	92-99	22.5	AA	Universal Banka	1993-99	94-97	27.9
A	Bank Austria	1991-	93-97	23.6	T	Komerčni Banka	1990-	92-99	34.9
O	GE Capital Bank	1990-	92-96, 98-99	25.9	H	Ceskomoravska Zarucni a R.	1992-	94-99	37.2
H	Ceskomoravska Zarucni a R.	1992-	94-99	27.6	O	GE Capital Bank	1990-	92-96, 98-99	50.2

On average DFA yields higher estimates than SFA. Banks which fall into the same category across estimation techniques are highlighted by name. The banks which are among the best and worst 10 banks using the Fourier-flexible specification are highlighted by letter.

6.9.2 Correlates of Profit and Cost inefficiency scores

Next, a series of Ordinary Least Squared (OLS) regressions are employed to estimate the coefficients of firm-specific variables which identify the sources of cost inefficiency. The second stage estimation based on translog results mainly confirms the estimates based on the Fourier-flexible specification. However, in contrast to the Fourier-flexible specification, the X-inefficiency results of the translog specification were correlated with variables also reflecting portfolio positions. The results of the

three sets of pooled ordinary least squares regressions, notably a profit efficiency test, a revenue efficiency test and a cost efficiency test are shown in Table 6-28.

Table 6-28: Correlates of Profit Inefficiency Scores OLS Regressions (t-statistics in Parenthesis)

Independent variables	Profit inefficiency regression	Prob.	Revenue inefficiency regression	Prob.	Cost inefficiency regression	Prob.
Intercept	0.44 (3.49)	0.001	0.32 (2.43)	0.016	0.41 (3.90)	0.000
Liquid Asset Ratio	-0.19 (-2.29)	0.024	-0.21 (-2.58)	0.011	0.06 (0.87)	0.389
Short-term Loans	-0.19 (-1.47)	0.144	-0.17 (-1.32)	0.188	-0.08 (-0.72)	0.472
Financial Investment Ratio	0.06 (0.66)	0.512	0.04 (0.43)	0.669	0.07 (0.95)	0.342
Retail Loan Ratio	0.17 (1.09)	0.276	0.13 (0.87)	0.384	0.12 (0.95)	0.342
Retail Deposit Ratio	-0.01 (-0.29)	0.770	-0.04 (-0.83)	0.410	0.08 (2.05)	0.043
Equity Ratio	-0.19 (-1.59)	0.114	-0.19 (-1.58)	0.116	-0.02 (-0.20)	0.842
Cost Inefficiency			0.31 (3.05)	0.003		
Log of Assets	-0.02 (-0.82)	0.415	0.00 (-0.22)	0.830	-0.04 (-2.37)	0.019
Log of Years in Business	-0.03 (-0.77)	0.441	-0.03 (-0.74)	0.462	-0.01 (-0.22)	0.829
1992	-0.10 (-1.49)	0.138	-0.12 (-1.92)	0.057	0.08 (1.53)	0.129
1993	-0.02 (-0.35)	0.729	-0.05 (-0.84)	0.400	0.09 (1.89)	0.061
1994	-0.09 (-1.66)	0.099	-0.07 (-1.39)	0.167	-0.05 (-1.19)	0.236
1995	-0.09 (-1.76)	0.080	-0.06 (-1.24)	0.217	-0.09 (-2.12)	0.036
1996	-0.06 (-1.30)	0.194	-0.07 (-1.47)	0.143	0.02 (0.49)	0.625
1997	-0.09 (-1.96)	0.052	-0.15 (-3.13)	0.002	0.21 (5.48)	0.000
1998	-0.06 (-1.44)	0.151	-0.09 (-1.96)	0.052	0.07 (1.89)	0.061
Number of years in business:						
2 years	-0.01 (-0.33)	0.742	0.01 (0.14)	0.887	-0.07 (-1.84)	0.068
3 years	-0.03 (-0.78)	0.434	-0.03 (-0.84)	0.403	0.00 (0.11)	0.914
4 years	-0.03 (-0.86)	0.394	-0.02 (-0.56)	0.577	-0.04 (-1.21)	0.227
5 years	-0.01 (-0.19)	0.848	0.01 (0.27)	0.788	-0.06 (-1.78)	0.077
6 years	0.00 (0.10)	0.919	0.01 (0.33)	0.743	-0.03 (-0.85)	0.398
7 years	-0.02 (-0.37)	0.709	-0.01 (-0.14)	0.891	-0.03 (-0.94)	0.351
8 years	-0.01 (-0.16)	0.874	-0.01 (-0.25)	0.801	0.02 (0.34)	0.734
9 years	0.13 (1.63)	0.105	0.13 (1.77)	0.080	-0.02 (-0.32)	0.749
R-squared	0.18		0.23		0.54	
Adjusted R-squared	0.04		0.09		0.46	
S.E. of regression	0.12		0.11		0.10	
F-statistic	1.26		1.67		6.91	
Prob(F-statistic)	0.21		0.04		0.00	
Mean dependent var	0.19		0.19		0.25	
S.D. dependent var	0.12		0.12		0.13	
Sum squared resid	1.84		1.72		1.28	
Durbin-Watson stat	1.50		1.48		1.32	

Concentration on liquid assets decreased both profit and revenue inefficiency. The results also show that retail deposits increased cost inefficiency. The evidence also reveals that cost inefficiency significantly correlates with revenue inefficiency. Cost

inefficiency increased revenue inefficiency, as was also proved in the previous regression (see Table 6-17). The asset variable showed an inverse relationship with the dependent variable cost inefficiency, as in the previous case. It reflects the fact that bigger institutions were relatively more cost efficient. As mentioned in previous chapters, big banks were likely to have achieved some economies of scale and scope from their comparative advantage of having an extensive branch network available. This may be one cause of lower cost-inefficiency at big banks. The regression results also showed that the banks had lower revenue inefficiency in 1992. The year 1993 increased cost inefficiency but in 1995 cost inefficiency was reduced. Banks also performed better in 1994 and 1995 in the profit inefficiency category. In 1997 both profit and revenue inefficiency were reduced, but cost inefficiency increased. In 1998, revenue inefficiency was reduced, while cost inefficiency increased. The results for the years 1994 and 1995 in the profit category, the results for the years 1997 in the profit and revenue categories as well as the year 1998 in the revenue inefficiency estimate oppose the findings in the estimates based on the Fourier-flexible specification. The length of banking experience, i.e. the number-of-years-in-business variables reveal that being in business for at least five years is likely to reduce cost inefficiency. As was the case in the previous estimate, the number of years in business up to five years was associated with lower inefficiency in the cost category, while being in business up to nine years was associated with higher profit and revenue inefficiency in the profit and revenue regression.

6.9.3 Separating Foreign and Domestic Banks

Next, domestic banks were considered on their own and the translog cost (profit) function was used to estimate inefficiency scores for banks in the sample. The results of this approach (shown in Appendix A6-9-3a) yielded 3.8 and 3.5 points lower cost inefficiency scores for SOBs and NEBs, respectively, comparing the results of the

translog specification based on the pooled sample where domestic and foreign banks were considered jointly.

In the cost category both estimation techniques, i.e. SFA and DFA, point to the following “best-practice” banks, namely Prvni Mestska Banka (4 times), Union Banka (4 times), Ceska Exportni Banka (3 times), IPB (3 times), and Universal Bank (2 times). This implies that NEBs were more cost efficient than SOBs. However in the profit category SOBs seem to perform better than in the cost category. CSOB (11), GE Capital Bank (2), Ceska Sporitelna (1), Komerčni Banka (1), and Bankovni dum Skala (1) are among the “best-practice” banks in the profit category.

Analysing the correlation between such inefficiency scores and other organisation specific characteristics by employing OLS regression reveals that concentration in liquid assets decreased profit and revenue inefficiency, while financial investments increased profit inefficiency among domestic banks. The evidence also reveals that cost inefficiency increased revenue inefficiency. The number-of-years-in-business variable yielded a significant relationship. Being in business for at least seven years was found to reduce cost inefficiency. It reveals that institutions with more banking experience are likely to have lower profit and revenue inefficiency. Revenue inefficiency reduced during the year 1993 and 1997. However during 1996 and 1997 cost inefficiency increased.

Considering foreign banks separately using the translog specification, the evidence reveals considerably lower inefficiency scores (shown in Appendix A6-9-3b). Overall, the pooled average estimate indicates a cost inefficiency of 12.3% and a profit inefficiency of 4.4%. Observing the inefficiency trend over the sample years, cost inefficiency decreased from a high of 11.8% in 1993 to 5.5% in 1997. The decrease continued after a slight increase in 1998. In the cost category the following were “best-practice” banks across both techniques: Societe Generale (7 times), BNP-Dresdner Bank (4 times), Bank Austria Creditanstalt (2), Erste Bank Sparkasse (1), GE Capital Bank (1), Credit Lyonnais Bank (1). In the profit category the following were selected as the “best-practice” banks across both estimation techniques: Hypo-

Bank (5), Bank Austria Creditanstalt (3), BNP-Dresdner Bank (2), GE Capital Bank (2), Credit Lyonnais Bank (1), Zivnostenska Banka (1), Bank Austria (1), Citibank (1).

OLS regression results were conducted to see whether characteristics peculiar to foreign banks had affected inefficiency. In contrast to previous OLS regressions, where all banks were considered jointly, concentration in liquid assets increased cost inefficiency. Retail deposits increased both profit and cost inefficiency. Cost inefficiency increased revenue inefficiency and during the year 1998 profit inefficiency increased.

6.10 Conclusions

This chapter uses panel data econometric estimates to analyse cost and profit efficiency in commercial banking in the Czech Republic over the 1992-99 period. Because there is no agreement on how to measure X-inefficiencies in banking, two distinct approaches, namely the Stochastic Frontier Approach (SFA) and the Distribution Free Approach (DFA) were employed in order to find out whether there are any consistencies. First, a global cost (profit) function specification, notably the Fourier-flexible, is used as a frontier in studying the efficiency of the Czech banking sector. Second, the translog cost (profit) function was estimated. In both, a series of Ordinary Least Squared (OLS) regressions were employed to find possible causes of such inefficiency. The chapter identifies that transitional environment affected the performance not only of domestic but also of foreign banks with long experience in financial markets.

The evidence provided from the Fourier-flexible specification suggests that, on average, profit inefficiency was higher than cost inefficiency. Cost inefficiency shows a decreasing trend which was interrupted in 1996 and 1997. During 1997 inefficiency was highest among SOBs and NEBs, but not among foreign banks. In the cost category, on average SOBs seem to be more inefficient, while NEBs seem to be least

inefficient. In the profit category foreign banks seem to be least efficient, while SOBs were most efficient. The inefficiency scores resulting from the SFA and DFA do not conform with each other. In general, DFA scores in the cost and profit categories seem to be lower than SFA scores. The cost inefficiency ranking across both techniques, however, shows some conformity in as much as the ranking of banks were similar in several instances. For instance in the cost category Ceska Exportni Banka, an NEB, has the lowest inefficiency score using both SFA and DFA techniques, while in the profit category Prvni Mestska Banka, an NEB, has the lowest inefficiency score using both techniques. Furthermore, both estimation techniques conform on the following: the DFA shows that highest cost inefficiency was recorded among SOBs, while NEBs, on average, seem to perform better than foreign banks. In the profit category foreign banks seem to be least efficient, as also found by the SFA technique. However, DFA profit inefficiency scores show that NEBs were best performers and not SOBs, as derived from the SFA technique. Clarity was achieved by looking at “best-practice” banks across both techniques. In both profit and cost category NEBs seem to perform better than SOBs.

Ordinary Least Squared (OLS) regressions shed some light on the relationships between financial institution efficiency and organisational structure. In this respect, the evidence suggests concentration in liquid assets, large size and being in business for at least five years have a significant influence on efficient outcomes.

The inefficiency scores based on the translog specification were relatively higher than that of the Fourier-flexible specification. Furthermore, in contrast to the results obtained from the Fourier-flexible specification, cost inefficiency was higher than profit inefficiency. Estimates of efficiencies by the DFA frontier technique were lower than those of the SFA estimates. In addition, according to both techniques profit inefficiency was lower than cost inefficiency. Both techniques rank banks almost identically. In the cost category based on SFA foreign banks appear to have higher cost inefficiency while the NEBs performed best. Both techniques show that in the profit category, foreign banks were least efficient while SOBs seem to perform better.

This is in conformity with the results based on the Fourier-flexible function. This may imply the presence of managerial inefficiencies also in foreign banks. In the cost category of the 10 banks with the lowest inefficiency only four of these banks were foreign. Foreign banks were also not selected as frequently as one would expect as “best-practice” banks for the calculation of the inefficiency scores, which supports the above assertion even further. “Best-practice” banks were more often domestic banks. These results highlight several points. First, the SOBs have proven hardier than expected. However, the relatively satisfactory X-efficiency performance of old banks may be the result of measures taken to relieve them from the inherited bad loans and the subsequent recapitalisations, while the performance of foreign banks may be associated with start-up cost. In fact, towards the end of the period studied the foreign banks had lower inefficiency.

The estimation of the coefficients of firm-specific variables which identify the sources of cost and profit inefficiency scores resulting from the Stochastic Frontier Approach mainly confirmed the OLS regressions based on the results obtained from the Fourier-flexible specification. The estimated coefficient of the asset variable, when regressing profit inefficiency on a set of variables, is significant. Large banks with an extensive branch network seem to have lower profit inefficiency. This evidence could explain the relatively higher average X-efficiency of SOBs in the profit category derived from the two different frontier techniques. Relating the inefficiency measure to the number-of-years-in-business correlates showed that SOBs required trained personnel to improve efficiency. Only three types of variables were found to yield new results when translog inefficiency scores were used as regressands: retail deposits increased cost inefficiency; being at least two years in business improved cost inefficiency; and macroeconomic turbulences did not always lessen efficiency. OLS regression based on the inefficiency scores resulting from separated foreign banks’ data also indicates that retail deposits increased cost inefficiency.

Across different models of the error term as well as cost (profit) functions the evidence identifies domestic banks as banks with the lowest inefficiency in both cost

and profit categories. Ceska Exportni Banka and Union Banka, both newly established domestic banks, were identified as the most cost efficient banks. The evidence further identifies Prvni Mestska Banka and CSOB as banks with the lowest profit inefficiency. Nevertheless, low average inefficiency scores of domestic banks do not preclude foreign banks from being anchor banks for the calculation of inefficiency scores. In fact across different cost and profit specifications and frontier techniques two foreign banks, namely Credit Lyonnais Bank and Hypovereinsbank in the cost and profit categories, respectively, were frequently identified as “best-practice” banks. Evaluating foreign banks separately from domestic banks identifies Societe Generale and Hypo-Bank as banks with lowest inefficiency in the cost and profit category, respectively. The practices of these banks may be identified as “best-practice,” and should be adopted if possible. Similarly, business policies and procedures should be adjusted to avoid “worst-practice”. Consequently, it can be concluded that a liberal entry policy for foreign banks is a prerequisite for effective competition in the banking sector. The competitive pressure coming with foreign banks may force domestic banks to cut costs and to develop new lines of businesses, in addition to the competitive pricing of both deposits and loans. Foreign banks permit both the training and immigration of skilled banking personnel.

This empirical evidence has two important limitations. First, the good performance of some banks may have been due to capital infusion by the government. Second, the financial data obtained from annual reports may not have been computed according to market type criteria. Given the supervisory and regulatory deficiencies the data reported may have been adjusted shortly before publishing. This may have led to a selection of wrong “best-practice” banks. With the accumulation of more reliable accounting data, it is to be hoped that more appropriate estimates can be obtained. Third, given that big banks monopoly has been preserved for quite some time during the transition period the relatively better performance of these banks may be adhered to monopoly rents. This assumption may be questioned because big banks did not always availed of a profitable income base because their clients were not only hit by

the transitional recession but were also requiring restructuring. The empirical finding which pinpoint CSOB as “best-practice bank” may be due to the bank’s low risk portfolio associated with its main business in foreign trade financing.

CHAPTER SEVEN

CONCLUSIONS

This final chapter summarises the main findings of the study. The Czech experience is put in perspective to appreciate the implications of the findings.

7.1 Summary of the Main Findings

One strand of knowledge in the literature of economies in transition supports the pursuit of a policy which emphasises a rapid but controlled transition to market economics. A number of benefits, in particular low inflation and low indebtedness, are emphasised. In the Czech Republic after the Velvet Revolution the Government pursued a policy which emphasised a rapid but controlled transition to market economics. And compared to Poland and Hungary³³⁷, at the outset, the Czech Republic did not suffer from high inflation or great shortages and indebtedness was low. A mass privatisation scheme begun to be implemented in 1992, which enabled the public to participate in the reform process by acquiring ownership in large-scale state-owned enterprises (SOEs) via vouchers. This approach enables a rapid privatisation of SOEs. By the time the second wave of the voucher privatisation programme was completed in March 1995, more than 60% of national property was privatised, resulting in the private sector generating approximately 70% of GDP in 1995, compared to only 3% in 1989. Ownership and control were concentrated in the hands of investment privatisation funds (IPFs) as was initially expected by the designers of the mass privatisation scheme to overcome the problem of dispersed ownership. As regards the banking system, the big banks were relieved of their inherited non-performing loans early on by a transfer to the Consolidation Bank

³³⁷ Shock therapy applies to Poland and to a lesser degree to Hungary, where it was much more gradual.

(KOB) and, in order to initiate competition, many small banks and foreign banks were allowed to enter the banking market.

However, in spite of all this, signs of economic decay soon became apparent. Besides several recapitalisations of its own banks, the Government also recapitalised its distressed secondary banking system through several recovery and rescue approaches. As regards the outcome of the recapitalisation and recovery approaches, the big banks could retain considerable market power both on the deposit and the lending sides for almost a decade by a transfer of non-performing loans to the KOB. The rehabilitation attempts of the secondary banking sector were manifold. Those banks which failed to meet the capital requirement of 8% by 31 December 1996 were subjected to one of the following measures: decrease of initial capital and introducing conservatorship; liquidation; sale; or increase of initial capital by existing shareholders or a new investor. Out of the 18 banks involved in this programme, only two banks were liquidated immediately. The remaining banks were either liquidated or merged, but only after failed attempts to find a new investor or to carry out a merger of the bank with another bank. Several aspects of the Consolidation Programme II were likely to induce moral hazard behaviour on the part of bank management of those banks in which rescue measures were taken. Firstly, immediate liquidations were allowed in a few cases only. Secondly, the supervisory authorities did not give banks much incentive or encourage them to find solutions for their own banking problems. Due to the bad state of the banks under conservatorship, the task of finding a strategic partner was taken over by the CNB. Because several banks were under special supervision, the conclusion that sound banks also gambled on the possibility of government bailouts cannot be dismissed. The Stabilisation Programme initiated shortly afterwards at the end of 1996 gave the opportunity to ailing small banks to transfer non-performing loans to the Ceska Financni on condition that banks agreed to meet the Stabilisation Programme's pre-set target ratios and that banks should submit reorganisation plans. Yet, neither illiquid small banks joining the Stabilisation Programme nor those joining the Stabilisation Programme voluntarily

could succeed in improving liquidity. Most banks failed to meet the prescribed targets and required further rescue measures. The Stabilisation Programme was likely to induce moral hazard problems, primarily because any bank in a liquidity crisis could use Ceska Financni as a dumping ground for non-performing loans unless a credible reorganisation plan was presented. However, this requirement was likely to induce moral hazard behaviour on the part of bank management because the latter was likely to have informational advantages over the supervisory authorities.

Analysis of the financial data provided in **Chapter Three** suggested that banks with different types of owners and structures have been experiencing different degrees of decline in efficiency and profitability. As far as the performance of the successor banks relative to that of the banking system is concerned, the evidence suggested that the performance of domestic banks remained behind foreign banks. Ratio analysis shows that, while newly established banks (NEBs) recorded negative net income in 1994-96, state-owned banks (SOBs) reported higher costs than their foreign counterparts. An analysis of the maturity structure of the loans granted by banks of all types showed a preference for short- and medium term loans. Only towards the end of the period studied did banks begin to grant more long-term credits, reflecting a positive outlook towards future economic performance. In 1994-97 the share of long-term loans among NEBs was higher than that of foreign banks which suggests that the lending policies of NEBs were at a higher level of risk.

The causes of these differences in banking strategies and performance were investigated by looking at the quality of corporate governance within banks in **Chapter Four**. On the basis of case studies of various groups of banks it is argued that different degrees of efficiency and profitability arose because of differences in the quality of corporate control within banks. First, the quality of corporate governance was evaluated by looking at two ratios: the ratio of financial indebtedness (ratio of debt to equity) measures the degree of protection provided to depositors; the ratio of financial independence (ratio of equity to debt) measures the degree of protection provided to shareholders. When the quality of corporate governance was evaluated by

looking simply at the level of protection for investors and shareholders, investor protection appeared to be worst amongst NEBs, and on average better among foreign banks, though the case of the latter was hardly different from that of the SOBs. While best protection was likely to be given by foreign banks in 1991-93, SOBs were able to catch up with foreign banks in 1994-99. Only in 1999 as a consequence of restructuring measures was depositor protection in NEBs likely to be better than that of SOBs and foreign banks. In 1997-99 protection of shareholders, in turn, was best among NEBs as opposed to SOBs and foreign banks. This success can be partly attributed to the increases in equity required by regulators since the secondary banking crisis of the mid-1990s, and due partly to the improved corporate governance coming with new owners. Ratio analysis shows further that protection for shareholders in SOBs and foreign banks differed only slightly. The protection of shareholders was better in foreign banks than in SOBs from 1991 through 1994, while the order was reversed from 1994 onwards. Low levels of equity in foreign banks towards the end of the period studied were attributed to an increased confidence of these institutions in operating in a risky transitional environment. An increasing trend of the debt to equity ratio in 1991-99, and the decrease of its inverse, may have followed from an increase in deposit accounts in foreign banks. It may have also followed from the law restricting banks' acquisition of stakes in non-banks.

Because it was not possible to develop an empirical model which identifies and quantifies all possible influences on bank performance, resort was made to a fieldwork survey, notably a questionnaire survey and a series of semi-structured interviews. The evidence coming from the fieldwork suggests that there are major differences in the quality of corporate governance among various groups of banks supporting the findings from the ratio analysis. Corporate governance problems were found to be less acute in foreign banks than in domestic banks. A better performance in foreign banks was *inter alia* attributed to the availability of qualified staff, a high share of foreign currency denominated loans, reflecting the risk-averse lending policies of foreign bank managers, and the absence of an extensive branch network.

Furthermore, the findings reveal that several special measures were taken to avert possible moral hazard. In particular during the initial phases of their entry into the Czech banking market foreign banks refrained from employing local management to avoid the risk of corruption through being embroiled with politicians. Nevertheless, because foreign banks were experiencing high management turnover the presence of corporate governance problems could not be entirely discounted.

In contrast, case studies of SOBs noted that these big banks were experiencing ineffective corporate control. It was argued that this was due, on the one hand, to difficulties of principal-agent relationships between the utility managers and stockholders, and between the regulators and the consumers, i.e. banks, on the other. The state owners' limited exercise of corporate control was attributed to the major role assigned to the big banks in financing capital-starved SOEs. Imposing effective corporate control meant the bankruptcy of the SOEs, and this was against the interests of the politicians in power. As a consequence, the intermingling of ownership structures between SOBs and SOEs helped to maintain old links inherited from the past and supported the creation of new ones in the form of networks and non-market links. Indeed, the privatisation approach involved banks as creditors to enterprises, on the one hand, and gave them the status of investors through their links to investment funds on the other. Principal-agent problems and therefore moral hazard in SOBs were additionally exacerbated by weak regulation and supervision. This may suggest that the widely held view that bad loans resulted from the learning process being undertaken by their managers applies less to SOBs than was initially assumed. Hence, it is argued that the implementation of the restructuring and recapitalisation programmes under these conditions was hardly conducive to an improvement in profitability and efficiency; instead the recapitalisations induced moral hazard behaviour on the part of bank managers.

On examining the case of the NEBs, besides the question of how well qualified the private owners were to run a bank, survey evidence has suggested that the owners were more likely to be reluctant to pursue active ownership participation in

their associated banks than was observed in SOBs, firstly because no significant capital was at stake, secondly because of the limited liability of the bank owners, and thirdly, because moral hazard incentives were increased through the Government's extended support for banks in distress.

An analysis of the quality of corporate governance in small and medium size banks with foreign strategic partners (FSPs), showed that significant restructuring measures were subsequently adopted and that efficiency improved, compared to the previous state of the banks studied. This was attributed to various measures adopted by the FSP as soon as privatisation deals were finalised. The findings show that these measures were capital injections, increased provision for bad assets, investment in information technology, organisational changes, taking seats on the board of directors and supervisory board, and appointing new management.

Evidence was provided that the presence of foreign banks was in fact driving domestic banks to enter market niches and that small banks were taking foreign banks as a benchmark for improving the quality of services offered. For small banks the primary market was out of reach, given the costs associated with establishing retail banking. Thus, entering market niches was crucial if small banks wanted to build up working capital. Survey evidence has further suggested that foreign banks were not able to provide solutions on a significant scale for the problems associated with the transition. However, staff movements from foreign banks to domestic banks have helped to overcome the problem of shortages of qualified staff, particularly during the initial stages of the transition.

Chapter Five evaluated factors which were likely to induce moral hazard within banks thereby undermining the quality of corporate governance. This was done by looking at the characteristics of the bank restructuring programmes adopted. It was concluded that regulatory and supervisory deficiencies as well as the restructuring measures adopted had differing impacts upon activities of banks with different types of owners. Appreciating that the recurrence of non-performing loans in big banks soon after a transfer to the KOB in 1991 was due partly to the Government's strategy for

avoiding unemployment, it was argued that the recurrence was nevertheless due to moral hazard. Several reasons were identified in support of this assumption. One was the Government's failure to make people believe that the transfer of loans to the KOB was a once-and-for-all event. A second was the gradual amendment of prudential regulations and the exemption of the SOBs from bankruptcy. A third was that the transfer of loans to the KOB was likely to deprive banks of the potential market discipline which comes with the selection of best practice banks by enterprises.

As regards moral hazard in small banks, it was argued that both the Consolidation and the Stabilisation Programmes were highly conducive to moral hazard. Several deficiencies of these two rescue approaches were identified. Concerning the Consolidation Programme II, it was argued that it created moral hazard because banks were only allowed to fail after a number of rescue attempts. Furthermore, the Consolidation Programme gave little incentive to bank owners and managers to attempt restructuring. The requirement to submit reorganisation plans to qualify for the Stabilisation Programme was found to be inadequate, given that the CNB had neither the qualified staff to evaluate such proposals realistically, nor a sufficient number of supervisory staff to appoint to participating banks to supervise the fulfilment of their targets. Furthermore, the requirement to meet certain predefined ratios in an environment with regulatory deficiencies was found inappropriate in particular because nothing was inhibiting bank managers from adjusting their financial statements shortly before publishing them.

Besides moral hazard issues, it was argued that a further cause of the low levels of profitability of domestic banks, compared with those of the foreign banks, was their ability neither to impose bankruptcy upon debtor enterprises nor to secure control of collateral in cases of non-payment of debt. Because of this problem, foreign banks were found to ration the supply of funds to domestic enterprises. Evidence was also provided that the inability of the creditors to foreclose and seize collateral was impeding diversification by the domestic financial services industry. Financial

institutions were likely to abstain from offering banking products which required collateral.

The potential benefits brought by foreign banks and FSPs to improve the competitiveness of domestic banks was also addressed. Because big banks require a challenge to their monopoly power and small banks need competitive pressure to enter market niches, it was argued that foreign bank entry was essential. Evidence was also provided that foreign banks mainly followed their clients and that their presence was related to FDI. Therefore, it appeared that domestic enterprises, apart from those with a monopoly status, were hardly benefiting from foreign banks on the market. Nevertheless, it was argued that in the long term domestic enterprises may benefit from the presence of foreign banks. This assertion was based on the continuous entry of FSPs by the acquisition of loss making banks, the rationale behind setting up subsidiaries which allows the establishment of branch network, a reduction in FDI which may force foreign banks to design products for domestic entities, and the erosion of one of the main competitive advantages of the foreign banks in interest rate differential.

A further topic of investigation was the possible sources of funds to cover the high expenses incurred by the Government in rehabilitating its banking sector. It appeared that, towards the end of the period studied, CNB profits, one source of revenue which the Government can draw from the financial system, declined substantially. This was attributed to the increasing deductibility of specific provisions on classified loans, and full tax deductibility of accrued interest on non-performing loans. As provisions among sample SOBs and, in particular, NEBs and privatised banks were highest, it was concluded that foreign banks, which showed the lowest amount of provision, were the most favourable source of revenue for the Government, strengthening the argument to grant free entry to more foreign banks. Neither the KOB nor privatisation proceeds were found to be realistic sources of finance to recover the restructuring expenses of the banking sector. The basic role assigned to the KOB, notably to administer rather than recover bad loans, was criticised and it was argued

that powers to impose a bankruptcy threat upon debtor firms in cases where restructuring plans are not observed may have induced a restructuring of the SOEs at an early stage and hence helped to recover non-performing loans.

Chapter Six commenced by analysing the factors which induced the different performance of various groups of banks, taking an econometric approach and using a Fourier-flexible specification. Applying both the stochastic frontier approach (SFA) and the distribution free approach (DFA), the degree of cost and profit inefficiency was calculated. Having attained the profit and cost inefficiency scores, a series of Ordinary Least Squared (OLS) regressions were employed to find a possible correlation between such inefficiency and other relevant organisation-specific and related variables reflecting portfolio positions and management practices. Controlling for foreign ownership, estimations based on the pooled sample show an average cost (profit) inefficiency score of 27.4% (33.3%). Looking at the inefficiency score of various categories of banking firms, it was found that the cost inefficiency of SOBs was higher, while being lowest among NEBs. However, although SOBs had higher cost inefficiency they had lower profit inefficiency. FBs had the highest profit inefficiency. Next, the coefficients of firm-specific variables which identify the sources of cost and profit inefficiency were estimated. This involved regressing the estimated firm-level efficiencies on firm-specific variables, such as managerial inputs, agency issues and financial structure. The evidence revealed that macroeconomic turbulences, assessed by using year dummies, increased both cost and profit inefficiency. Nevertheless, managerial deficiencies and portfolio quality also affected the efficient performance of banks in the sample. Cost inefficiency seem to have affected revenue inefficiency negatively. Both liquid assets and large size seem to have improved efficiency in the sample banks. Experience in banking business of at least five years was found to be invariable with improved efficiency. The evidence further revealed that historical banks as well as carve-out banks, which were in operation for at least nine years, had higher profit and revenue inefficiencies. This finding was attributed to the lack of qualified staff at these types of financial

institution. Large banks, as opposed to foreign or small banks, had a disadvantage in as much as these were either overstaffed and could not replace staff who had been employed during the Socialist regime, a problem which was not faced by the start-up banks. Nevertheless, the inverse relationship of the number-of-years-in-business dummy variable of nine years may well be due to the higher cost associated with diversification for large banks, as opposed to new entrants. Estimating the Fourier-flexible specification without employing any dummies brought only slight changes to the inefficiency estimates. The pooled average cost (profit) inefficiency estimate was 27.7% (31.6%).

In addition to the Fourier-flexible specification, a translog model was estimated. As was the case before, this was done by controlling for foreign ownership. The evidence revealed a higher average cost inefficiency but a lower profit inefficiency than was found in the Fourier-flexible specification. Cost inefficiency was more than 44%, while profit inefficiency was almost 28%.

In order to find out whether the high discrepancy in the cost category between the Fourier-flexible and translog pooled average scores was due only to differences in size, the domestic banks' data were separated from the foreign banks and an asset size dummy was employed in both cases, substituting the function fulfilled by the trigonometric terms in the Fourier-flexible specification. This made sure that the "best-practice" banks were domestic banks for each year in any case. The evidence in this case revealed almost similar results as those of the translog specification. The pooled average cost inefficiency was 49%, while profit inefficiency was 33.2%. Interestingly, separating domestic banks from foreign banks did not alter the previous findings which showed that the banks with the lowest inefficiency score were domestic banks, namely Ceska Exportni Banka in the cost category and CSOB in the profit category. In other specifications, CSOB was second to Prvni Mestska Banka as a bank with lowest profit inefficiency.

Although the inefficiency scores differed according to the different specifications, one important common result concerned the banks with the lowest

average inefficiency score. Both models and the two different estimation techniques, namely SFA and DFA, consistently ranked Ceska Exportni Banka as the lowest inefficiency bank in the cost category and Prvni Mestska Banka (besides CSOB) as the bank with lowest profit inefficiency. Only when the data from foreign banks were separated and the translog specification was applied did it emerge that the foreign banks with the lowest average inefficiency scores were the Société Generale and Hypo-Bank in the cost and profit categories, respectively. Those banks with lowest average inefficiency are not necessarily the “best-practice” banks. Foreign banks were, however, “best-practice” banks although not as frequently as domestic banks.

The OLS regression based on the translog specification with a foreign ownership dummy mainly confirmed the findings based on the inefficiency scores of the Fourier-flexible specification. The only divergence was that the year-dummy-variables did not always increase inefficiency, that retail deposits increased inefficiency and that being in business for at least two years was associated with lower inefficiency. When the coefficients of firm-specific variables which identify the sources of inefficiency were estimated for domestic banks only, the number-of-years-in-business variable of 7 years was found to decrease cost inefficiency, while financial investments increased profit inefficiency. This may have been due to dubious financial investment products which were launched on the market, in particular during the initial stages of the transition, possibly by foreign speculators. Interestingly, while liquid assets mainly decreased inefficiency, contradictory results were revealed when the data for foreign banks were considered on their own. Liquid assets increased cost inefficiency at foreign banks. An inverse relationship between inefficiency and liquid assets may be due to the risk-averse banking policies of foreign banks in a transitional environment which may prevent them from employing liquid assets for productive investment opportunities. Our field research provided a useful reality check on the specification of the econometric model. Banks with foreign involvement were found to be significantly more efficient than their domestic counterparts, confirming the results from the ratio analysis.

7.2 Implications for the Transition in the Czech Republic

In the face of corporate governance problems in domestic banks a crucial policy issue concerning the Czech economy is the privatisation of its SOBs. However, the privatisation of the SOBs is unlikely to bring significant levels of lending to enterprises, due to a lack of restructuring. In fact, according to the analysis of EBRD, SOEs or enterprises with a majority state ownership showed the lowest incidence of restructuring measures.³³⁸ Furthermore, given a global trend towards the reduction of banks' involvement in the non-financial sector,³³⁹ it is unlikely that the privatisation of banks will bring significant restructuring of the SOEs. Consequently, policymakers need first and foremost to promote the restructuring of the enterprises and eventually to close unproductive units. Indeed, the banking system has remained for almost a decade a crucial institution in enabling Governments to soften the budget constraint, notably by directing state credits to subsidise SOEs, thereby reducing the pressure for direct state subsidies.

The analysis suggests that foreign strategic partners may be best positioned to improve the quality of corporate governance in domestic banks. It was shown that the involvement of the FSPs in small domestic banks was associated with significant improvements in these banks' profitability and efficiency. Similarly, in the case of big banks, FSPs were found to be associated with improvements in technology and profitability (e.g. Zivnostenska Banka). These findings are in conformity with other case studies which provide evidence that strategic foreign investors with a large financial stake can contribute to the efficiency and health of privatised banks, bringing both expertise and capital into the bank.³⁴⁰ This form of transfer of expertise has proven to be much more effective than when it is provided through twinning arrangements and other forms of technical assistance. In case of IPB, however, it was

³³⁸ Transition Report (1995).

³³⁹ Dilova-Kirkowa, S. (2000, p. 3-5).

³⁴⁰ See Meyendorff, A. and E. Snyder (1997).

not possible to investigate the quality of corporate governance particularly because at the time of the survey the bank had recently been privatised with an FSP. During the fieldwork in 1998 it was already known that the FSPs were not interested in retaining the bank in the long term. As it turned out, in 2000 the bank was stripped of its assets. Therefore, it was suggested that the sale of a bank to an FSP may require special arrangements to avoid asset stripping. Any proposal submitted on the planned restructuring measures, or any organisational changes made in the wake of a privatisation deal need to be considered with care as these may have been put in place to ease the pursuit of the FSP's own strategies. This implies that the supervisory authorities need to play a crucial role in the privatisation of their banks and make regular checks concerning any changes which may make asset stripping easier.

In addition to FSPs, foreign bank subsidiaries are likely to play a crucial role in improving the competitiveness of domestic banks. In particular, the evidence provided suggests that foreign banks are challenging both big banks and small banks. While big banks were made to compete for blue chip companies mainly targeted by foreign banks, small banks were inspired to enter market niches. Therefore, opening up the banking sector to foreign competition and hence competitive pressure seems to be vital in a banking system where a series of rescue approaches for ailing banks had increased moral hazard incentives. The strategy to restrict the entry of foreign banks only to their participation in the privatisation of domestic banks may reduce potential efficiency gains in the whole banking system.

7.3 Implications for Banking in other Transition Economies

The experience of the Czech approach to bank restructuring has several implications for banking reform in other TEs. **First**, the KOB approach applied in the Czech Republic calls into question the notion that relieving banks of inherited bad loans would give them time for consolidation, to concentrate on restructuring rather than wasting managerial time on the burdensome task of calling in the loans. This is

because, if it had done so, the signs of failure and inefficiency - such as the recurrence of non-performing loans and repeated recapitalisations - would not have resurfaced. As it turned out, in the Czech case loans were extended to support inefficient SOEs via the banks. The voucher privatisation in the Czech Republic turned out to be a pseudo-privatisation because, taking into consideration indirect property distribution, state responsibility in the banking sector remained high. Similar arguments apply to the enterprise sector. Under these conditions the existence of soft budget constraint was likely to induce SOEs to run at a loss and require a subsidy from the fiscal deficit or SOBs.³⁴¹ From the Czech case lessons can be drawn that the transfer of non-performing loans to a hospital bank may be beneficial if a market type institutional framework promoting prudent lending is in place. A further factor which might undermine the notion that a hospital bank would enable banks to concentrate on more productive activities is related to the organisation and powers given to such an institution. The Czech KOB, like other financial institutions, was neither equipped to pursue restructuring nor able to declare debtor enterprises bankrupt. Thus, exempted from the risk of bankruptcy, borrowers were additionally exposed to increased moral hazard incentives resulting from the lack of restructuring. Moral hazard behaviour on the part of bank management prevented banks from benefiting from the informational advantages coming with long-term lending relationships. The Czech experience additionally suggests that learning takes time, in particular because of the scarcity of training institutions, and therefore it may be difficult to replace existing staff when there is a lack of qualified staff to turn to. As banking is crucial for the provision of funds to enterprises and hence economic prosperity, it is important that international organisations should help in training of banking staff, for example by encouraging swaps with Western banks.

Second, the Czech case exemplifies that moral hazard created by the desire to prevent bank failures in TEs can be distinct and unprecedented in established market economies. The evidence provided suggests that this is mainly due, first, to

³⁴¹ Aghion, P. and Wendy, C. (1994, p. 134).

underdeveloped accounting and reporting requirements resulting in unreliable indicators for assessing bank performance; second, due to a lack of qualified supervisors with oversight and experience of turning unprofitable banks around. The important point, then, is that attention should focus not merely on the design of a recovery plan, but on the institutional structure in which banks operate and whether it presents an obstacle to any approach taken to prevent a bank failure. Calling in foreign specialists is one option to alleviate the problems associated with lack of qualified staff. The Czech authorities made use of foreign experts when rehabilitating an ailing bank, namely Agrobanka, but this was rather an exception. Furthermore, the training of supervisors is as important as the training of banking staff due to the fact that they are the only people who are expected to spot emerging problems and to take action to prevent them.

Third, the Czech experience further suggests that proposals which call for restricting direct entry of foreign banks will only inhibit the injection of know-how and innovation into the banking industry. Because domestic banks are equipped with knowledge of the local market, they are likely to be better suited to design products for local clients. If market entry to foreign banks is restricted, then the competitive pressure for learning will not be exerted and it is therefore likely that the comparative advantage of domestic banks will remain idle for a long period. It is pointless to restrict entry on the grounds that foreign banks would take the best clients while local banks effectively have to support the economic transition, in as much as, leaving aside the probability that foreign enterprises are willing to borrow only from foreign banks at lower rates, domestic banks are unlikely to come up to the sophisticated services required by foreign enterprises, particularly during the initial phases of the transition. Nevertheless, if it is argued that foreign banks are unlikely to play the lead role in financing the transition, while state owned domestic banks are burdened with the task of absorbing the risk of financing certain segments of the economy, a level playing field can be created by assigning the task of financing the transition to a development bank. Otherwise, loan guarantees might be considered as an alternative to a

development bank. The problem of lack of funding and the capacity to administer an institution in charge of providing funds, thereby encouraging the restructuring of borrower enterprises could be overcome with the support of international institutions which are already involved in the Czech banking system by holding ownership stakes (e.g. EBRD owns 5.92% in Ceska Sporitelna; 7.47% in CSOB; 30% in GE Capital Bank. International Finance Corporation owns 4.39% in CSOB).³⁴²

Fourth, the experience of the Czech Republic also calls into question the notion that the problem associated with mass-privatisation, notably dispersed ownership, which is likely to impede owners in exercising ownership control rights, can be overcome simply by establishing holding companies. However, because of the risk of imprudent dealings, investment funds require first and foremost special regulation and control. In particular, in a transitional environment, the essential components needed to guarantee prudence in investment fund activities are not in place. Institutions responsible for the task of supervising investment funds generally require a long time to set up, as can be observed in developed market economies. In the US, for instance, the task of supervising investment funds is undertaken by the Securities and Exchange Commission (SEC) established in 1933. This institution was set up as a result of the stock market crash in 1929 and revelations of widespread fraud in the aftermath.³⁴³ In April 1997, in the face of increasing economic crime and imprudent dealings in the Czech investment funds, the Government introduced measures to separate commercial and investment banking through Chinese walls. Considering that IPFs started operating in 1993, this was a belated step. Furthermore, at the end of 1997 a law was passed to create a regulatory body similar to the SEC, the effectiveness of which remains to be seen.

Because investment fund activities remained unregulated for a long time, cross-ownership between IPFs and big banks made the latter inflexible because big banks were held hostage by powerful IPFs. If an enterprise was of strategic

³⁴² BankScope as of 2000.

³⁴³ Mishkin, F. S. (1995, p. 42).

importance to an IPF, the associated bank had hardly powers to decide to cease to provide funds. According to the evidence provided in this thesis, banks were unable to carry out effective corporate governance because they themselves experienced too little guidance and control from owners. In cases where representatives were sent to the executive and supervisory boards of firms to fill board seats, conflicts of interest arose between the IPF management and the commercial banking operations. While bank managers had an incentive to expand their loan business and thus to charge high interest rates, investment funds preferred either to opt for high dividends, for profits to be reinvested, or to attract finance for associated enterprises. Overall, however, due to the inefficiency of enterprises, banks perceived the role of an active shareholder to be costly and less profitable. Furthermore, there is evidence that foreign strategic investors and non-bank-sponsored funds are strongly associated with improvements in the performance of Czech enterprises in a positive and significant way.³⁴⁴

7.4 Avenues for Further Research

This research has several limitations and constraints, particularly because its subject is an economy in transition. One limitation could be associated with the general view that interviews are likely to be biased. Nevertheless, confirming the findings through triangulation with other respondents and the extensive use of financial data and ratios, as well as other secondary sources of evidence is intended to control for any biases that may come from the interviewees or the author. A second limitation is the reliability of the published accounting data. Researchers on TEs may have also noticed that sometimes financial data either differs if it is published by different sources, or that a more recent publication does not always correspond in its details to a publication in the past. Such problems were occasionally encountered in the case of ailing banks. The likely reasons for this discrepancy are manifold. One is that if a bank was rescued, usually new capital was injected and the losses encountered in the past

³⁴⁴ Claessens, S. and S. Djankov (1999).

were either taken over by the Government or another investor. High provisions are further possible reasons. Attempts were made to overcome this problem either by choosing those data which are most likely to be realistic. A third limitation is related to the assessment of the lending policies of banks in TEs. The profitability and efficiency of the domestic banks needs to be regarded with care considering in particular that some SOBs were likely to be pressured to make loans to fulfil Government objectives whereas some NEBs were basically established to provide finance to their own enterprises.

Because primary data from domestic banks with an FSP were obtained at a time when the foreign investor had only recently entered the Czech financial market, the data obtained were related to the immediate impact upon corporate governance, profitability and efficiency. While this analysis can thus be relevant for policymakers in the process of improving the efficiency of a country's financial sector during initial phases of the transition period, more accurate assessments and thus proposals could be made by collecting further qualitative and quantitative data as time passes. Furthermore, with the accumulation of data in the years to come, and improvements in their reliability brought by enhanced reporting and auditing systems and adjustments of the regulatory framework to bring it closer to world standards, more accurate assessments will be able to be made using published quantitative data.

Appendices

Appendix A1-1: Financial Accounting and Reporting Systems in Czech Republic and Poland

In the Czech Republic accounting is regulated by decrees issued by the Ministry of Finance, the Commercial Code and the 1992 Accountancy Act. The Czech government is in the process of formulating domestic accounting standards based on International Accounting Standards (IAS). The Czech Accounting Law - Act No. 563/1991 of the Collection of Laws on Accounting - is based on the French model. It follows EU legislation, particularly EU Fourth and Seventh Directives, has been in effect since 1 January 1991. Banks established before 1991 had to convert to the new chart of accounts by 1 January 1993. Companies converted to the new form of accounting from 1 January 1993 to coincide with the date that the new taxation system took effect. The Act on Auditors, Act No. 524/1992, also came into force in January 1, 1993.³⁴⁵ The new legislation of 1993 provides considerably greater flexibility and subjectivity. In case where it is silent on certain issues the pursuit of best practice is in order. Companies are required to apply prudence and provide against bad or doubtful debts in the financial statements. As Price Waterhouse observed in 1995: "The prudence concept (allowing subjective provisions), which was not previously recognised, has not been fully recognised in the Czech Republic."³⁴⁶

In developed market economies to protect the rights of creditors borrowers have to set reserves and provisions, known as legal reserves, reserves required by law, reserves for creditors, reserves created in accordance with company statute or contract, which are incorporated under the balance sheet item equity reserve. In the Czech Republic the law requires joint stock companies and limited liability companies to create reserves however, generally, these funds will be used to rectify any unfavourable results of a company's business.³⁴⁷ A joint stock company is required to create a nondistributable reserve fund from net profits in the first profitable year.³⁴⁸ Thereafter, the company must make annual transfer to the fund out of posttax profits. At least 5% of annual posttax profits must be transferred until the fund is equal to at least 20% of the nominal capital.³⁴⁹ The contribution to the fund from the first net profit must be at least 20% of net profit up to a maximum of 10% of the nominal value of equity. The board of directors decides how the fund should be used. Limited liability companies must also create a nondistributable reserve fund from net profits in the first year in which the company is profitable. This reserve fund should amount to at least 10% of net profit up to a maximum of 5% of the nominal value of equity. Annual transfers of at least 5% of net profits after taxes must be made until the fund reaches at least 10% of the value of equity.

An annual statutory audit in accordance with regulations in the Commercial Code is required for any joint stock company. For limited liability companies, a statutory audit is required only if, at the previous year-end, the turnover for the period then ended exceeded CZK 40 mn (regardless of its length) or the net assets exceeded CZK 20 mn. If a company requires a statutory audit, then the annual report must include a director's report. However, its precise content is not yet detailed in legislation. All joint stock companies must publish an abbreviated balance sheet and profit and loss statement with the economic newspaper *Obchodni vestnik* whereas there are no publication requirements for companies which do not require an audit. Auditing is regulated by the Act on Auditors, effective October 1992, and requires the auditor to express an opinion as to the "fairness" of the financial statements which may induce companies to search for audit firms with most lenient audit opinion in an environment where independent auditing is in its infancy.³⁵⁰ Existing audit experience in the Czech Republic draws strongly on the previous government-based compliance audits and is generally less sophisticated.³⁵¹ Auditors are not required to report fraud to any authorities.

³⁴⁵ See for more information "Czech Republic; Banking System Report," *BankWatch*. August 1996.

³⁴⁶ Price Waterhouse World Firm Services BV, Inc. *Doing Business in the Czech Republic*. Information Guide. October 1995, p. 82.

³⁴⁷ *Ibid*, pp. 61.

³⁴⁸ See the Commercial Code and the Act on Trades, effective January 1, 1992.

³⁴⁹ A joint stock company (a.s.) must have minimum share capital of Kc1 mn and the minimum capital requirement for a limited liability companies (spol. s r.o.) is Kc 100,000.

³⁵⁰ For the Czech perceptions of the 'true and fair view' see Sucher, Pat et al. (1996).

³⁵¹ Price Waterhouse World Firm Services BV, Inc. *Doing Business in the Czech Republic*. Information Guide. October 1995, p. 84.

The Czech banks informational requirements is comparable to the banks in Germany. In Germany banks are effectively both principal lenders and shareholders, which gives them sufficient power to obtain all of the information they require without reliance on the annual accounts.³⁵² In the Czech Republic, as in Germany, banks are also both lenders and shareholders and published disclosures by enterprises can be far less relevant than in the UK for instance. Having the opportunity of picking up the significant information at an informal level by direct access to management and the directors banks might become less interested in seeking disclosures in the financial statements. This might be not detrimental for the accounting and reporting system in a country with a tradition of reliable accounting and reporting standards. However, in a transitional environment such an informational intimacy between borrowers and lenders might inhibit the creation of healthy foundations for reliable accounting and reporting system.

The Polish Accounting Law of 1991 (with subsequent amendments) was introduced to deal with the requirements of a free-market economy and it mainly served a system where accounts were prepared on tax rules. A new Accounting Law, effective 1 January 1995, brings requirements in line with the EU's Fourth Directive, and in most areas is consistent with IAS. The new Law also stipulates that directors may face either a fine or a jail term of up to two years if they do not keep books in accordance with requirements. Auditors certifying accounts not in agreement with the underlying books face the same penalty. The existence of an association for accountants had an impact on the development of a relatively reliable accounting discipline in Poland. The Association of Accountants in Poland (AAP), a department of the Ministry of Finance since 1946, controls the conduct of audits and holds disciplinary hearings. It publishes detailed accounting manuals for all industrial and commercial sectors, as well as providing constancy services to its 130,000 members (including 10,000 chartered accountants).³⁵³ Most of the major differences between Polish and IAS have been removed.³⁵⁴

Accruals Accounting	Revenue and expenses relating to a financial year are recorded in the accounts for that year, regardless of when payment is finally received or paid. This rule requires provisions against obsolete stock and overdue debtors. Provisions are also necessary for definite or probable losses from guarantees, warranties, and other credit operations. Previously bad debt provisions were only recorded upon liquidation or bankruptcy of a debtor, or when a debt became statutorily overdue (after six months).
Consolidated Accounting	For the first time accounts of companies under common control were produced on a consolidated basis. Previously companies only produced stand-alone accounts which could easily be distorted by the results of its trading with sister companies.
Deferred Taxation	Timing differences between the profit for accounting and tax purposes will be reflected for the first time.
Disclosure	Significantly increased disclosure in accounts. Old Polish law requirements rarely produced more than one page of notes. Cash flow statements, accounting policies and other disclosures are now required.

³⁵² Elliott, B. and Elliott, J. (1999).

³⁵³ "Poland; Banking Infrastructure Report." BankWatch. March 1997, p. 11.

³⁵⁴ Ibid.

Consolidated Supervision Standards in the Czech Republic and Poland

According to the Czech Consolidation Measure 1993 a consolidated group consists of the holding company, subsidiaries and associates.³⁵⁵ By consolidated financial statements in the Czech Republic are meant the financial statements of a group of entities which unify the asset and liability positions and the attained economic results of the holding entity with its participating interest in the rest of the entities which it controls or over which it has significant influence.³⁵⁶ The holding company is required to consolidate the group only if the net assets of the group exceed Kc300 mn and net turnover exceeds Kc600mn.³⁵⁷

A cross-national and supranational comparison of the *de jure* requirements for the determination of a group for accounting purposes in the UK, Poland and the Czech Republic reveals the following weaknesses in the Czech and Polish requirements (Table A 1-1).

Table A 1-1: Analysis of *de jure* comparison in a supranational context

Issue	UK	Poland	Czech Republic
Parent/subsidiary relationships:			
• control of the board	C	B	N
• control through agreements with others entitled to vote	A	A	N
Joint venture relationships:			
• joint control definition	A	N	N
Bases for exclusion from consolidation:			
• restrictions on control - explication of restrictions	B	N	N

Source: Craner, John, Table 3 (a) (mimeo).

Key

A = Equivalent to 7th Directive and IAS.
B = Equivalent to 7th Directive only.

C = Equivalent to IAS only.

X = Positive country-specific difference.

N = Negative country-specific difference.

A comparison of the detailed criteria specifying the parent/subsidiary relationship in the UK and Poland reveals that both countries specify voting rights as a criterion in line with the requirements of both IAS and the 7th Directive.³⁵⁸ However, in the Czech Republic there is no explicit mention of voting rights, but reference is made to a share in the 'basic assets.'³⁵⁹ The Czech requirement incorporates an explicit provision on the consolidation by more than one holding entity. But this provision fails to address the situation where one holding entity owns more than 50% of the equity share capital but another entity holds more than 50% of the voting rights.

According to the 7th Directive, control of the board is specified in terms of the appointment and removal of a simple majority of the directors whereas in the IAS, the criterion is voting power or rights of the directors who can be appointed or removed by the controlling entity. The Polish requirement for determining the parent/subsidiary relationship is in line with the 7th Directive whereas the Czech requirements contain no further criteria.

³⁵⁵ For a detailed cross-national and supranational comparison of the *de jure* requirements for the determination of a group for accounting purposes in the UK, Poland and the Czech Republic see Craner, John.

³⁵⁶ Ref. CM 1993, App. 1, art. I, paras. 1 (1). See also 1(2).

³⁵⁷ Price Waterhouse World Firm Services BV, Inc. *Doing Business in the Czech Republic*. Information Guide. October 1995, p. 88.

³⁵⁸ Craner, J. (mimeo, p. 22).

³⁵⁹ Ibid.

An additional important negative country-specific difference is the absence of requirements on consolidation accounting for joint ventures in Poland and the Czech Republic.³⁶⁰ Instead both countries have specific accounting rules for associated companies, which define a group in terms of a parent and associate only (for listed companies in Poland; for all companies in the Czech Republic). Given the development of innovative trading and investment relationships, it may be necessary to devise accounting methods which distinguish between associates and joint ventures.³⁶¹ A further negative country-specific difference is the exclusion and separate regulation of the reforming financial subsidiaries from consolidation, which may be viewed rational given the potentially adverse consequences of banking collapse.

Contrary to the requirements of consolidated supervision standards of the 7th Directive requiring an assessment and supervision of a bank together with a subsidiary, i.e. the financial group as a whole supervision in the Czech Republic was extended only on banks and individual companies but not on the financial group as a whole. Only recently the problem of lack of consolidated supervision standards was addressed with the provision of CNB of July 8, 1999 stipulating the terms and conditions for performing supervision on a consolidated basis.

These weaknesses in Czech requirements impede the flow of accurate financial information on the group as a whole via consolidated financial statements to the bankers whose decisions in turn are apt to be based on wrong assumptions while both favourable and unfavourable trends can go undetected.

³⁶⁰ Ibid. p. 39.

³⁶¹ Ibid..

Table A2-2-1: Largest Funds and Holdings

1. RIF	Investicní banka
2. IPF Komerční banky	Komerční banka
3. SPIF Ceska	Ceská Sporitelna
4. P.I.F.	Ceská Pojiřovna**
5. SPIF vanosova	Ceská Sporitelna
6. SPIF vseobecna	Ceská Sporitelna
7. Harv. Prumyslova hol.*	Harvard Capital & Consulting
8. IIF Zinobanka	Zivnostenská banka
9. Harv. Financní spol.*	Harvard Capital & Consulting
10. Bankovní holding*	Investicní banka

*Holding company **largest Czech insurance company

Source: CNB, June 1996

Table A 2-2-2-1: Consolidation Bank - Credit and Loan Portfolio

Credit Portfolio CZK bn	1991	1992	1993	1994	1995	1996	1997	1998	1999	*2000
TOZ loans	80.1	66.1	62.3	55.7	49.7	42.3	39.4	37.7	33	30
Purchased loans (KB, IB)		15.1	12.3	12.2	11.4	9.9	9.2	9.1	8.4	8
Restructured					2.7	8.6	10.8	11.2	11.9	11
Total old block of loans	80.1	81.2	74.6	67.9	63.8	60.8	59.4	58	53.3	49
New loans			2.3	10.3	13.6	18.2	34.7	67	107.5	154.9
Total loans (gross)	80.1	81.2	76.9	78.2	77.4	79	94.1	125	160.8	203.9
Adjustments		-3	-2.2	-2	-4.4	-9.7	-14.8	-28.1	-59.3	-62.6
Total loans (net)	80.1	78.2	74.7	76.2	73	69.3	79.3	96.9	101.5	141.3
TOZ Clients	3703	3666	3711	3715	3839	3752	3625	3655	3246	2236
year on change %		-1	1.2	0.1	3.3	-2.3	-3.4	0.8	-11.2	-31.1
Total Clients	3703	3775	3816	3790	3996	4044	3950	4045	4748	3745

Loan Portfolio (gross) classification

Total old block of loans	80.1	81.2	74.6	67.9	63.8	60.8	59.4	58	53.3	0
of which classified						50.8	54.6	54.7	53.3	48.9
in %						83.6	91.9	94.3	100	99.8
Loss						39.7	44.9	51.8	52.4	48.5
in %						65.3	75.6	89.3	98.3	99
New loans			2.3	10.3	13.6	18.2	34.7	67	107.5	0
of which classified						13.6	14.6	35.5	72.2	71.4
in %						74.7	42.1	53	67.2	46.1
Loss						4.3	9.3	14.3	52.7	53.5
in %						23.6	26.8	21.3	49	34.5
Total loans	80.1	81.2	76.9	78.2	77.4	79	94.1	125	160.8	0
of which classified				46.2	48.3	64.4	69.2	90.2	125.5	120.3
in %				59.1	62.4	81.5	73.5	72.2	78	59
Loss				39.5	41.3	44	54.2	66.1	105.1	102
in %				50.5	53.4	55.7	57.6	52.9	65.4	50

Source: KOB 2000; * as of September

The Consolidation Bank (KOB) cannot function autonomously and a parallel can be drawn with Germany's Treuhandanstalt.³⁶² Although the latter was "... designed to function in an autonomous manner, it could not be insulated from political pressures, regional politics and bureaucratic red-tapism. It had to function under circumstances beyond its control."³⁶³ In contrast to other banks the KOB is independent and not under the

³⁶² In East Germany the inheritance of non-performing loans was addressed by transferring all former debts of East German enterprises to a separate institution (Treuhandanstalt), i.e. no financial restructuring was necessary. Consequently, the banks were not given incentives to support (poorly performing) SOEs due to their significance in the banks' portfolios.

³⁶³ Gupta, A. (1998).

control of CNB but is directly responsible to the Government. As it is a state monetary institution special regulations apply. The Law on Czech Banks defines the relationship between CNB and the KOB.³⁶⁴ It is such that profits and losses incurred by the KOB are transferred to the Czech national budget.³⁶⁵ The Bank serves as a conduit for the Government's economic policies and as such its activities are too risky to be pursued by a typical commercial bank. An example of this kind of activity is the modernisation of hospitals and the health system using Government finances. The bank has assisted in solving the financing problems of certain large hospitals by offering long-term credits, and participated in the Stabilisation Programme for small banks refinanced through Ceska Financni, s.r.o. In addition the KOB granted loans to people who suffered from floods. The KOB currently participates in the financing of certain development projects in the transport sector (e.g. the modernisation of the Czech Railways). Another function is giving guarantees to foreign institutions willing to invest in the country.

Table A 1: Strategy of the KOB

Strategy of the KOB	KOB provides services exclusively to corporate clients:
<ul style="list-style-type: none"> • support of the process of reviving the Czech economy through realisation of important projects and transactions, • active approach to the so-called block of old loans (i.e. loans from the period before 1990 assumed by KOB from commercial banks in 1991-1992) with the aim of minimising eventual losses, • restructuring the assets of the old block pertinent to the selected larger clients with good potential for development, • financing of reviving and restructuring programmes of larger Czech enterprises • financing of large-scale development and public service projects, in particular in the field of infrastructure (transport, communication, water supply etc.) and environmental protection 	<ul style="list-style-type: none"> • loans and bank guarantees • services related to investment banking • dealing and treasury operations and services • term deposits and other deposit products • maintenance of CZK and foreign currency accounts • electronic payment service (firmbanking) • services related to domestic and foreign payments • guidance, consultancy and mediation of business co-operation • banking and non-banking information, processing reports on KOB clients

Source: KOB

Still, although the KOB has had the status of a full universal bank since September 1997, activities characteristic of a commercial bank cannot be pursued by it. As at 30 June 1997, the KOB is in the process of implementing the strategy for its transformation into a specialized bank. Overall the strategy and services of the KOB are shown in Table A1 and Table A2.

³⁶⁴ The KOB Praha is regulated in accordance to the Czech Banking Act No. 21/1992 Coll. including further amendments of this law. Thus it is similar to any other bank in the Czech Republic. The only difference is that KOB Praha is not a joint stock company (a.s.) but its legal form is a state financial institution (s.p.u.) and its liabilities are guaranteed by the state.

³⁶⁵ KOB is also financially supported by the European Investment Bank.

Table A 2: Activities of the KOB**Old Block of Loans**

- In accordance with the new strategy adopted by the Bank at the turn of 1995, the Bank separated the so-called old block of loans (purchased from selected Czech commercial banks between 1991-1992) from the balance of its loan portfolio and began to implement a system of active management of the old block of loans.
- As a part of the Bank's changed approach, approximately 90% of all credit agreements (both in number and amount of outstanding principal) relating to the old block of loans for permanently revolving stock originally concluded before 1990 have been renegotiated and subjected to the new legal regime of the Czech Commercial Code (most of the loans for permanently revolving stock were originally concluded under the obsolete Economic Code).
- Simultaneously, penalty interest provisions and principal and interest payment schedules of a decisive portion of the permanently revolving stock loans have been renegotiated. The Bank further proceeded to implement an individual management approach to the administration of selected significant old loans (in terms of volume) while small loans contained in the old loan portfolio have been administered on a group basis by industry. This effort is represented by the individually negotiated restructuring of certain loans of the old block. Due to the low credit quality of a number of the assumed loans included in the old block portfolio, the Bank is engaged in a number of lawsuits, including bankruptcy and composition proceedings.
- The Bank endeavours to implement an active management policy also to the low quality part of its old block loan portfolio. This effort is represented by a relatively high number of individually negotiated restructured loans of the old block.

Revitalisation and Restructuring Programmes

- As part of its project financing business, the Bank holds equity interests in a number of key Czech industrial enterprises. The Bank participates in revitalisation and restructuring projects for the Czech economy either based on Government resolutions or based on the results of its own analysis of the client.
- The majority of these capital investments were undertaken by the Bank in its capacity as a conduit for the Government's economic policies.

Source: KOB

One of the advantages of the Consolidation Bank approach is that it was initiated at the beginning of the transition process when a relatively stable exchange rate prevailed, resulting in an early recapitalisation.

Table A2-2-4: Data on failed banks

	Bank	Equity (CZK)	Status at the time of writing	Problem caused by	Beginning of operation	Conservatorship imposed	Licence revocation	Beginning of bankruptcy proceedings	Number of Employees & (branches)	Number of lower organisational units (7)	Expenses of consolidation in millions CZK & Payer (8)
		(0)	(1)	(1a)	(2)	(3)	(4)	(5)	(6)		
1	Kreditni a Prumyslova Banka		i.BP	Bad connected loans	01.04.1991		31.08.1995	02.10.1995			0,6 CNB
2	AB-Banka	75 m	i.L	Prudential excesses	01.04.1991		15.12.1995				2,8 CNB
3	Ceska banka		i. L		18.02.1992		15.12.1995	28.06.1996			
4	COOP BANKA	500 m	i.L	Large potential losses	24.02.1992	23.04.1996	April 1996		249 (7)	10	1,2 CNB
5	Prvni Slezska Banka	500 m	i.L	Corruption and economic crime instigated	12.01.1993		13.05.1996				0,2 CNB
6	Podnikatelska Banka	1 m	u.C	Large reported losses	18.12.1992	06.06.1996	June 1996		171 (6)	5	1,24 CNB
7	Realitbanka	54 m	u.C	loan losses	01.11.1991	10.07.1996	July 1996		5 (0)		0,2 CNB
8	Velkomoravska Banka	1 m	u.C	loan losses	03.11.1992	10.07.1996	July 1996		217 (12)	7	1,15 CNB
9	Agrobanka Praha		i.L		01.07.1990	17.09.1996	02.09.1998		3384 (12)	342 +1 abroad	
10	Kreditni Banka Plzen		i.L		01.01.1991		01.10.1996				
11	Banka Bohemia	800 m	i.L	Fraudulent security issue	01.02.1991		March 1994				11,7 CNB
12	Ekoagrobanka	501 m	i.L	Bad connected loans	01.11.1990		January 1996		19		9,0 CNB
13	Bankovni dum Skala		*		13.12.1990				5		3,18 CNB
14	Baska		i.L.		30.08.1990		31.03.1997				
15	Evrobanka +		i.L.		01.10.1991		30.06.1997		353 (23)	18	}8,9 CNB
16	Foresbank		*		07.09.1993				397	30	
17	Pragobanka				11.09.1990		24.10.1998				
18	Universal Banka				27.01.1993		10.02.1999				
19	Moravia Banka				12.05.1992		09.11.1999				

Total loss incurred: 40.27 bn CZK; Actual acquisition by the Ceska Finaneni 12 bn CZK.

Sources: CNB and HN of 30.1.1998 and Thomson BankWatch, Inc. August 1996.

u.C = Bank under Conservatorship

u.C+ = Acquired by FSP while under conservatorship

i.L = Bank in liquidation

i.BP = Bank in Bankruptcy Proceedings

= Taken over by Union Banka, a small regional bank in Ostrava.

Table A2-3: Average Interest rates - yearly

	1994	1995	1996	1997	1998	1999
Credit interest rates	13.11	12.8	12.54	13.22	12.86	8.69
Deposit rates	7.06	6.69	6.79	7.72	8.09	4.47
Demand deposits	2.56	2.54	2.55	2.24	2.01	1.83
Time/savings deposits	10.63	10.22	9.45	10.43	10.53	5.6
Interest margin	6.05	5.85	5.75	5.5	4.77	4.22
Long term interest rates						
-5 year government bonds yield to maturity	9	9.3	10.03	10.53	12.12	7.57
Average real credit rates (a)	7.1	5.2	7.9	7.1	10.4	5.1
Average net real interest rates - (b) time/savings deposits	-1.1	0.8	-0.5	-1.1	2	2.2

Source: Czech Ministry of Finance. (a) deflated by industrial producer's price index;

(b) net of 15% income tax, deflated by CPI

Appendix A 2-2-2-1a: Historical background and the present status of the five financial institutions supporting the NBC

Ceska Statni Sporitelna and Slovenska Statni Sporitelna (Czech and Slovak State Savings Banks) were founded in 1969. Their role was to collect deposits from and lend to individual citizens in the Czech lands of Bohemia and Moravia. Surplus funds were transferred to the State Bank. At the beginning of 2000 the state interest in Ceska Sporitelna was sold to Erste Bank Sparkassen of Austria.

Investicni Banka (Investment Bank) conducts largely corporate business. The bank was established in 1948 from a merger of 5 former private sector banks to finance and manage long-term investment projects. It lost this role to the State Bank in 1958 and concentrated mostly on the administration of the state's financial assets and liabilities, but this activity gradually diminished and by 1989 the bank had become virtually inactive. In March 1992, the Investment Bank was divided in a 2:1 ratio into the Prague-based Investicni Banka and the Bratislava-based Investini a Rozvojova Banka.

The **Czechoslovak Postal Savings Bank** split as part of the arrangements for the federal republic's dissolution into the Postal Bank and its Slovak equivalent (Postova Banka) at the beginning of January 1993. In January 1993 the first banking merger took place in the Czech Republic. It was the first example of an acquisition to bridge the retail and corporate banking markets. The Investment Bank acquired a 48.7% stake in the Postal Bank, which has the largest network of retail outlets in the republic.

The new bank was named *Investicni a Postovni Banka (IPB)*. In 1998 a stake of 46% was privatised to Nomura. In June 2000 the bank was put under the conservatorship of the CNB. At the same time CSOB acquired IPB's business which enables the former to benefit from IPB's retail banking activities.

Komerční Banka (Commercial Bank): ³⁶⁶ In January 1990 Komerční Banka was established following its separation from the former Státní Banka Československá in the Czech Republic. It took over 84 of the State Bank's branches and became the second largest commercial bank in the Czech Republic. The bank is the Czech Republic's major commercial bank and operates a network of over 300 points of sale. Approximately 60% of Komerční Banka's shares are owned by the NPF with a significant share in hands of foreign shareholders also through Global Depository Receipts (GDRs) traded in the London Stock Exchange. Komerční Banka currently faces the prospect of the sale of the state's majority share in the Bank to private owners.

Czechoslovenska Obchodni Banka - CSOB- (Czechoslovak Foreign Trade Bank): formed in 1965 and organised as a joint-stock company, it financed foreign trade transactions, acted as the Government's foreign borrower and managed the external debt.

The difficulties of the CSOB were dealt with in December 1992 under separate legislation. Before 1990 the bank had been responsible for about 80% of all Czechoslovak foreign trade finance and in that role had inherited large unpaid debts in non-convertible currencies owed by countries such as Iraq and former Yugoslavia. In all, non-performing overseas loans on its books totalled CZK71 bn (\$2.5 bn). In 1993 the CSOB lost its federal status and was recapitalised. Its uncollectable trade-related loans owed by non-hard currency countries such as Iraq and the former Yugoslav federation were accepted by the two republics' Governments as their responsibility, and some CZK 65 bn worth of liabilities were taken over (in a 2:1 ratio) by the two republics' finance ministries. This left the Foreign Trade bank with a much stronger balance sheet. The bank was then 'privatised', its shareholders becoming the two republics' central banks and with several non-financial companies in both republics. In 1999 a stake of 65.7% was privatised to the Belgian KBC Group for CZK 40,047 bn. KBC increased its stake to 84% by acquiring an additional stake from the Slovak Government.

Zivnostenska Banka (Merchants Bank) originally founded in 1868 and one of the most powerful of Czechoslovakia's 100 or so banks in the 1920s and 1930s, it was nationalised in 1945, closed down in 1950 and revived as a much smaller bank in 1956 to carry out foreign exchange transactions for private individuals.

The bank is the first foreign acquisition, or part acquisition, of an existing Czechoslovak bank. In 1992 Berliner Handels-und Frankfurter Bank (BHF) and the World Bank's International Financial Corporation (IFC) injected \$28m of fresh capital into Zivnostenska Banka giving BHF a 40 % stake and the IFC 12%. 3% was retained for restitution and the remaining 45% sold off. After January 1998 Zivnostenska Banka had a new shareholder as BHF Bank sold its stake to Bankgesellschaft Berlin.

Source: Diverse sources.

³⁶⁶ For an extensive analysis of the Komerční Banka see Snyder and Kormendi (1997).

Appendix A 2-2-2-1b: Methods of Solving Bad Loans

A policy of benign neglect of bad debts is undesirable. The presence of bad loans can cause considerable costs. Dittus (1994, p. 19) presents a worst-case scenario where non-performing loans are presumed to lead to a full loss and not to be backed by any provisions and capital. Taking the annual interest cost of the operation as an estimate of the recapitalisation cost, and given the large share of enterprise debt to banks (74% of GDP in Czech Republic, compared to only 21% in Poland) and assuming non-performing loans amounting to 30% in each country, he calculates the annual interest burden ranging between 2.3 % (Poland) and 2.8% (CSFR) of GDP.

Begg and Portes (1993) recommend early cleansing of bad loans from the banks' balance sheets. The rescue and management of bad loans would consume scarce time and skill at a period when production sectors' financial and restructuring problems already demanded close attention. There is evidence from Latin American banks that absence of action by Government results in financial repression. In the case of benign neglect banks' reaction is to apply a wider spread between borrowing and lending rates. This in turn inhibits investment, and brings about negative real interest rates for household saving. Instead of the very much needed financial deepening in the transition, the economy would suffer financial disintermediation. A further reason for the early cleansing of bad loans from the banks' balance sheets is that recapitalization at the initiation of economic transformation avoids a blur between new and old bad debt. Particularly in the Czech Republic before the privatisation of big banks measures had to be taken to clean up their loan portfolios.

A variety of suggestions were made to solve the bad debt problem (Table A 2-2-2-1b). Internal solutions are those where restructuring occurs within the bank balance sheet, whereas in the case of external solutions bad loans are removed from the balance sheet. In addition, a distinction is made between centralised and decentralised approaches. In the first case government adopts a series of measures for the solution of bad loans, whereas in the latter case the responsibility lies with banks.

Table A 2-2-2-1b: Internal and External Solutions to Bad-Loans

Internal solutions <i>Restructuring occurs within bank balance sheet</i>		External solutions <i>Bad-loans are removed from the balance sheet</i>	
Recapitalisation (P, Cz)	Banks are provided with additional funds in order to compensate for eventual indebtedness resulting from write-offs	Government bonds-loan-swap (P, Cz)	Government replaces bad-loans with interest bearing Government bonds.
Loan-hospital (P)	Bad loans are dealt with in a work out department	Establishment of a governmental institution	Creation of a government institution for the supervision, restructuring or liquidation of banks
Debt renegotiation	Bank and debtor negotiate a new contract annulling the old contract	Good-and bad bank approach (Cz)	Establishment of a second bank taking over all bad loans, becoming the bad bank. The old bank becomes a good bank.
Debt-Equity-Swap	Non-performing loans are replaced with equity shares.	Loan-loan-Swap	Banks negotiate loans among each other in a secondary market

P = applied by Poland

Cz = applied by Czech Republic

Centralised approach

Can be centralised or decentralised

Decentralised

Before adopting any rescue measures a decision must be made between bank forbearance, i.e. 'wait and see', and the closure of illiquid institutions. In case of bank forbearance it is hoped that the problem of bad loans will solve itself via favourable macroeconomic conditions which are conducive to an improvement of bank profitability. However, the risk entailed by bank forbearance is the worsening of illiquidity of both banks and enterprises. Negative economic developments such as high inflation would erode bad loans, but bring a flow-problem of bad loans. A closure of SOBs would not only paralyse the financial system but would also further worsen the Government budget.

Should the decision-maker opt for neither of the aforementioned approaches, internal or external rescue measures, or a combination of the two, can be implemented. A combination might be necessary if the capital base of banks is not strong enough to successfully pursue decentralised approaches. The advantages and disadvantages of writing off debts need to be considered before a decision can be made on which of the restructuring methods is most appropriate. In most TEs writing off debts was the least attractive alternative due to the burden placed on the budget and the negative incentives associated with it. Centralised approaches are also associated with the same problems, more so with negative incentives, if no credible guarantees are given that the support is a one-off event. However, internal measures as well as the decentralised establishment of bad banks can bring certain positive results if the amount of bad loans is not extremely high. Decentralised approaches leave the responsibility of dealing with non-performing loans to banks and are less costly, compared with centralised approaches, to the Government budget. Both in cases of recapitalisation and 'government bonds-loan-swap' banks receive government bonds. However, in the former case the receivables are not removed from the balance sheet. Decentralised approaches leave banks without any fresh capital in the long-term and their successful implementation is dependent on the capabilities of banks. Dittus' worst-case scenario leads to the conclusion that all non-performing loans must be replaced with government bonds and, in addition, fresh capital needs to be injected.³⁶⁷

Each TE applied different approaches to solve the bad debt problem, especially due to the significance of bad loans, the underlying reasons for them and differing economic conditions and regulations.

³⁶⁷ Dittus (1994, p. 19).

Appendix A 2-2-2-5: The Czech Capital Market***The Prague Stock Exchange***

The Prague Stock Exchange was reopened and commenced operations in April 1993 after a 54-year moratorium. As at 29 March 1996, equity securities representing 1,722 companies were registered for trading on the Prague Stock Exchange; the total listed equity market capitalisation of all shares traded were approximately CZK 539 bn. The volume and the capacity of the Czech capital market development is shown in Table A 3:

Table A 3 Volume and the Capacity of the Czech Capital Market

	1994	1995	1996
Total volume of transaction (CZK bn)	62,026	194,407	393,200
from this: shares	42,594	125,643	249,935
bonds	19,432	69,764	143,264
Number of new bond emissions	31	34	36
Total number of bond emissions	49	83	119
Volume of new emissions (CZK bn):	43,9	53,7	63,5

Source: CMHB: The table shows only the public marketable issues. Only four of this six emissions are public trading on the free market of the Prague Stock Exchange.

RM System

The RM System is a privately-owned entity in which securities trading takes place through a computerised bid and offer matching system which operates every business day. Trades through the RM System may be placed either by a securities broker or directly by an investor. A licence to organise a third securities market was granted on 5 February, 1996 to RTP, a.s. In addition to the organised securities markets, a portion of securities trading is conducted on the direct sales over the counter (OTC) market. OTC market trading is settled at the Securities Centre. The Securities Centre publishes the volumes and prices of the securities traded on the OTC market on a weekly basis. Most securities traded on the Prague Stock Exchange and the RM System are in book-entry form and registered at the Securities Centre, which is a computerised book-entry register of all Czech book-entry form securities. All companies which were privatised through the “voucher” system are required to keep their shares in book-entry form for three years. There are at least eight general indices tracking the daily prices on the Czech stock market. Of these, the most widely followed are the HN-Wood, the PX50 and the CNB120.³⁶⁸

The Securities centre developed to a dominant market where allegedly up to 80% of all capital market transactions are concluded at prices diametrically opposed to that of the stock exchange. Transactions OTC in the Securities Centre have not been registered. Thus the fragmented capital market, responsible for daily transactions of CZK 1.3 bn on average, led to an absence of uniform price parameters, making it difficult to estimate and determine market prices of securities portfolios.

³⁶⁸ Confidential Offering Circular Komerční Banka, a.s., 9 May 1996, p. 81.

Table A 3-4a: Commercial bank interest rates for newly drawn credits and CZK deposits 1997-2000 (end of year)

	1997	1998	1999	2000a
Newly drawn credits				
Total	16.5	11.9	6.7	6.7
Short-term	16.5	11.7	6.7	6.5
Medium-term	17	13.4	5.1	8.5
Long-term	16	11.7	10.2	7
Deposits				
Total	8	6.7	3.7	3.3
Short-term	11.6	9.2	4.8	4.3
Medium-term	12.2	10.9	5.6	4.4
Long-term	5.2	4.2	3.6	3.5

a= as of August

Source: CNB, 2000.

Table A 3-4b: Commercial bank Spreads for newly drawn credits and CZK deposits 1997-2000 (end of year)

	1997	1998	1999	2000a
Total	8.5	5.2	3	3.4
Short-term	4.9	2.5	1.9	2.2
Medium-term	4.8	2.5	-0.5	4.1
Long-term	10.8	7.5	6.6	3.5

a= as of August

Source: CNB, 2000.

Table A3-4c: Credits in CZK bn, foreign currency and maturity (1992-2000)

	1992	1993	1994	1995	1996	1997	1998	1999	2000 ²
1. Total credits (CZK bn and foreign currency)	584.7	695.5	812.4	919.4	1017.1	1112.9	1073.8	1032.4	1018.5
y-o-y changes in % ¹	-	19.1	16.8	13.2	10.6	9.4	-3.5	-3.9	-5.9
2. Credits in CZK bn	567.8	669.6	768.9	822.3	888.6	912.6	860.0	838.5	841.8
y-o-y changes in %	14.6	17.9	14.8	6.9	8.1	2.7	-5.8	-2.5	-3.6
3. Credits in foreign currency	16.9	25.9	43.5	97.1	128.5	200.3	213.8	193.9	176.7
y-o-y changes in %		57.0	68.0	123.2	32.3	55.9	6.7	-9.3	-15.5
Time Structure									
Short-term		41.8	40.5	41.9	43.5	42.0	41.1	37.9	36.1
Medium-term		28.3	30.2	29.1	25.7	24.8	22.4	23.5	21.4
Long-term		29.9	29.3	29.0	30.8	33.2	36.5	38.6	42.5

¹ Against January 1 of the given year; ² as of August; y-o-y = year-on-year.

Source: Czech Ministry of Finance, 2000.

Table A 3-4d: Credits granted and non-performing loans from 1994 to 1999 (end of year)
(excluding the Consolidation Bank and banks under conservatorship)

	1994	1995	1996	1997	1998	1999	2000Ψ
1. Total assets in CZK mn ²⁾			1,732,267	2,192,892	2,368,736	2,514,184	2,714,077
2. Profit from banking activities				87,412	96,860	90,323	59,086
interest profit				39728	65738	56743	39601
profit from fees and charges				11679	12916	14638	12254
profit from securities (excl. interest profit)				22065	2999	5736	-1017
profit from foreign exchange transactions				12733	10790	10080	7910
profit from derivatives transactions					1593	1773	-257
profit from other financial transactions				1207	2824	1351	595
3. General operating expenses				42519	48094	51149	37685
4. Net creation of reserves and provisions				29726	14673	-3384	-39603
5. Other operating expenses(-) / income(+)				-18146	-42218	-49746	-25073
6. Gross operating profit				-2979	-8126	-7188	35931
7. Extraordinary expenses (-)/income(+)				702	2958	2700	-25505
8. Pre-tax gross profit				-2277	-5167	-4488	10425
9. Taxes				1080	3069	1084	2993
10. Net profit (+)/loss (-)				-3,356	-8,236	-5,572	7,432
11. Total credits granted (in CZK mn)				998,451	1,003,635	943,881	962,626
to clients	814,842	930,666	862,823	977,840	975,866	910,714	906,345
to state and local authorities				20,612	27,769	33,167	56,280
Capital adequacy ¹⁾							
12. Reserve				40,014	41,275	45,326	53,163
13. Reserve funds				72,328	73,938	67,111	60,408
14. Capital funds				19,369	33,967	12,958	7,384
15. Equity capital in CZK mn			92,809	63,819	74,855	87,934	90,776
16. Capital			100,124	105,233	127,022	133,762	127422
17. Capital adequacy in %			9.95	9.47	12.06	13.64	16.83
Credit portfolio quality ³⁾							
18. Total Classified credits in CZK mn	310,092	335,095	245,998	266,390	261,641	291,100	243,302
in % of total credit volume	37.7	36.01	28.21	26.95	26.67	32.1	28.1
19. Weighted classification taking into account collateral in CZK mn			80,946	94,257	90,570	98,817	52,604
20. Weighted classification, total, in CZK mn			158,074	172,682	160,625	152,823	117,099
in % of total credit volume	21.52	20.26	18.12	17.47	16.37	16.88	13.51
21. Reserves and Provisions in CZK mn			84,209	105,287	110,126	103,783	93,713
22. Surplus (+) or shortfall (-) of reserves, provisions and collateral in CZK mn			3,264	11,031	19,557	4,966	41,109
23. Coverage of weighted classification with reserves and provisions in %				60.97	68.56	67.91	80.03

Source: CNB 1996; CNB 1999, 2000. 1) foreign bank branches excluded; 2) credit equivalent of off-balance-sheet assets included; 3) classified credits granted to clients, administrative authorities and banks; Ψ = as of September 2000

Appendix A 3-2-3a: The Questionnaire

**CZESKA SPORITELNA
STATE OWNED BANK**

**NAME: MIROSLAV PISE
RESPONDENT'S STATUS: ADVISER TO THE CHAIRMAN AND CEO
ADDRESS: POB 838, 113 98 PRAHA
E-MAIL: PISE@CP4.CSAS.CZ
TEL. NO.:(00420 2) 6107 3483**

PILOT-QUESTIONNAIRE

BY

Ms Mevliyar ER

Please answer the responses for each year by stating the corresponding number indicated at the top of each table.

SOB

1. What was the reaction of each of the following types of enterprises to change the previously practiced close State Owned Bank (SOB) - State Owned Enterprise (SOE) relationship?

1. VERY BAD , 2. BAD , 3. AVERAGE, 4. GOOD , 5. EXCELLENT

	91	92	93	94	95	96	97
SOEs	3	3	4	4	3	3	3
Partly privatised enterprises	3	3	4	4	3	3	3
Privatised SOEs	3	3	4	4	3	3	3

2. What was the effect of counseling, debt restructuring, increasing the amount of loan to a borrower in financial distress? 1. VERY BAD , 2. BAD , 3. AVERAGE, 4. GOOD , 5. EXCELLENT , 0 IF NONE

	91	92	93	94	95	96	97
Counseling	3	3	4	4	4	4	4
Debt restructuring	3	3	3	4	4	4	4
Increase the amount of the loan	3	3	3	3	2	2	2

3. Which methods did/do you apply in solving troubled loans?

1. VERY RARE, 2. RARE, 3. SOMETIMES, 4. OFTEN , 5. VERY OFTEN

	91	92	93	94	95	96	97
Work out	2	2	3	3	3	2	2
Liquidation	1	1	1	1	2	2	2
Other, please specify							

4. If you applied work out, what were the reasons?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
The legal framework was/is not sophisticated enough	3	3	3	3	4	4	4
Problem loans are best handled by the participants involved	3	3	3	2	2	2	2
Out-of-court settlement will net the bank the greatest return	3	3	3	4	4	4	4
Prestigious effect on the bank	3	3	3	3	3	3	3
Optimistic about the borrower's financial strength and ability to repay the obligation	4	4	4	3	3	3	3
Other factors, please specify							

5. If you applied Liquidation, what were the reasons?**1. STRONGLY DISAGREE, 2. DISAGREE, 3. UNCERTAIN, 4. AGREE, 5. STRONGLY AGREE**

	91	92	93	94	95	96	97
Both banking staff as well as borrowers need to be disciplined to adhere to regulations	5	5	4	4	3	3	3
Liquidation has a disciplining effect on other debtors	3	3	3	3	3	3	3
The costs involved in collecting and rehabilitating the borrower	3	3	3	3	4	4	4
No mutual trust between the bank and the borrower	3	3	3	4	4	5	5
Other factors, please specify							

6. How would you scale the effectiveness of stabilization policies adopted by the government and your organization?**1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT**

	91	92	93	94	95	96	97
Debt consolidation	3	3	3	4	4	4	4
Restructuring and recapitalisation	3	3	3	4	4	5	5
Sale of bad debts	3	3	3	4	4	5	5
Writing off bad debts	3	3	3	4	4	5	5
Radical shake-up of managements	3	3	3	3	3	3	3
Consolidation with a foreign bank	3	3	3	3	3	3	3
Partly privatisation	2	2	2	2	2	2	2
Complete privatisation	3	3	3	3	3	3	3
Other, please specify							

7. How would you scale adherence of your staff to the prudential regulations?**1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT**

	91	92	93	94	95	96	97
old staff	3	3	4	4	5	5	5
new staff	3	3	4	4	5	5	5

8. Why did your bank increase lending to enterprises initially?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
External Causes	5	5	5	4	4	4	4
Political pressure							
Charter requirement to take account of the general social and economic needs of the local area	4	4	4	4	4	4	4
The existence of sincere patriotism to help rebuild the country	4	4	4	3	3	3	3
An opportunity to establish market share	5	5	5	5	5	5	5
continuous changes in the environment made “good“ banking decisions go wrong	3	4	5	5	5	5	5
Other reason, please specify							
Borrowers insufficient skills/fraudulent behavior	4	4	4	4	5	5	5
Close links between our institution and outside institutions							
Enterprises prone to mistakes as in the learning process	3	3	3	3	3	3	3
Borrowers were making use of the transition process, still vested in their old customs of non-payment	4	4	3	3	3	2	2
New enterprises took advantage of the transition and employed borrowed money unwisely	5	5	4	4	3	3	3
Other reason, please specify							
Individual Management Decision							
Agency Problems							
Performance-minded agendas of many loan officers	3	3	3	3	3	3	3
Overemphasis on bank profits and growth	4	4	4	4	5	5	5
Fraud and embezzlement among bankers	5	5	4	4	4	4	4
Staff responsible for granting loans was also employed in the workout department	1	1	1	1	1	1	1
Too lenient credit policies for personal friends or friends of executive officers	1	1	1	1	1	1	1
Other reason, please specify							
Insufficient loan management skills	4	4	4	4	3	3	3
Insufficient loan analysis pertaining to the borrower's management skills							
Ill-conceived terms placed on loans	3	3	3	3	3	3	3
Inadequate analysis of the financial statements	5	4	4	3	3	3	3
Poor review and audit of marginal loans	2	2	2	2	2	2	21

9. Why did the staff face difficulties?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
Organizational							
Decision making was centralized and the exclusive remit of top manager	1	1	1	1	1	1	1
No guidelines from the head office	1	1	1	1	1	1	1
Insufficient allocation of resources to screen and monitor loan applications	4	4	4	3	3	3	3
Emphasis was placed to establish functions rather than unifying divided tasks into coherent business processes	5	5	4	2	2	2	2
Training							
Insufficient attention to training needs of loan officers	2	2	1	1	1	1	1
Behavioral/Psychological reasons							
The decisionmakers hang on to existing ways of doing things	3	3	3	2	2	2	2
Old managers suppressed new ideas generated by subordinates	3	3	2	2	1	1	1
New managers suppressed new ideas generated by subordinates	2	2	2	2	2	2	2
Procedures were introduced by management with the deliberate intention of constraining subordinates	2	2	2	2	2	2	2
Regulatory turmoil created managerial incentives in favor of their own good	1	1	1	1	1	1	1
Banks' early reliance on governments liquidity loans caused learning pathology	2	2	2	2	2	2	2
Respect for and certainty about the purpose and role of government institutions has disintegrated	3	3	3	2	2	1	1
Employees', yearning for freedom, were frustrated and took revenge from the society	2	2	2	2	2	2	2
Employees', yearning for freedom, were frustrated and took revenge from their managers	1	1	1	1	1	1	1
Managers who found themselves too old for adjusting to a new system, were frustrated and took revenge by pilfering	2	2	2	2	2	2	2
New managers pilfered taking advantage of the transition	3	3	3	3	2	2	2

10. What is the composition of your personnel responsible for granting loans? Please give approximate figures and/or percentages.

	91	92	93	94	95	96	97
old staff	10	30	80	95	95	95	99
new staff with experience	60	40	10	3	3	3	1
new staff without experience	30	30	10	2	2	2	

11. What is your assessment of the following statements concerning the skills of your staff? 1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
new staff was better than old staff in tackling transition specific problems	4	4	3	3	3	3	3
new staff were in fact better able than old staff to measure, manage, and price risk	5	5	4	4	3	3	3
old staff were better than new staff in building bank-borrower relationships due to already existing relationships with customers	5	5	4	4	3	3	3
both the contribution of old and new staff was essential	5	5	5	5	5	5	5

12. What is your assessment of personnel training measures employed?

1. VERY BAD, 2. BAD, 3. AVERAGE, 4. GOOD, 5. EXCELLENT

	91	92	93	94	95	96	97
internal training programmes	4	4	4	5	5	5	5
training in foreign banks (inland)	5	5	4	4	4	4	4
training in foreign banks (abroad)	5	5	5	4	4	4	4
other measures, please specify							
no training, employees grew with the transition process	1	1	1	1	1	1	1

13. If training programmes were unsatisfactory what was the reason?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

Training programmes were product-driven	3
Training programmes were function-driven	2
Training programmes were academic and not necessarily practical in nature	4
Training abroad did not bring efficiency as transition requires a completely different style of managing and negotiating than in developed market economies	1
Training abroad did not consider that there is a structure in the cultural differences between countries	3
Training programmes were perceived as a low-priority function as there was no adequate support from senior management	1
Radical improvement requires creativity and breakthrough thinking, and these skills are hard to develop through training programmes	2

14. How did your institution conduct career management/human resources development? Please tick.

	91	92	93	94	95	96	97
Application of long-term integrated career development system				x	x	x	x
Joint career planning processes that link the individual and organization's objectives						x	x
Employment of so called prospectors who seek to retain key employees	x	x	x	x	x	x	x
External labor market hiring based on individual contribution	x	x	x	x			
Individual performance was tested only at entry level	x	x	x				
Other measures for personal development, please specify							

15. What tools do/did you apply to promote employee creativity and breakthrough thinking? Please tick.

	91	92	93	94	95	96	97
Performance related pay	x	x	x	x	x	x	x
Promotion dependent on performance		x	x	x	x	x	x
Rewarding by giving responsibility for more complex and demanding cases		x	x	x	x	x	x
Other measures, please specify							
No measures to motivate the staff							

16. What kind of management structure did/do you apply? Please tick.

	91	92	93	94	95	96	97
Functional management hierarchy	x	x					
Horizontal organizational structure		x	x	x	x	x	x
Multiple and flexible linkages between employees all over the organization				x	x	x	x
Another organizational model, please specify							

17. Who was responsible for: Please tick

	a) earning profits							b) cost control							c) budgeting							
	91	92	93	94	95	96	97	91	92	93	94	95	96	97	91	92	93	94	95	96	97	
1. Branch managers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Regional managers																						
3. The chief executive	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

18. What was/is the reason for stalled implementation of required radical changes of organizational structure?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
1. Cost			X	X	X	X	X
2. Management's inertia	X	X					
3. Others, please specify							

19. How was/is the generation of ideas promoted? Please tick.

	91	92	93	94	95	96	97
1. bottom up				X	X	X	X
2. top-down solution imposed by management	X	X	X	X	X	X	X
3. employee participation in decision making was based upon competence and not rank				X	X	X	X

20. Did your institution apply Business Processes Re-engineering?

Yes No Don't know

If Yes, when did you apply this process?

How successful were the results? Score 1 very successful ~~5 less successful~~:

Are you still applying it? Yes No

21. Which of the following areas were difficult to penetrate by the re-design of the company?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

	91	92	93	94	95	96	97
Roles and responsibilities	5	5	4	4	4	4	4
Measurements and incentives	2	2	3	3	3	3	3
Organizational structure	2	2	2	2	2	2	2
Information technology	1	1	1	1	1	1	1
Shared values	3	3	3	3	3	3	3
Skills	4	4	3	3	3	3	3

22. Do you agree with the following statements concerning improvement strategies?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

The bank applies a measurement process which determines opportunities for improvement	5
The bank needs to apply a measurement process which will determine opportunities for improvement	5
The bank applies feedback measures which are capable of setting internal standards	5
The bank needs to apply feedback measures which are capable of setting internal standards	5
The bank applies a system which matches the internal standards of effectiveness against best in class	4
The bank needs to apply a system which matches the internal standards of effectiveness against best in class	5

23. What is your assessment of foreign banks as a model for improvement?

1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE

They apply a more advanced technology, which couldn't be afforded by us at this stage	2
As they are financially backed by strong headquarters abroad, they have more room for maneuver	4
No association with the past and/or independence from domestic government requirements made/makes foreign banks more profitable	5
Other, please specify	

24. Did the insecurity concerning the relevance of the transition related policies had an influence to create the desired credit culture? Yes x No**25. Did the following policies had an effect on your credit culture?**

1. STRONG EFFECT, 2. EFFECT, 3. MODERATE EFFECT, 4. WEAK EFFECT, 5. NO EFFECT

	91	92	93	94	95	96	97
Debt consolidation	3	3	2	2	1	1	1
Restructuring and recapitalisation	3	3	2	2	1	1	1
Provision of refinancing mechanisms, which remove interest-rate risk from loans	2	2	1	1	1	1	1
Guarantees, which remove credit risk from loans	1	1	1	1	1	1	1
Sale of bad debts	3	3	3	2	2	2	2
Writing off bad debts	3	3	3	2	2	2	2
Radical shake-up of managements	3	3	2	2	2	2	2
Consolidation with a foreign bank	3	3	3	3	3	3	3
Privatization	2	2	3	3	4	4	4
Partly privatisation	3	3	3	3	4	4	4
Complete privatisation	2	2	2	2	2	2	2
Other, please specify							

26. What is your assessment of the following statements ?**1. STRONGLY DISAGREE 2. DISAGREE 3. UNCERTAIN 4. AGREE 5. STRONGLY AGREE**

The bank is up to the task of providing improved corporate governance vis-à-vis enterprises	4
In order to be competitive the bank should be allowed to offer a complete range of commercial and investment banking services	1
Universal banking increased the potential learning pathology inherent in bank's already dominant market positions	3
Due to the idiosyncratic developments in the economy the bank cannot be called a universal bank, in German terms, but is going to be a unique example	1

Appendix A 3-2-3b: Report of the Fieldwork

33 semi-structured interviews were conducted in the Czech Republic. Only one interview was conducted in Poland:

1	2/4/98 Erste Sparkasse (foreign bank)	Dr. W. Reichman, Executive Director, Chairman of the Managing Board	
2	2/4/98 Wüstenrot (foreign bank, specialized)	Dr. Bernhard Braun, Executive Director, Chairman of the Board of Directors	
3	3/4/98 Hypo Bank (foreign bank)	Dr. Ivan Cenohorsky, Managing Director	
4	3/4/98 CMHB (domestic bank, small, specialized)	Frantisek Pavelka, Executive Director	FQ
5	7/4/98 IPB (domestic bank, large, FSP)	Jiri Vranek, Bank Analyst	*
6	7/4/98 Interbanka (domestic bank, small, FSP)	V. Prokes, Senior Manager	FQ + *
7	8/4/98 Universal banka (domestic bank, small, failed)	Jirkovsky	FQ
8	8/4/98 Commerzbank (foreign bank)	Nick Teller, General Manager	
9	8/4/98 Raiffeisenbank (foreign bank)	Pavel Trcka, Division Manager	FQ
10	8/4/98 CNB	Jana Krelinova, International Organizations and Markets Division Director	
11	9/4/98 CMHB (domestic bank, small, specialized)	Ing. Pavel Hrubes Credit Portfolio Risk Management	
12		Alois Sklanar Personnel Manager	
13	9/4/98 Midland Bank (foreign bank)	Frantisek Kopriva, Chief Executive Officer	
14	9/4/98 Agrobanka (domestic bank, medium, FSP)	Dr. Slavoj Czesany, Adviser to the President and Chief Executive Officer	FQ
15	10/4/98 Consolidation Bank	Peter Vrba Head of Financial Institutions Department	
16		Jana Tureckova Financial Institutions Area Manager	
17	10/4/98 Consolidation Bank	Ludek Prochazka Director of Banking in Bankruptcy and Liquidation	
18	14/4/98 Komerční Banka (domestic bank, large)	Hana Urbanova, Group Strategy Department, Investor Relations	
19	14/4/98 CNB	Ing. Stanislava Janackova, Institute of Economics	
20	14/4/98 CSOB (domestic bank, large)	Doc. Ing. Petr Chvojka, Chief Economist	
21	14/4/98 CSOB	Petr Dufek,	

	(domestic bank, large)	Strategy Department	
22	15/4/98 CS (domestic bank, large)	Miroslav Pise, Assistant to the Chariman and CEO	FQ
23	15/4/98 CS (domestic bank, large)	Karel Spacek, Former Finance Minister (1989-1992)	
24	15/4/98 CS	Miroslav Pise, Assistant to the Chairman and CEO	
25	15/4/98 CS (domestic bank, large)	Jan Mraz, Assistant to Deputy CEO responsible for Financial Management	
26	15/4/98 CS (domestic bank, large)	Jan Zizka, Foreign Relations and EU Activities Office of the Board Former senior officer of Banka Bohemia, the first bank that went bankrupt in 1994.	
27	15/4/98 CS (domestic bank, large)	Roman Silha, Strategic Planning Department	
28	16/4/98 AB-Banka (domestic bank, small, failed)	Ivan David, Liquidator	
29	16/4/98 Bank Association	Dr. Michal Tomasek, LL.M. European Union Adviser	
30	16/4/98 Pragobanka (domestic bank, small, conservatorship)	Petr Musil, Manager Correspondent Banking Department	
31		Asres Kassahun, Correspondent Banking Department	
32	17/4/98 Banka dum Skala (domestic bank, small, failed)	Marek Vodnansky at Skala Group Previously employed in Banka dum Skala	
33	17/4/98 Zivnostenska Banka (domestic bank, large, FSP)	Karel Jezek, Manager PR-Department	
34	20/4/98 BNP-Dresdner Bank Poland (foreign bank)	Rolf Michel, Deputy General Manager	
35	PPA Bank Poland (domestic bank, large)		FQ
36	Union Banka Czech Rep. (domestic bank, medium)		FQ
37	Vereinsbank Czech Rep. (foreign bank)		FQ

FQ = Filled questionnaire

• = second version questionnaire

Sample Letters and Expose

From: [REDACTED]
To: [REDACTED]
Date sent: Fri, 27 Mar 1998 08:34:53 +0000
Subject: Meetings the 15th April 1998 with representatives of Ceska spor
Send reply to: [REDACTED]
Priority: normal

Dear Ms. Mevliyar Er,

this is to confirm your meetings with representatives of Ceska sportelna in Prague the 15 th April 1998.

I prepared the following agenda:

- 9.00 that is me, who will start with general description of the situation
- 10.00 Mr. Karel Spacek - former Finance Minister (1989-1992) of CR, now he is working for the Bank
- 11.00 Mr. Jan Zizka - senior officer, former senior officer of Banka Bohemia, the first bank that went bankrupt in CR in 1994
- 12.00 I propose a working lunch in our canteen, hosted by me
- 13.00 Mr. Jan Mraz - assistant to Deputy CEO responsible for financial management
- 14.00 Mr. Tomas Nidetzky - Director, Bank Strategy Division
- 15.00 final discussion with me

I hope the programme suits to you. If you have any comments, please, do not hesitate to contact me.

As far as Ms. Krelinova from central bank, I try my best.

Yours sincerely,

Miroslav Pise

Date sent: [Mon, 16 Mar 1998 19:25:12 -0800](#)
From: [REDACTED]
Send reply to: [REDACTED]
Organization: [COMMERZBANK AG](#)
To: [REDACTED]
Subject: [Visit to prague by Mr. Mevlivar Er](#)

Dear Ms Er,

I received your fax regarding your dissertation on financial institutions in transition economies. It is a very wide and interesting topic and extremely current here in the Czech Republic (and to a lesser extent Slovakia, as less transition)

As General Manager of the largest foreign bank active in this country with assets in excess of CZK 80 billion I receive a great number of requests for assistance in various types of projects. Mostly I decline simply for reasons of time or delegate to appropriate members of staff. In your case I would be very happy to meet and talk to you about our Banks experience here since 1992.

No doubt the reason why I am making time available is that I myself graduated from the University of Birmingham in 1981 with a degree from the Dept. of Commerce under Professor Dr. Littlechild. I presume the department still exists? Drop me an e-mail regarding timing etc. and give me a few choices of dates so that I can plan accordingly.

Regards,
Nick Teller

[REDACTED]	General Manager
Tel. +420 2 21 19 31 20	COMMERZBANK AG Pobočka Praha
Fax +420 2 21 19 31 40	

From: [REDACTED]
To: [REDACTED]
Date sent: Mon, 23 Feb 1998 11:38:25 +0100
Subject: union banka

Dear Ms. Mevliyar Er,
concerning your letter here are some information that might be useful to you:

1. I am sending you by post the reports of 1993, 1994, 1995 and 1996. The latest figures are not official yet.
2. You could find some helpful data on these www sites: Czech National Bank (www.cnb.cz), consultancy firm Expandia (www.expandia.com - weekly and monthly bulletines), Komerčni banka, a.s. (www.kb.cz - the biggest Czech bank), Ceska sporitelna, a.s. (www.csas.cz - the second largest bank, only limited information in English). Unfortunately, the other banks don't provide information in English yet, only in Czech - Ceskoslovenska obchodni banka - www.csob.cz, Investiční a spořicí banka - www.ipb.cz, Union Banka - www.union.cz (this site will be accessible in short period).
3. I will try to find some information in English but I must admit, very little is published in English what would be of some help to you.
4. Here are some statistical data :
Czech banking sector - June 1997 (according to CNB)
Foreign currency bad loans 29 mld. CZK (2,7%)
Czech crown bad loans 321 mld. CZK (29,7%)
Foreign currency standard loans 157 mld. CZK (14,5 %)
Czech crown standard loans 575 mld. CZK (53,1%)

5. I spoke to the people from the Public Relations Department who are responsible for providing interviews and contacts with public. If you want to speak to someone you have to give us basic idea of what you want to discuss so that they could ask the right people in bank at least a week in advance of your arrival. By the time you could arrive to the Czech Republic I won't be working with Union Banka because I am leaving this post. You can contact Mr. Miroslav Mrkvica - the head of Public Relations Department - on the same address, who speaks English and who would arrange this for you (email address : [REDACTED])

I wish you good luck in your work and if you have any other questions, don't hesitate to contact me until the end of March, preferably on my email address [REDACTED]

Martin

Ostrava, 8 December, 1997

Dear Ms Mevliyar Er,

I am sending you back the questionnaire you wanted me to fill in. I tried to answer your questions by expressing my opinions and feelings about those problems, however I completed only some of the questions. The Czech banking system has indeed problems - for example still developing capital market, relatively strong competitiveness, macroeconomic impacts (inflation, central bank's regulations) and others. Union Banka was established in 1991 and very few people has been here since the beginning. Therefore I cannot look back to the past and assess the previous performance and behaviour.

I am sorry that I could not help you more. If you want to consult some general problems or features of Czech banks contact me on my e-mail address and I will try to help you.)

Yours sincerely

Martin Sroka
[Redacted]

Priority: Normal
To: [Redacted]
From: [Redacted]
Subject: Answer for you
Date sent: Wed, 26 Nov 97 12:58:47 PST

We are sorry, but at the moment we are unable to answer your questions because we are in the final stage of a merger, which is blocking all our capacities.

Thank you for your understanding

M. Meier

Date sent: Wed, 26 Nov 1997 08:26:16 -0800
From: [REDACTED]
Organization: Lublin - Poland
To: [REDACTED]
Subject: Questionnaire

Dear Ms Mevliyar,

I received your letter and questionnaire yesterday. Although I am fully aware of great value of your research, for several reasons I am currently not able to respond, namely:

1. the accurate answers to questions would require data from several departments and that means a great deal of work and time for our staff;
2. responses to some questions would require to reveal data that may be considered confidential;
3. there was no official letter of your university or sponsoring institution to the authorities of our bank that proof the goals of the research.

Therefore I would suggest you to ask the dean of your department to write to the president of our bank:

Mr. Włodzimierz Kosacki
President of BDK SA Grupa Pekao SA
ul. Wieniawska 12
20-071 Lublin - Poland,

for providing help in your research. The president will then forward your questionnaire to somebody who can acquire necessary data for you.

Let me take this opportunity to wish you a lot of success in your research.

Paweł K. Bielińczuk
Area Manager
International Department
BDK SA Grupa Pekao SA

PS. In private. Last year I tried to collect data from several banks about programmes of automation (central computer systems) for my MBA project. Believe me, it was quite hard and required a lot of patience.

Priority: Normal
To: [REDACTED]
From: [REDACTED]
Subject: your questionnaire
Date sent: Wed, 05 Nov 97 16:29:19 +0100 (CET)

Dear Ms. Mevliyar,

sorry for my delay in commenting on your questionnaire, but I had to put in the mail because of my overweight luggage. After going through them again, I must tell you I feel much better about them (I have done much work with questionnaires in manufacturing and R&D but not in the financial sector).

Let me suggest you to send out 5-5 to Poland and the Czech Republic as test questionnaires and decide about their final shape after the answers. My main problem is linked to the readiness of bankers to reply: too general questions might be simply given to secretariat people and you 'll risk to get very general answers.

Please, be careful about what you call a state owned bank. You should precise this because there are still many banks at least in Hungary in minority or indirect state ownership even if bank privatisation is officially declared terminated (except for one minor case or two).

Well, I would be glad to hear from you again and assist you if I can.

Please, give my warmest regards to Jens and all my other friends at the Department.

Yours sincerely

Adam Torok

Appendix A 3-2-3c: Classification of the Data with Q.S.R. NUD.IST

1. THE HISTORY OF CZECH REPUBLIC AND THE CREATION OF THE NPF
2. FOREIGN ADVICE TO THE NPF
3. SOLVING ECONOMIC PROBLEMS BY CZECH WAY
4. TASK OF THE BANK ASSOCIATION
5. CZECH BANKING SYSTEM / UNIVERSAL BANKING
6. INSTITUTIONAL DEFFICIENCIES IMPEDING A RAPID TRANSFORMATION
7. MACROECONOMIC FACTORS AFFECTING THE FINANCIAL SECTOR

8. MONETARY POLICY PURSUED BY THE CNB
9. CAUSE OF FAILURE/OPTIMISTIC VIEW ON THE ECONOMIC DEVELOPMENT
10. CAUSE OF FAILURE/EXCESSIVE LICENCING
11. CAUSE OF FAILURE/ENTERPRISES
12. CAUSE OF FAILURE/CAPITAL MARKET
13. CAUSE OF FAILURE/CONTROL MECHANISM
14. CAUSE OF FAILURE/EMBEZZLEMENT
15. CAUSE OF FAILURE/DEPOSIT INSURANCE (see next Appendix)
16. CAUSE OF FAILURE/ FOREIGN BANKS
17. CAUSE OF FAILURE/FOREIGN SPECULATIVE ACTIVITIES
18. CAUSE OF FAILURE/OTHER FACTORS
19. CAUSE OF FAILURE/OWNERSHIP STRUCTURE
20. CAUSE OF FAILURE/PRUDENTIAL REGULATION AND SUPERVISION

21. DIFFICULTIES FACED BY BANKS IN FAILURE
22. FINANCIAL SECTOR CRISIS MAY 1997

23. SOLUTION TO EXCESSIVE LICENCING/REDUCING LICENCING
24. FOREIGN STRATEGIC PARTNER AS SOLUTION
25. BENEFIT TO FOREIGN STRATEGIC PARTNER
26. SOLUTION / BENEFITS OF FOREIGN STRATEGIC PARTNERS TO DOMESTIC BANKS
27. SOLUTION/ CONSOLIDATION BANK
28. SOLUTION FOR BANKS IN DISTRESS/REDUCING STATE OWNERSHIP
29. SOLUTION FOR BANKS IN DISTRESS/REGULATION AND SUPERVISION
30. SOLUTION FOR BANKS IN DISTRESS/KONSOLIDATION/RESERVES
31. SOLUTION FOR BANKS IN DISTRESS/ALTERNATIVE
32. BANKS IN DISTRESS/COMPENSATION OF DEPOSITORS
33. SOLUTION FOR BANKS IN DISTRESS / IMPROVEMENTS ON ENTERPRISE LEVEL
34. NPF / REPRESENTATIVES AT THE BOARD OF ENTERPRISES
35. SOLUTION FOR BANKS IN DISTRESS/GOVERNMENT SUPPORT
36. SOLUTION FOR BANKS IN DISTRESS/KONSOLIDATION
37. SOLUTION FOR BANKS IN DISTRESS/LIQUIDATION
38. SOLUTION FOR BANKS IN DISTRESS/IMPROVING MACROECONOMIC POLICY
39. SOLUTION FOR BANKS IN DISTRESS / INTERNAL STRATEGY OF MANAGEMENT TO AVOID LOSS
40. SOLUTION FOR BANKS IN DISTRESS / TRAINING OF THE STAFF

41. FOREIGN BANKS/PULLING FACTORS
42. CONTRIBUTION OF DOMESTIC BANKS
43. CONTRIBUTION OF FOREIGN BANKS/GENERAL
44. CONTRIBUTION OF FOREIGN BANKS/STAFF
45. ARE THE PULLING FACTORS OF FOREIGN BANK A CONTRIBUTION?
46. FOREIGN BANK CONTRIBUTION/DIFFICULTIES
47. EFFECTIVENESS OF FOREIGN BANKS OVER DOMESTIC BANKS OR VICE VERSA

48. FOREIGN BANK CONTRIBUTION / STRUCTURE OF CUSTOMERS AND STRATEGIES

49. IS A CAPITAL ADEQUACY OF 8% APPROPRIATE FOR CZECH BANKS?

50. DO THE BANKERS CONSIDER TO BE READY FOR THE EU?

51. WHAT PREPARATIONS ARE DONE FOR THE EURO?

52. FOREIGN BANK SUPERVISION

This is one example of a transcript of the interviews which fall into the category "DEPOSIT INSURANCE." Each of the 52 categories mentioned above has such a transcript.

Q.S.R. NUD.IST Power version, revision 3.0.4d GUI.
Licensee: School of Education.

PROJECT: PROJECT4, User Mevliyar, 10:55 am, Nov 12, 1998.

```
*****
(4 2) /CAUSE OF FAILURE/ deposit insurance (DI)
*** Definition:
DEPOSIT INSURANCE
+++++
+++ ON-LINE DOCUMENT: ABBANKA
+++ Retrieval for this document: 7 units out of 118, = 5.9%
++ Text units 99-101:
At the time of AB-Banka's collapse deposit insurance existed only for
private persons and was limited to CZK 100 000. Now the deposit
insurance has been increased to CZK 300 000. Thus our concern are the
companies which had hundreds of millions CZK.
++ Text units 113-116:
Deposit insurance did not induce the management to undertake high risk
businesses. Deposit insurance is not connected with management incentives
because it covered only CZK 100 000. The activities of the bank's
managers were aimed to their own profits. A certain part of the money
was taken abroad.
+++++
+++ ON-LINE DOCUMENT: CMHB1
+++ Retrieval for this document: 3 units out of 128, = 2.3%
++ Text units 82-84:
Deposit Insurance and bank failures
As deposit insurance was introduced in 1996 it cannot be blamed for
causing incentive problems and thus bank failures as it was the case in
the USs' S&L failures. The introduction of such a new system means cost
for commercial banks as they have to pay an annual insurance fee of
about (2-5%?) of deposits which affects their profit.
+++++
+++ ON-LINE DOCUMENT: CS2
+++ Retrieval for this document: 5 units out of 198, = 2.5%
++ Text units 123-127:
Bank runs
Bank runs are not normal. They appeared only in previous cases when bad
banks collapsed. Bank runs were even not observed when the population
mistrust the CZK and changed to foreign money during the turbulence in
May 1997. The number of people coming to a bank in order to change from
CZK to foreign currency such as DM were also at a minimum.
+++++
+++ ON-LINE DOCUMENT: CS3
+++ Retrieval for this document: 6 units out of 187, = 3.2%
++ Text units 161-166:
Improved supervision to handle incentive problems coming with DI? In
general everything is better in the highly developed countries which is
highly appreciated in Czech Republic. Especially elderly people are
saving for any case whatsoever even for their own funeral. To protect
this part of the population from any kind of loss of their money through
the criminal activities of small group of criminals as well as from
tunnelling certain measures were adopted. As the risk of tunnelling
still exists, not only improved supervision on behalf of CNB is required
but also banks on their own should pursue daily controls on the prudence
of their staff. CS has its own service.
```

+++++

+++ ON-LINE DOCUMENT: CSOB2

+++ Retrieval for this document: 19 units out of 161, = 12%

++ Text units 102-120:

Deposit insurance, incentive problems and supervision Deposit insurance is normal in developed countries and it should be normal in transition countries especially due to the lack of experience of their inhabitants. In particular older part of the population is unable to realise that 2% more interest rate offered by a small bank vis-à-vis a big bank is nothing more but only CZK 2 in a CZK 100 or CZK 20 in CZK 1000 and put their money in small banks. Therefore it is very important to have a very good banking supervision and deposit insurance. On the other hand this is associated with problems of moral hazard. Are supervisors fit enough to control moral hazard associated with DI? Should an individual supervision be placed? Improved supervision could achieve more than DI. Our DI law was imposed 2 or 3 years ago with the limit of CZK 100.000 only. This amount was sufficient for small depositors, but as many small banks failed during the last years more than hundreds of thousands CZKs were lost and in some cases up to 4 million CZK had to be paid not only to depositors but also to small entrepreneurs. It can be concluded that it was not only a problem of bank insurance. The system is put under too great a strain by the existence of bad debts (see newspaper article in Czech language, a special analysis of this problem, because it is a new problem. We can see the cost of consolidation of small banks, which failed during the last years. We can also see the cost of bankruptcies which is altogether CZK 40 bn to be paid by the CNB to depositors. CNB transferred this amount to Czeska Financni, a subsidiary of CNB and here we can see the total amount of CZK 24 bn on the balance sheet of Czeska Financni. This amount is more than half a billion dollars and is quite much. The liabilities of Czeska Financni consist of bank loans by the CNB, which represents a problem. On the one hand we have here bad assets from small banks and on the other hand we can see the debt to be paid in the future to the CNB. Thus the problem is where to find finances to pay and solve this burden).

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+++ ON-LINE DOCUMENT: HYPOBANK

+++ Retrieval for this document: 10 units out of 227, = 4.4%

++ Text units 68-77:

Bank failures and Deposit Insurance

"As a banker I would stress that the behaviour of the bank manager does not change depending on whether the deposits are insured or not. If the bank gets into trouble h/she would lose his/her job, and this is not in the interest of the manager. Thus, I think that it does not make any difference whether the deposits are insured or not. Pursuing high risk activities is also not in the interest of owners as they would risk to lose their capital." Deposit insurance was introduced after the large crisis when twelve banks went bankrupt. Thus we cannot conclude that deposit insurance was associated with higher risk taking and moral hazard. For foreign banks deposit insurance presents costs or a kind of tax (1% each year is paid for deposit insurance) more than to domestic institutions. Deposit insurance is a means to support ailing domestic financial institutions at the cost of healthy foreign banks.

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+++ ON-LINE DOCUMENT: INTERBANKA

+++ Retrieval for this document: 44 units out of 245, = 18%

++ Text units 104-110:

The new management had to present CNB its intention for the future and the way they would like to take for the improvement of the situation of the bank. Banking sector has one specific feature which is called the domino effect. If small bank gets into trouble shown by its figures of profitability then this can have adverse effect on other small banks as

the population would mistrust small banks. Hence, the approach of CNB must be very serious. Thus in the case of Interbanka it was serious and appropriate. In the past there were approximately ten cases of bankruptcies of small banks with an impact to other small banks. In some cases the CNB decided mergers and in others it imposed some restrictions as it was in the case of Interbanka previously.

++ Text units 112-112:

When Interbanka faced difficulties banks with whom it had deals were affected as well.

++ Text units 173-178:

The stake of bad loans have a very bad impact on the soundness of the bank as the bank has to find sources to replace it. Bad loans are either covered by capital or by deposits. The problem is to find this money to replace bad loans. If bad loans are covered by capital money has to be found given its impact on the capital asset ratio. If bad loans are covered by deposits the bank has firstly to find depositors, and secondly, return this money to clients with interest rate of lets say 8%.

++ Text units 181-210:

Deposit Insurance

Deposit insurance is a psychological matter especially as the people can compare the interest rates offered by various banks. If someone has CZK 80 000 on account s/he can find out that s/he will obtain 80% in case of the bank's failure s/he can then compare interest rates offered without hesitation as they are assured of making a loss at maximum 20%. From this point of view the situation is not so bad now except for corporate clients. A company with capital of CZK 10 million has no chance to identify a good small bank as a client. As only a few small banks can be identified of being good or having problems by looking at its figures corporate clients avoid small banks. Thus deposit insurance makes no sense for corporate clients but has a very positive effect for natural persons. Deposit insurance is a cost for banks because we are obliged to pay some stake of our deposits as insurance premiums to the deposit insurance fund.

Effect of DI and management incentives

DI can have various aspects both from the point of view of banks and client. Clients can handle more risk than normal as they have just to compare the interest rates offered. Similar approach could be applied by banks as deposits are insured the approach of the management could be to involve in more risky deals. At present we monitor the development of risk in Interbanka. To measure and quantify some risks in the bank helps to identify business fields with low risk and reasonable profit. Two or three years ago profitability was the crux of the matter. Today not only profitability counts but also risk is to be considered. If a bank has to decide between two deals with the same profitability one with high and the other with low risk it should decide for the deal with low risk. Hence in the future we would like to apply an approach for classifying our staff according to their preference for a deal with low risk and similar profit vis-à-vis deals rejected. The situation in Czech Republic is gradually becoming more sophisticated. Certainly there are some limitations to our traders in dealing rooms. There are some stop limits during the day where traders have to stop their activities when reaching a certain sum. There are also limits concerning overnight positions. There are also many restrictions and limitations imposed by the CNB. An open position is not to exceed a certain amount in a certain currency or it is not to exceed certain amount in all European currencies. In all hard and non-hard currencies it can be open position according to the bank's amount of capital. Practically banks are not given much space for dealing in various fields. But first of all we emphasise the evaluation

of credit risk and then interest rate risk, currency risk, affix risk, etc.

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+++ ON-LINE DOCUMENT: MIDLANDBANK

+++ Retrieval for this document: 3 units out of 185, = 1.6%

++ Text units 91-93:

Deposit insurance and incentives

I do not think that deposit insurance made bank managers reckless, because the deposits are insured.

Deposit insurance did not also made depositors feel any better, because it is a meagre colour.

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+++ ON-LINE DOCUMENT: RAIFFEISENBANK

+++ Retrieval for this document: 22 units out of 232, = 9.5%

++ Text units 190-203:

CNB and Banking supervision

During the first months and during the first years supervision did not exist at all. The CNB had established a supervisory division, but in practice nothing could be done due to a lack of know-how. In the second stage basic knowledge was achieved with the support of foreign banks, IMF and Bank for International Settlements in Basle, but there was a lack of experience. Theoretically the banking supervision started to improve. A number of reports from all banks going to hundreds of pages were requested yearly. Nevertheless, either due to a lack of ability to analyse the reports and to propose somehow an action plan when a bank showed signs of weakness or, and this is a speculation, they were just not willing to act. It became a known fact that when a bank went bankrupt it could simply be rescued at the cost of taxpayers. Thus, the banking supervision did not perform its task, even if they had information. The change came in 1995/1996. Thus it is not too much exaggeration if we say that the banking sector was more without a proper supervision for the first two years resulting in a disaster, which we have to digest until today. This disaster has cost the CNB, the state and the taxpayers CZK 120 billion, which is still not financed.

++ Text units 216-221:

The introduction of deposit insurance

Deposit insurance is indeed associated with moral hazard. Whatever happens with the banking sector, the blood of the banking system are the private depositors. Therefore we have to be just to the man on the street, who should be protected. Therefore the introduction of deposit insurance in the Czech Republic was recommended by international banking experts. Deposit insurance is a standard factor in the EU and as the country is moving into the EU, the introduction of deposit insurance is a prerequisite.

++ Text units 223-224:

Although the establishment of a corresponding insurance fund is quite costly, the overall bill from supporting and saving bank banks was much higher and approximately 20% of this bill was used for refunding private depositors.

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+++ ON-LINE DOCUMENT: WÜSTENROT

+++ Retrieval for this document: 5 units out of 117, = 4.3%

++ Text units 85-89:

Competence of Supervisors and Regulators

Deficiencies in the financial sector were caused both by supervisory negligence and political deficiencies. Liquidations take place but there are no sanctions. For example there are instances where the banking licence is revoked due to a behaviour which is against the law, but despite of this the bank receives support. Consequently this support gives an incentive to bank managers to be more lavish.

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+++ ON-LINE DOCUMENT: ZIVNOSTENSKABANKA

+++ Retrieval for this document: 3 units out of 118, = 2.5%

++ Text units 94-96:

CNB's supervisory qualities and risk associated with deposit insurance
Deposit insurance is expected to be increased from CZK 100 000 to CZK 300 000, although still lower than EU level, through the amendment of Czech banking law by the parliament. Nevertheless it is going to be an improvement for clients though always a cost for banks.

Table A4-3-1: Main shareholders in the Czech banks

Big banks	Owners	Total Number of Shareholders	Majority ownership since
Ceska Sporitelna	52.07% National Property Fund(CZ); 7.38% Municipalities(CZ);5.92% EBRD; Ceska Pojistovna (CZ); (as of 11/1999).	4; one domestic majority owner	No Foreign involvement until incl. 1999.
CSOB	Majority shareholder with 71.35% is KBC bank NV (BE); 7.47% EBRD ; 5.50% KBC Bankassurance Holding (BE); 5.50% KBC Verzekeringen NV (BE) ; 4.39% International Finance Corporation (as of 12/1999).	5; one foreign majority owner	In 1999 a stake of 65.7% was privatised to the Belgian KBC Group.
IPB	35.29% Saluka Inv; 13.09% Bankovni Holding; 9.81% Ceska Pojistovna; 8.29% Nomura Europe ; 6.68% Restitucni Investicni Fond; 2% Fintop as; 1.20% Investicni Fond Bohatstvi; 46% Nomura Securities Co. (JP) (as of 11/1999).	8; one foreign majority owner	<i>In 1998 a stake of 46% was privatised to Nomura</i>
Komerční Banka	60% NPF (CZ) ; 18.38% The Bank of New York (US); 2.9% Ceska Pojistovna (CZ); 2.58 % Czech Restitution Investment Fund (CZ); 1.57% Bank Austria (AT); 1.48% State Street Bank and Trust Co(US); 1.3% Rentiersky Investicni Fond; 1.01% Privatizacni Investicni Fond (CZ) (as of 11/1999).	8; one domestic majority owner	
Zivnostenska banka	51% Bankgesellschaft Berlin (DE) (as of 4/2000); 10.09% International Finance Corporation (US); 8.93% PIF-1 Privatizacni Investicni Fond (CZ); 5.94% Penzijni Fond (CZ); (as of 10/1999).	4; one foreign majority owner	In 1992 Berliner Handels-und Frankfurter Bank (BHF) and the World Bank's International Financial Corporation (IFC) injected US\$28m of fresh capital into Zivnostenska Banka giving BHF a 40 % stake and the IFC 12%. The remaining 48% privatised to private individuals and Czech investment funds (3% was retained for restitution and the remaining 45% sold off.) After January 1998 Zivnostenska Banka had a new shareholder as BHF Bank sold its stake to Bankgesellschaft Berlin (BGB). BGB largest shareholder in 1998 with 47%. As of Sep 2000: BGB owns 80.11%; Intern. Finance Group 5.04%; Other corporates 8.12%; Individuals 6.73%.

Source: BankScope, Annual Reports, own enquiries.

Continued

continued

NEBs	Owners	Total Number of	Majority ownership since
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		Shareholders	
Banka Hana	14.06% KBC Bank NV (BE); 11.77% IPB(CZ); 9.99% Sekura Holdings Ltd(KY); 9.99% CDE Investments BV(NL); 9.99% Quartermaine Invest Fund BV(NL); 9.95% Maitland Holdings BV(NL); 9.90% Stream Holdings Ltd. (KY); 9.89% Domeana S.R.O. Prague(CZ); 7.71% Apollon Holdings A.S. (CZ) (as of 11/1999).	9; dispersed but foreigners are majority owners	Stake of the Belgian Credit Bank: 1997=35.84%;1998=35.84%; 1999= 87.26%
Ceska Exportni Banka	67% State of Czech Republic (CZ); 33% Export Guarantee and Assurance Copr. a.s. (CZ);(as of 12/1998).	2; State is majority owner	
Ceskomoravska Zarucni a Rozvojova Banka	20% State of Czech Republic (Ministry of Trade and Industry) (CZ); 20% State of Czech Republic (Ministry for Regional Development) (CZ); 13% Ceska Sporitelna (CZ); 13% Komerčni Banka(CZ); 12.70% IPB(CZ); 10.60% GE Capital Bank(CZ); 9% State of Czech Republic (Ministry of Finance) (CZ); 1.7% Czech Commercial Bank (CZ); (as of 1/1999).	8; dispersed but majority is under State ownership	
GE Capital Bank	70% GE Capital Corp (US); EBRD 30%; (as of 6/1998).	2; one foreign majority owner	In June 1998, Agrobanka Praha, a.s. changed its name to GE Capital Bank. In Dec. 1995 Agrobanka was owned by 6000 shareholders.
Moravia Banka	8% Dynamic Capital Invest (CZ);7.5% Unitor (CZ); 7.33% Variantes (CZ); 6.9% Csad Invest (CZ); 6.16% Valcovny Plechu (CZ); 5.2.%Prosperita IF (CZ); 4.5% Betafin (CZ); 4.41% Moba Leasing (CZ); 4.29% Leasing Moravia (CZ); 4.1% Zelezarny Hradek (CZ); 4% Hasicska Vzáj Pojistovna(CZ); 3.9% Bones Ostrava (CZ); 3.9%Atea Praha (CZ); 3.89% Union Group (CZ); 3.6% Prvni Hyberska (CZ); 3% Connect Finance (CZ); 2.97% M.I.S.T (CZ); 2.63% Union Banka (CZ); 2.33% Mesto Frydek-Mistek (CZ); 2% Soukroma Trinecka Obchodni A Hotelova Skola (CZ); 2% Nova Hut (CZ); (as of 12/1998).	21; dispersed	
Pragobanka	92.16% Ceska Pojistovna (CZ); 5.49% PPF Investicni Holding; 2.09% Private Shareholders; 0.25% Employees; Private Citizens; (as of 12/1997).	5; one domestic majority owner	

Source: BankScope, Annual Reports, own enquiries.

continued

continued

NEBs	Owners	Total Number of Shareholders	Majority ownership since
Prvni Mestska Banka	73.4% Capital City of Prague; 10.8% Domeana, spol. s.r.o; 10% IPB; 5.8% Other shareholders with share lower than 5%; (as of 12/1999).	4; one domestic majority owner	
Union Banka	85.26% Union Group a.s. (CZ); 12.7% Fores a.s. (CZ); (as of 6/1999).	2; one domestic majority owner	
Universal Banka	19.75% Mostecká Uhelná Společnost (CZ); 10% Severočeská Plynárenská(CZ); 7.5% Lesní Společnost Hradec Králové (CZ); 6% Chemopetrol (CZ); 5% Jihočeské Lesy České Budějovice (CZ); (as of 12/1997).	5; dispersed	
Expandia Banka	50.10% Group of Ceska pojistovna a.s. 47.06% Expandia, a.s 2.84% other shareholders	3; one domestic majority owner	

Source: BankScope, Annual Reports, own enquiries.

continued

continued

Foreign subsidiaries	Owners	Total Number of Shareholders	Majority ownership since
Bank Austria Creditanstalt	80% Bank Austria Creditanstalt International AG (AT); 10.19% Cassa Di Risparmio Delle Provincie Lombarde SPA (IT); 9.81% Anteilsverwaltungs-Zentralsparkasse (AT); (as of 11/1999).	4; one foreign majority owner	
Citibank	100% Citibank Overseas Investment Corporation (US); (as of 12/1999).	1	
Credit Lyonnais Bank	100% Credit Lyonnais Global Banking (FR) (as of 12/1999).	1	
Erste Bank Sparkasse	66.67% Erste Bank der Oesterreichischen Sparkassen AG (AT); 28.33% Allgemeine Sparkasse Oberoesterreich Bank AG (AT); 5% Bank und Sparkassen AG Waldviertel-Mitte (AT); (as of 11/1999).	3; one foreign majority owner	
Hypo-Bank	100% Bayerische Hypotheken un Wechsel Bank AG (DE) (as of 12/1998). Hypo-Bank merged with Vereinsbank on 1.1.99. New name Hypovereinsbank.	1	
Hypovereinsbank	Vereinsbank was 100% owned by Bayerische Vereinsbank (DE); (as of 12/1998).		
Interbanka	41.4% Hungarian Foreign Trade Bank Ltd (HU) ; 8% BAWAG (AT); Bayerische Landesbank Girozentrale (DE); (as of 12/1998).	3; foreigners are majority owners	Foreign involvement began in 1997
Raiffeisenbank akciová spoločnosť	25% RB Prag Beteiligungs GmbH (AT); 24% Raiffeisenlandesbank (AT); 51% Raiffeisen Zentralbank Oesterreich AG (AT); (as of 12/1998).	4; one foreign majority owner	

Source: Annual Reports, BankScope, direct enquiries.

Table A 4-3-2: Diverse Ratios

a. Liquid Assets/Total Assets	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.06	0.09	0.04			
Bankovni dum SKALA				0.002	0.02					
Ceska Exportni Banka						0.06	0.0002	0.01	0.03	0.02
Ceskomoravska Zarucni a Rozvojova Bk					0.002	0.08	0.20	0.34	0.25	0.26
Coop Banka			0.01	0.05	0.05	0.06	0.06			
Foresbank					0.02	0.03	0.06	0.33		
GE Capital Bank	0.05	0.03	0.05	0.14	0.13	0.11	0.11			
Interbanka		0.65	0.02	0.03	0.09	0.17	0.09			
Moravia Banka			0.01	0.05	0.04	0.11	0.09	0.14	0.15	
Pragobanka		0.01	0.004	0.01	0.02	0.14	0.11	0.07		
Prvni Mestska Banka							0.14	0.62	0.67	0.69
Union Banka			0.19	0.02	0.11	0.14	0.15	0.24	0.18	0.17
Universal Banka					0.04	0.09	0.04	0.08		
Velkomoravska Banka				0.10	0.10	0.18				
Zivnostenska banka	0.51	0.81								
Expandia Banka									0.06	0.03

b. Loans (6 months - 1 year) / Total Assets	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.01	0.03	0.08			
Ceska Exportni Banka								0.01	0.01	0.04
Ceskomoravska Zarucni a Rozvojova Bk					0.011	0.018	0.002	0.007	0.006	
Coop Banka			0.81	0.67	0.34	0.28	0.29			
Foresbank					0.22	0.16	0.37	0.09		
GE Capital Bank	0.90	0.89	0.36	0.42	0.34	0.24	0.24			
Interbanka		0.23	0.64	0.46	0.18	0.11	0.23			
Moravia Banka			0.77	0.82	0.59	0.62	0.60	0.53	0.55	
Pragobanka		0.83	0.91	0.86	0.81	0.45	0.68	0.63		
Prvni Mestska Banka							0.29	0.25	0.10	0.12
Union Banka			0.66	0.60	0.31	0.34	0.24	0.31	0.25	0.52
Universal Banka					0.50	0.56	0.47	0.29		
Velkomoravska Banka				0.70	0.29	0.28				
Zivnostenska banka	0.47	0.16								
Expandia Banka									0.07	0.005

Appendix to Chapter 4

c. Loans (1 - 5 year) / Total Assets	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.63	0.55	0.58			
Bankovni dum SKALA				0.73	0.68					
Ceska Exportni Banka									0.003	0.005
Ceskomoravska Zarucni a Rozvojova Bk					0.001	0.0005	0.001	0.04	0.12	0.18
Coop Banka					0.31	0.38	0.66			
Foresbank					0.43	0.17				
GE Capital Bank				0.22	0.19	0.38	0.44			
Interbanka					0.22	0.39	0.67			
Moravia Banka					0.03	0.03				
Pragobanka						0.31	0.21	0.07		
Prvni Mestska Banka									0.12	0.26
Union Banka					0.32	0.30	0.21	0.25	0.17	
Universal Banka					0.06	0.03				
Velkomoravska Banka					0.44	0.37				
Expandia Banka									0.004	0.003

d. Total Securities/Total Assets	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.09	0.09	0.07			
Bankovni dum SKALA					0.06					
Ceska Exportni Banka						0.56	0.17	0.04	0.02	0.01
Ceskomoravska Zarucni a Rozvojova Bk					0.48	0.46	0.35	0.49	0.50	0.46
Coop Banka			0.002	0.03	0.07	0.04	0.01			
Foresbank					0.12	0.54	0.31	0.07		
GE Capital Bank			0.01	0.02	0.05	0.08	0.06			
Interbanka			0.01	0.12	0.11	0.03				
Moravia Banka				0.02	0.12	0.11	0.07	0.07	0.04	
Pragobanka				0.01	0.10	0.05	0.04	0.19		
Prvni Mestska Banka							0.16	0.14	0.16	0.07
Union Banka			0.0004	0.14	0.13	0.09	0.05	0.07	0.13	0.04
Universal Banka					0.03	0.05	0.18	0.23		
Velkomoravska Banka				0.07	0.06	0.15				
Expandia Banka									0.004	0.01

e. Equity Investment / Total Assets	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Banka Hana					0.01	0.01				
Bankovni dum SKALA				0.04						
Ceskomoravska Zarucni a Rozvojova Bk					0.0001	0.0001				
Coop Banka					0.01	0.02				
Foresbank					0.00002	0.00004	0.01			
GE Capital Bank			0.003	0.01	0.01	0.03				
Interbanka				0.01	0.01	0.01				
Moravia Banka			0.00001	0.001	0.01	0.01	0.003	0.001		
Pragobanka			0.001	0.001	0.0005	0.001				
Prvni Mestska Banka							0.01	0.004	0.01	
Union Banka						0.01	0.01			
Universal Banka					0.02		0.13			
Zivnostenska banka	0.003									
Expandia Banka									0.08	

Table A4-4-1: Equity and Deposits in SOBs, NEBs and Foreign banks

SOBs	EQUITY th \$	Change compared to previous year (%)		Total Deposits th \$	Change compared to previous year (%)	
1990	234,793	100		5,318,432	100	
1991	381,620	163	63	7,218,290	136	36
1992	355,101	93	-69	6,402,152	89	-47
1993	356,162	100	7	6,158,713	96	8
1994	596,586	168	67	7,279,101	118	22
1995	732,864	123	-45	8,708,537	120	1
1996	842,620	115	-8	9,251,802	106	-13
1997	627,423	74	-41	7,918,084	86	-21
1998	780,472	124	50	9,821,224	124	38
1999	664,055	85	-39	7,575,540	77	-47

Source: BankScope 2000; own calculations.

NEBs	EQUITY th \$	Change compared to previous year (%)		Total Deposits th \$	Change compared to previous year (%)	
1990	24,141	100		441,025	100	
1991	23,401	97	-3	659,866	150	50
1992	17,769	76	-21	247,689	38	-112
1993	10,889	61	-15	359,692	145	108
1994	33,332	306	245	345,115	96	-49
1995	34,731	104	-202	424,273	123	27
1996	-4,535	-13	-117	477,837	113	-10
1997	29,491	-650	-637	246,932	52	-61
1998	38,105	129	780	297,991	121	69
1999	42,545	112	-18	215,461	72	-48

Source: BankScope 2000; own calculations.

Foreign banks	EQUITY th \$	Change compared to previous year (%)		Total Deposits th \$	Change compared to previous year (%)	
1990						
1991	18,273	100		80,234	100	
1992	15,889	87	-13	154,288	192	92
1993	18,186	114	28	162,927	106	-87
1994	23,020	127	12	259,052	159	53
1995	40,940	178	51	492,634	190	31
1996	44,821	109	-68	625,800	127	-63
1997	43,302	97	-13	611,424	98	-29
1998	74,162	171	75	838,010	137	39
1999	82,429	111	-60	817,573	98	-39

Source: BankScope 2000; own calculations.

Table A4-4-2: Data on foreign banks in the Czech Republic

		Country of origin	Begin of operation	1995 Capital CZK mn	1995 Assets CZK bn	Staff (Branches)
1. Bank Austria Creditanstalt a.s.	S	Austria	1.4.91	1,100*	11.9*	270(8)
2. Société Générale Banka	S	France	15.4.91	774	13.8	130(3)
3. Citibank	S	US	20.6.91	1,200*	13.5*	165(1)
1. Bank Austria (ER) a.s. ^c	S	Austria	1.1.92	750	8.0	215(6)
2. Hypo-Bank CZ a.s. ^d	S	Germany	26.2.92	903	7.0	274(20)
3. BNP-Dresdner Bank (ER) a.s.	S	Germ./Fra	12.5.92	500	8.0*	115(1)
4. Vereinsbank CZ a.s.	S	Germany	1.7.92			
5. Credit Lyonnais Bank	S	France	12.11.92	500	8.7*	52(1)
6. Commerzbank AG	B	Germany	1.12.92	n.a.	37	100(1)
7. Zivnostenska banka	SP	Germany	1992 ^b			
1. Vseobecná Úverová Banka	B	Slovakia	14.1.93	n.a.	1.7	90(2)
2. Giro Credit-Sparkassen banka	S	Austria	1.2.93	500	20	100(2)
3. ABN-AMRO Bank NV	B	Netherlands	6.5.93	n.a.	5.0*	59(1)
4. Raiffeisenbank a.s.	S	Austria	1.7.93	500	7.0	130(6)
5. ING Bank NV	B	Netherlands	1.9.93	n.a.	29	120(3)
6. Wüstenrot a.s.	S	Germany	11.11.93			
7. Deutsche Bank AG	B	Germany	1.12.93	n.a.	n.a.	(1)
1. Volksbank	B	Austria	1.1.94	n.a.	n.a.	18(1)
2. IC Banka	S	Malaysia	12.4.94	500	0.63	28(1)
3. Waldviertler Sparkasse von ¹⁸⁴²	B	Austria	1.5.94			
1. Raiffeisenbank im Sti. Wald.	B	Germany	1.1.95			
2. Sparkasse Mühlviertel	B	Austria	20.3.95			
1. Interbanka a.s.	SP	Germany	1997 ^a	500	2.7	85(1)
2. Westdeutsche Landesbank ^c	B	Germany	1997			
3. Midland Bank	B	UK	5.97			
Banka Hana	SP	Belgium	1997			
GE Capital Bank	SP	US	1998			
Raiffeisen stavebni sporitelna	SP	Austria	30.7.93			

S = Subsidiary; B =Branch; P = Privatised to foreign investors; ^a The bank was originally established as a domestic bank on 1.2.1991. Since 1997 Interbanka has been a bank with solely foreign participation. The main shareholder is Bayerische Landesbank, a German bank. The second majority shareholder is the Hungarian Foreign Trade Bank. The third minor stakeholder of 8% is Pavak, an Austrian bank; ^b The bank was established in 1868 and privatized to foreign investors in 1992.

^c Bank Austria is 87% Austrian owned. Since 30.6.98 the bank is merged to Bank Austria Creditanstalt; ^d wound up without liquidation since 31.12.1998 the bank merged with Vereinsbank and became Hypo-Vereinsbank; ^e operation not started

*1994 figure

Source: Prague Post, April 10-16, 1996. CNB, 2000.

Table A4-5-1: Total Loans to Total Deposits

SOBs											
Total Loans/Deposits %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean
Ceska Sportelna			32.6	34.4	34.1	37.3	44.0	49.0	40.9	31.8	38.0
CSOB	17.4	24.0	40.9	74.4	68.6	59.2	56.9	63.0	64.5		52.1
Investicni a Postovni Banka			90.0	78.7	81.0	73.9	77.8	70.7			78.7
Komerčni Banka			69.3	72.4	75.0	70.0	66.6	65.8	62.0	57.2	67.3
Zivnostenska banka	48.7	14.2									31.4

Source: BankScope 2000; own calculations.

NEBs											
Total Loans/Deposits %	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Mean
Banka Hana					77.7	71.1	79.7				76.1
Bankovni dum SKALA				86.6	79.0						82.8
Ceska Exportni Banka								37.1	9.4	14.8	20.4
Ceskomoravska Zarucni a Rozvojova Banka					1.9	2.7	0.5	8.2	35.7	51.8	16.8
Coop Banka			101.8	85.5	76.9	60.1	51.1				75.1
Foresbank					135.6	48.2	38.8	10.5			58.3
GE Capital Bank	100.3	102.4	34.2	66.9	72.6	60.4	52.9				70.0
Interbanka			70.7	54.3	44.2	62.4	49.9				56.3
Moravia Banka			105.1	93.8	69.5	68.6	70.1	62.6	64.8		76.4
Pragobanka			100.8	97.4	88.9	71.2	69.0	59.6			81.1
Prvni Mestska Banka							32.7	23.1	13.7	17.8	21.8
Union Banka			177.3	80.1	86.5	88.3	49.3	56.4	56.3	69.1	82.9
Universal Banka					71.5	74.3	57.9	27.5			57.8

Source: BankScope 2000; own calculations.

Table A 5-2-2a: Interbanka and Big banks Interest Rates

	Interbanka		IPB		Komerční Banka 1)		Česká spořitelna	
	1996	1997	1996	1997	1995	1996	1996	1997
Demand deposits	13	5.4	3	3	5.18	5.63		
Time deposits	7.8	9.4	11	12				
Household demand deposit	13	5.4	3	3				
Household time deposit	7.8	9.4	9	9				
Credit to firms	16	18	15	18	12.02	12.26		
Average net interest margin	5.6	10.6	8.5	11.25	6.84	6.63	5.03	5.27

Source: Annual reports. 1) average interest rates on loans and deposits.

Table A 5-2-2b: Interbanka and Big banks' average Interest Rates offered

	Interbanka		Average rate in big banks		Difference between Interbanka and average rate of big banks in %	
	1996	1997	1996	1997	1996	1997
Average deposit rate	10.4	7.4	6.1	6.75	171	110
Credit to firms	16	18	13.63	18	117	100
Average net interest margin	5.6	10.6	6.72	8.26	83	128

Source: Annual reports.

Table A 5-2-2c: Interbank borrowing rates for CZK and foreign currency denominated deposits and newly drawn credits

	1993	1994	1995	1996	1997	1998	1999	2000
1. Newly drawn CZK credits	14.6	13.7	13.1	13.6	16.5	11.9	6.7	6.7
2. Interest on stock of loans	14.0	12.8	12.7	12.5	13.9	10.5	7.7	7.1
3. CZK Deposits	6.8	6.9	6.9	6.7	8	6.7	3.7	3.3
4. Newly drawn foreign currency credits					5.9	5.4	6.1	6
5. Foreign currency deposits					2.7	2.3	2.7	3.2
6. PRIBOR 3M		9.11	10.86	11.98	15.97	14.33	6.84	5.36
7. Discount rate (end of year)		8.5	9.5	10.5	13	7.5	5	5
8. Repo 2W (end of year)			11.30	12.40	14.75	9.5	5.25	5.25
9. Lombard rate (end of year)		11.5	12.5	14	23	12.5	7.5	7.5

Source: Czech Ministry of Finance, 2000.

Table A 5-2-5: Magnitude and Volatility of Capital Flows 1993-1998 (Q III)

	Average quarterly inflows (mil. \$)			Coefficient of variation		
	1993-98	1993-96	1997-98	1993-98	1993-96	1997-98
<i>Current account</i>	-424	-376	-533	-1.16	-1.40	-0.70
<i>Financial account</i>	935	1186	361	0.85	0.64	1.44
FDI (net)	335	328	350	0.93	1.10	0.41
Portfolio investment (net)	251	284	175	1.34	0.89	2.68
Other investment (net)	348	574	-165	1.87	0.85	-4.21
Short-term (net)	-19	49	-171	-30.10	8.82	-4.20
Inflow	662	717	535	0.85	0.67	1.30
Outflow	-680	-668	-707	-1.16	-0.64	-1.81
Long-term (net)	367	525	6	1.20	0.71	63.32
Inflow	364	492	73	0.68	0.43	1.40
Outflow	3	33	-67	40.71	3.08	-1.30

Source: CNB 1999.

Table A 6-2-1: Descriptive Statistics

Key Balance Sheet Items	Combined (STDEV)	1992	1993	1994	1995	1996	1997	1998	1999
Liquid Assets Ratio	14.57 (14.78)	5.66	6.70	7.23	11.49	10.88	18.86	25.05	31.28
Short-Term Loans Ratio	47.21 (24.02)	57.08	57.82	52.11	50.37	52.22	39.74	35.55	33.45
Financial Investments Ratio	14.12 (12.22)	3.53	9.19	12.69	19.69	15.29	13.91	14.40	16.99
Retail Loans Ratio	44.85 (20.63)	54.74	54.29	49.96	46.81	48.29	38.71	35.55	32.10
Retail Deposits Ratio	47.31 (22.27)	43.15	49.52	50.88	47.77	49.48	46.05	45.20	43.82
Institutional Deposits Ratio	35.23 (19.38)	37.46	37.38	35.31	36.23	37.25	33.64	33.38	31.07
Equity Ratio	8.84 (10.15)	13.44	9.13	10.82	10.68	4.81	7.15	8.65	8.04
Log of Assets	5.81 (0.65)	5.62	5.60	5.68	5.82	5.88	5.90	6.03	5.92

Key Income Expenditure Items	Combined	1992	1993	1994	1995	1996	1997	1998	1999
Non-Interest Costs Ratios	4.93 (5.32)	3.26	4.30	4.47	5.70	7.31	3.30	5.64	4.30
Total Cost Ratio	11.83 (7.41)	8.18	10.94	10.69	12.21	14.63	11.96	13.61	10.14
ROA	-0.93 (4.64)	0.23	0.01	0.07	-1.01	-3.92	-0.62	-0.93	0.04
ROE	-10.10 (66.79)	3.15	-22.61	4.97	-12.33	-16.55	-1.34	-25.67	-8.89

Output Input Variables and Other Ratios	Combined	1992	1993	1994	1995	1996	1997	1998	1999
Total Loans Ratio	42.99 (19.18)	52.82	52.53	49.67	42.96	41.41	36.93	35.59	35.03
Total Investment Ratio	46.58 (21.14)	38.25	38.63	39.68	45.92	47.27	52.43	52.80	56.09
Total Borrowing Ratio	84.98 (13.78)	82.89	87.23	84.84	82.92	90.11	86.04	83.42	80.42
Price of Borrowed Funds	7.65 (4.60)	5.68	6.41	6.57	6.96	7.98	10.19	9.48	6.89
Price of Labour	13.36 (6.50)	11.91	13.99	12.38	12.97	13.40	12.54	15.22	14.58
Number of Years in Business:									
Mean	13.03 (23.29)	9.27	8.85	9.21	9.90	11.07	12.30	13.64	14.92
Median	8	1.5	2	3	4	5	6	7	8
Modus	8	1	2	3	4	5	6	7	8
Percentage of Foreign bank share	15.63 (8.89)	0	7.2	11.67	16.46	18.84	22.28	21.35	27.2
Number of Banks	180	14	20	26	27	27	25	22	19

Table A6-5a: Sample Banks

Bank	Begin of operation	Number of years in business	Foreign stake	Dummy 1= foreign 0=domestic
1. Bank Austria (Bank Austria Creditanstalt CR)	1991. On July 1, 1998 it merged with Creditanstalt a.s. Name after merger is Bank Austria Creditanstalt Czech Republic a.s.	7	Subsidiary, is at 87% Austrian owned	1
2. Creditanstalt (Bank Austria Creditanstalt CR)	1.4.1991 start as Creditanstalt A.S., Prague. On July 1, 1998 absorbed Bank Austria (CR) a.s. and its name changed to Bank Austria Creditanstalt Czech Republic.	9	Subsidiary	1
3. Banka Hana	June 27, 1990.	9	Stake of the Belgian Credit Bank: 1997=35.84%;1998=35.84%; 1999= 87.26%	1 in 1997
4. Bankovni Dum Skala	Begin: 13.12.1990. In 1996 the business - valued at CZK 487,350,000 - was acquired by Unionbanka.	5		0
5. BNP-Dresdner Bank	12.5.1992	8	Subsidiary	1
6. Ceska Exportni Banka- Czech Export Bank	1995.	5		0
7. Ceská Sporitelna	1969. Upon the break-up of the CSFR in January 1993, CS was divided	31	No Foreign involvement until incl. 1997. At the beginning of 2000 the state interest in Ceska Sporitelna was sold to Erste Bank Sparkassen of Austria.	0
8. Ceskomoravska Zaruční a Rozvojova Banka	January 28, 1992.	8		0
9. CSOB-Czech Commercial Bank	January 1, 1965; In 1993 the CSOB lost its federal status and was recapitalised.	35	In 1999 a stake of 65.7% was privatised to the Belgian KBC Group. KBC increased its stake to 84% by acquiring an additional stake from the Slovak Government. Foreign involvement in 2000 is 94.20%.	0
10. Citibank	June 17, 1991.	8	Subsidiary	1
11. Coop Banka	24.02.1992; Conservatorship imposed: 23.04.1996; This bank no longer exists.	4		0
12. Credit Lyonnais Bank	12.11.1992	7	subsidiary	1
13. Erste Bank Sparkasse	Established on February 1, 1993.	7		1
14. Expandia Banka	Begin in 1998	2	Bank ownership structure: 50.10% Group of Ceska pojistovna a.s. 47.06% Expandia, a.s 2.84% other shareholders	0
15. Foresbank	07.09.1993; licence revocation: 30.06.1997; This bank no longer exists.	4		0
16. GE Capital Bank	March 1990.	8	previously Agrobanka, a.s. In June 1998, Agrobanka, a.s. changed its name to GE Capital Bank.	1 in 1998
17. Hypo-Bank	February 17, 1992. On 31.12.1998 it merged with Vereinsbank. Name after the merger: HypoVereinsbank.	7	Subsidiary	1
18. Interbanka	January 23, 1991.	8	The bank was originally established as a DB on 1.2.1991. since 1997 Subsidiary	1 in 1997
19. Investicni a Postovni Banka - IPB	March 1992	8	<i>In 1998 a stake of 46% was privatised to Nomura</i>	1 in 1998
20. Komerční Banka	January 1990	10	In 97 fully domestic owned 60% of Komerční banka's shares are owned by the NPF rest to be privatised In 2000= 15.03%	0
21. Moravia Banka	12. 5. 1992; On December 8, 1999, its banking licence revoked.	8		0
22. Pragobanka	11.09.1990; Banking licence revoked,	9		0

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	effective on October 24, 1999.			
23. Prvni Mestska Banka	5.11.1992	7		0
24. Raiffeisenbank	1.7.93	6	subsidiary	1
25. Soci�t� Generale	15.4.1991. On January 1, 1998 its name changed to Soci�t� Generale, pobočka Praha (Prague branch).	9	Subsidiary	1
26. Union banka	March 27, 1991. In 1996, acquired some assets and liabilities of Ekoagrobanka and of Bankovni dum Skala, as. In 1997, acquired similar assets of Evrobanka, as. In 1998, acquired some assets of Foresbank, a.s.	9		0
27. Universal Banka	27.01.1993; Licence revocation 10.02.1999	7		0
28. Vereinsbank	1.7.1992 On 31.12.1998 Vereinsbank merged with Hypo-Bank. Name after the merger: HypoVereinsbank.	7	Subsidiary	1
29. Velkomoravska Banka	Begin: 3.11.1992. Licence revoked on 10.7.1998.	5		0
30. Zivnostenska banka	1868.	131	Subsidiary; In 1992 Berliner Handels-und Frankfurter Bank (BHF) and the World Bank's International Financial Corporation (IFC) injected US\$28m of fresh capital into Zivnostenska Banka giving BHF a 40 % stake and the IFC 12%. The remaining 48% privatised to private individuals and Czech investment funds (3% was retained for restitution and the remaining 45% sold off.) After January 1998 Zivnostenska Banka had a new shareholder as BHF Bank sold its stake to Bankgesellschaft Berlin (BGB). BGB largest shareholder in 1998 with 47%. As of Sep 2000 : BGB owns 80.11%; Intern. Finance Group 5.04%; Other corporates 8.12%; Individuals 6.73%.	1

Table A6-5b: Variables Used in the Estimations

SOBs (th \$)	1992	1993	1994	1995	1996	1997	1998	1999
Total Loans	3,355,481	3,613,236	4,324,646	5,037,375	5,536,386	4,827,672	5,262,307	3,550,951
% Assets	47.3	56.3	53.3	48.8	49.5	51.4	47.4	37.3
Total Investments	3,583,367	2,729,534	3,541,624	4,561,838	4,553,847	3,555,224	4,441,116	4,868,414
% Assets	44.8	35.1	38.0	42.0	39.1	36.4	38.9	51.4
Total Borrowed Funds	6,837,793	6,258,227	7,592,820	9,261,963	9,831,059	8,424,429	9,993,035	8,357,042
% Assets	89.9	89.4	87.5	87.4	86.7	88.3	87.8	87.2
Price of Borrowed Funds	0.069	0.082	0.069	0.063	0.069	0.077	0.084	0.058
Price of Labour	7.7	7.1	7.9	9.1	10.3	9.1	11.9	11.4
Net Income	-16,182	-24,701	72,685	96,825	110,338	-39,302	-81,714	-119,876
% Assets	-0.10	-1.42	0.86	0.93	0.97	-0.76	-0.45	-1.00
Total Cost	783,259	897,823	839,674	936,631	1,054,240	1,131,417	1,510,574	1,076,767
% Assets	9.9	14.3	9.8	8.9	9.3	12.2	13.0	11.0

Foreign banks (th \$)	1992	1993	1994	1995	1996	1997	1998	1999
Total Loans	103,594	95,714	133,484	254,743	296,430	299,054	740,342	397,674
% Assets	35.1	35.2	37.8	37.1	38.2	39.6	38.0	38.8
Total Investments	177,652	144,895	210,950	338,408	447,262	408,632	734,650	589,092
% Assets	57.4	59.2	55.6	54.1	55.3	52.5	53.2	53.6
Total Borrowed Funds	268,966	227,186	323,694	566,441	710,764	660,756	1,438,680	845,836
% Assets	83.9	87.0	87.4	86.8	89.8	87.3	87.6	80.1
Price of Borrowed Funds	0.047	0.048	0.043	0.054	0.068	0.086	0.104	0.082
Price of Labour	15.9	19.3	14.7	14.9	16.3	15.7	17.6	17.0
Net Income	2696	3310	3627	5564	7005	2867	-17613	4711
% Assets	0.39	0.76	0.71	0.78	0.82	-0.26	-1.41	0.29
Total Cost	25,026	21,222	24,270	43,225	63,514	79,127	215,243	103,493
% Assets	7.5	7.7	6.7	7.1	8.3	10.3	13.4	10.3

NEBs (th \$)	1992	1993	1994	1995	1996	1997	1998	1999
Total Loans	120,319	207,584	241,956	250,751	246,382	99,352	127,016	133,688
% Assets	68.3	68.0	58.4	46.3	41.7	25.4	26.1	26.2
Total Investments	131,054	90,076	100,256	165,463	182,111	196,819	191,060	212,257
% Assets	21.1	19.8	26.9	39.8	42.7	60.3	57.8	63.9
Total Borrowed Funds	254,627	306,748	345,363	426,547	478,403	287,598	311,218	303,455
% Assets	77.5	86.4	81.8	77.9	91.6	82.9	72.4	77.1
Price of Borrowed Funds	0.055	0.076	0.083	0.084	0.092	0.140	0.121	0.060
Price of Labour	12.6	13.1	11.9	12.4	11.5	9.2	11.0	10.9
Net Income	1009	-8085	-940	-7931	-53531	-4278	-3152	-999
% Assets	0.411	-0.345	-0.863	-3.458	-12.315	-1.199	-3.958	-2.252
Total Cost	30,399	47,649	53,287	69,315	99,722	51,867	59,316	36,134
% Assets	12.4	12.5	14.3	18.0	22.2	14.5	14.2	9.4

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All banks (th \$)	Combined	1992	1993	1994	1995	1996	1997	1998	1999
Total Loans	969,892	1,039,872	859,286	835,834	968,843	1,052,740	959,728	1,197,774	844,898
% Assets	43.0	52.82	52.53	49.67	42.96	41.41	36.93	35.59	35.03
Total Investments	910,842	1,130,742	635,276	669,574	886,737	942,806	844,306	1,175,682	1,138,758
% Assets	46.5	38.25	38.63	39.68	45.92	47.27	52.43	52.80	56.09
Total Borrowed Funds	1,846,056	2,139,628	1,479,738	1,457,946	1,799,965	1,967,733	1,783,533	2,394,866	1,885,830
% Assets	85.0	82.89	87.23	84.84	82.92	90.11	86.04	83.42	80.42
Price of Borrowed Funds	0.08	0.06	0.06	0.07	0.07	0.08	0.10	0.09	0.07
Price of Labour	13.4	12.12	13.99	12.38	12.97	13.40	12.54	15.22	14.58
Net Income	-3,876	-3,236	-6,850	12,667	13,086	-4,591	-6,166	-2,6843	-16,463
% Assets	-1.3	0.21	-0.12	0.01	-1.08	-5.00	-0.64	-2.00	-0.58
Total Cost	232,586	243,967	208,286	164,644	189,191	227,216	238,770	369,931	245,564
% Assets	11.8	8.18	10.94	10.69	12.21	14.63	11.96	13.61	10.14

Appendix A6-8-1: Fourier-Flexible Specification Basic Estimate

Table A6-8-1-1: Fourier-Flexible Cost Function Specification - Regression Results

Total Cost (no dummies)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Cobb-Douglas w1, w2, y1, y2, y3	5	179	0.935	0.933	29.33	0.70		
Translog	20	179	0.963	0.958	16.96	0.97		
Translog + 64 ¹ Fourier								
Common	84	158	0.98	0.95	8.97	1.33	18	
Fixed	84	158	0.99	0.98	2.12	1.97	16	all insignificant
SUR+ common constant	84	158	0.98	0.95	9.22	1.16	6	
SUR+ common constant (after the elimination of insign. Variables)	78	158	0.98	0.95	9.21	1.19	0	
<i>Likelihood Ratio test</i>					LR = 158 * ln(16.96 / 9.21) = 96.47 > 37.6			
URSS _{Fourier} = 9.21 (n=158, k=78)					From the χ^2 tables with 20 d.f. the 1% significance point is 37.6.			
RRSS _{Translog} = 16.96 (n=179, k=20)								
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	0.73	Probability: 0.55						
LM test statistic	1.97	Probability: 0.37						

Note: N = number of observations; RSS = Sum of squared residuals; DW = Durbin Watson statistic. ¹ The following 6 trigonometric terms were dropped: cos(H1), sin(H1), cos(H2), sin(H2), cos(H3), sin(H3).

Table A6-8-1-2: Fourier-Flexible Cost Function Specification: Pooled Least Squares Estimates (for brevity trigonometric terms are not displayed)

Dependent Variable: LNTC				
Method: Seemingly Unrelated Regression				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 158				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.492001	0.777215	10.92619	0.0000
LNW1	1.814940	0.268228	6.766409	0.0000
0.5*LNW1LNW1	0.596344	0.051662	11.54322	0.0000
LN Y1	-2.574452	0.296989	-8.668518	0.0000
LN Y3	2.412370	0.323944	7.446874	0.0000
0.5*LN Y1LN Y1	0.183013	0.034065	5.372426	0.0000
0.5*LN Y3LN Y3	0.881138	0.119776	7.356561	0.0000
LN Y1LN Y2	0.337152	0.037658	8.953033	0.0000
LN Y1LN Y3	-0.439453	0.070219	-6.258320	0.0000
LN Y2LN Y3	-0.388890	0.039984	-9.726105	0.0000
LN Y1LN W1	-0.323067	0.035384	-9.130260	0.0000
LN Y1LN W2	0.324984	0.029180	11.13707	0.0000
LN Y2LN W1	-0.221310	0.020687	-10.69779	0.0000
LN Y3LN W2	-0.322752	0.027281	-11.83054	0.0000
LN Y3LN W1	0.545807	0.047239	11.55406	0.0000

	Table A6-8-1-3a: Fourier Cost Inefficiency (SFA)					Table A6-8-1-3b: Cost Inefficiency (DFA)				
	All banks	St.Dev	SOB	NEB	Foreign Banks	All banks	St.Dev	SOB	NEB	Foreign Banks
1992	20.2	9.4	25.5	15.9	22.6	12.2	9.0	11.1	12.1	13.1
1993	26.2	11.9	29	23.5	27.8	15.2	9.3	11.7	17.5	14.3
1994	17.1	9.1	14.1	21.7	12.9	16.0	14.8	13.7	18.7	14.0
1995	16.5	9.4	10.4	19.9	15.2	27.0	13.0	29.3	28.7	24.4
1996	13.1	6.7	12.1	13.4	13.2	19.0	7.7	20.6	18.1	19.4
1997	22.3	7.3	27.2	16.6	24.1	14.6	9.4	15.1	12.7	15.6
1998	15.8	9.7	19.8	20.0	13.2	15.2	8.9	22.7	7.8	17.2
1999	12.7	6.2	10.4	13.7	12.6	18.1	17.4	16.4	26.7	15.0
Combined 1992-99	27.7	8.0	18.6	18.1	17.7	26.7	10.2	17.6	17.8	16.6

Table A6-8-1-4: Cost-Inefficiency Score per Bank

	Ranking by the SFA technique	Data period	Start and end of operation	X-ineff		Ranking by the DFA technique	Data period	Start and end of operation	X-ineff
F	Ceska Exportni Banka	95-99	1995-	6.5	F	Ceska Exportni Banka	95-99	1995-	0.3
E	BNP-Dresdner Bank	93-99	1992-	9.9	Z	Union banka	92-99	1991-	4.0
D	Bankovni dum SKALA	93-94	1990-96	11.4	S	IPB	92-98	1992-	6.2
Q	Hypovereinsbank	95-99	1992-	11.9	V	Pragobanka	92-97	1990-99	10.8
Z	Union banka	92-99	1991-	12.2	L	Credit Lyonnais Bank	92-99	1992-	10.9
X	Raiffeisenbank	94-99	1993-	12.2	W	Prvni Mestska Banka	96-99	1992-	11.4
W	Prvni Mestska Banka	96-99	1992-	12.5	X	Raiffeisenbank	94-99	1993-	11.9
S	IPB	92-98	1992-	13.9	E	BNP-Dresdner Bank	93-99	1992-	12.6
N	Foresbank	94-97	1993-97	14.6	R	Interbanka	92-99	1991-	12.8
Y	Société Generale	94-97	1991-	15.1	Q	Hypovereinsbank	95-99	1992-	12.9
M	Erste Bank Sparkasse	93-99	1993-	15.2	M	Erste Bank Sparkasse	93-99	1993-	13.9
L	Credit Lyonnais Bank	92-99	1992-	15.5	N	Foresbank	94-97	1993-97	14.7
R	Interbanka	92-99	1991-	16.4	T	Komercni Banka	92-99	1990-	15.8
T	Komercni Banka	92-99	1990-	17.4	U	Moravia Banka	92-98	1992-99	15.9
V	Pragobanka	92-97	1990-99	17.4	Y	Société Generale	94-97	1991-	16.4
G	Ceska Sportelna	92-99	1969-	17.6	B	Bank Austria Creditanstalt	92-99	1991-	18.1
O	GE Capital Bank	92-96, 98-99	1990-	18.3	O	GE Capital Bank	92-96, 98-99	1990-	19.3
U	Moravia Banka	92-98	1992-99	18.6	J	Citibank	92-99	1991-	21.9
AA	Universal Banka	94-97	1993-99	19.1	AC	Zivnostenska banka	92-99	1868-	22.3
A	Bank Austria	93-97	1991-	19.7	G	Ceska Sportelna	92-99	1969-	22.4
P	Hypo-Bank	93-98	1992-	20.2	A	Bank Austria	93-97	1991-	22.8
B	Bank Austria Creditanstalt	92-99	1991-	20.2	P	Hypo-Bank	93-98	1992-	22.8
J	Citibank	92-99	1991-	20.5	AA	Universal Banka	94-97	1993-99	24.7
AC	Zivnostenska banka	92-99	1868-	20.8	K	Coop Banka	92-96	1992-96	26.5
C	Banka Hana	94-98	1990-	22.3	C	Banka Hana	94-98	1990-	28.7
K	Coop Banka	92-96	1992-96	23.2	I	CSOB	92-99	1965-	29.0
I	CSOB	92-99	1965-	24.8	AD	Expandia Banka	98-99	1998-	43.9
AD	Expandia Banka	98-99	1998-	29.5	AB	Velkomoravska Banka	93-95	1992-98	55.7
H	Ceskomoravska Zarucni a.R.	94-99	1992-	37.1	H	Ceskomoravska Zarucni a.R.	94-99	1992-	57.6
AB	Velkomoravska Banka	93-95	1992-98	39.1	D	Bankovni dum Skala	93-94	1990-96	

Note: Banks that fall into the same category across estimation techniques are highlighted.

Table A6-8-1-5: Best-Practice Banks

Best Banks		Cost	Profit	Non-Best-Practice Banks	
Q	Hypovereinsbank	1	4	C	Banka Hana
Z	Union banka	5		D	Bankovni dum Skala
F	Ceska Exportni Banka	4		E	BNP-Dresdner Bank
S	IPB	4		G	Ceska Sportelna
W	Prvni Mestska Banka		3	H	Ceskomoravska Zarucni a R.
B	Bank Austria Creditanstalt		2	I	CSOB
T	Komercni Banka		2	K	Coop Banka
A	Bank Austria		1	L	Credit Lyonnais Bank
J	Citibank		1	N	Foresbank
M	Erste Bank Sparkasse	1		P	Hypo-Bank
O	GE Capital Bank		1	R	Interbanka
V	Pragobanka		1	U	Moravia Banka
X	Raiffeisenbank		1	Y	Société Generale
AA	Universal Banka	1		AB	Velkomoravska Banka
				AC	Zivnostenska banka
				AD	Expandia Banka

Note: Those banks that are “best-practice” banks by the Fourier-flexible specification with a dummy are highlighted by letter.

Table A6-8-1-6: Best-Practice Banks for Each Year

Cost inefficiency Fourier SFA			Profit inefficiency Fourier SFA	
1992	Z	Union banka	J	Citibank
1993	Z	Union banka	T	Komercni Banka
1994	M	Erste Bank Sparkasse	B	Bank Austria Creditanstalt
1995	S	IPB	O	GE Capital Bank
1996	S	IPB	T	Komercni Banka
1997	AA	Universal Banka	W	Prvni Mestska Banka
1998	F	Ceska Exportni Banka	Q	Hypovereinsbank
1999	Q	Hypovereinsbank	X	Raiffeisenbank
Cost inefficiency Fourier DFA			Profit inefficiency Fourier DFA	
1992	S	IPB	V	Pragobanka
1993	S	IPB	B	Bank Austria Creditanstalt
1994	Z	Union banka	A	Bank Austria
1995	F	Ceska Exportni Banka	Q	Hypovereinsbank
1996	F	Ceska Exportni Banka	Q	Hypovereinsbank
1997	Z	Union banka	Q	Hypovereinsbank
1998	F	Ceska Exportni Banka	W	Prvni Mestska Banka
1999	Z	Union banka	W	Prvni Mestska Banka

Note: Those banks that are “best-practice” banks by the Fourier-flexible specification with a dummy are highlighted by letter.

Table A6-8-1-7: Fourier-Flexible Profit Function Specification - Regression Results

Total Profit (no dummies)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	number of insignificant translog variables	Significance of cross section specific constants
All Translog + 64 ¹ Fourier								
Common	84	157	0.71	0.38	9.69	2.43	19	
Fixed	84	157	0.81	0.30	6.51	2.93	20	all insignificant
SUR+ common constant	84	157	0.71	0.38	9.73	2.47	6	
SUR+ common constant (after the elimination of insign. variables)	80	157	0.71	0.41	9.77	2.45	0	
ARCH-LM Statistic								
Lagged squared residuals up to order 2								
F-statistic	4.31	Probability: 0.13						
LM test statistic	4.45	Probability: 0.11						

Note: N = number of observations; RSS = Sum of squared residuals; DW = Durbin Watson statistic. ¹ The following 6 trigonometric terms were dropped: cos(H1), sin(H1), cos(H2), sin(H2), cos(H3), sin(H3).

Table A6-8-1-8: Fourier-Flexible Profit Function Specification: Pooled Least Squares Estimates (for brevity trigonometric terms are not displayed)

Dependent Variable: LN Profit				
Method: Seemingly Unrelated Regression				
Sample: 1992 1999				
Included observations: 8				
Total panel (unbalanced) observations 157				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.43340	1.276854	14.43658	0.0000
LNW1	3.676140	0.359476	10.22638	0.0000
LNW1LNW2	-0.159380	0.040137	-3.970865	0.0002
0.5*LNW1LNW1	0.199789	0.037599	5.313628	0.0000
0.5*LNW2LNW2	-0.409581	0.032764	-12.50096	0.0000
LN Y1	-0.650211	0.301527	-2.156391	0.0342
LN Y2	-1.485375	0.216497	-6.860947	0.0000
LN Y3	2.140802	0.501513	4.268689	0.0001
0.5*LN Y1LN Y1	0.077869	0.025044	3.109281	0.0026
0.5*LN Y2LN Y2	0.203165	0.017607	11.53867	0.0000
0.5*LN Y3LN Y3	-0.463003	0.054170	-8.547271	0.0000
LN Y1LN Y3	0.076723	0.028886	2.656064	0.0096
LN Y1LN W1	0.067439	0.031653	2.130583	0.0364
LN Y1LN W2	-0.223989	0.029913	-7.488010	0.0000
LN Y2LN W1	0.254797	0.027833	9.154337	0.0000
LN Y2LN W2	0.252188	0.031960	7.890714	0.0000
LN Y3LN W1	-0.508185	0.062086	-8.185131	0.0000

Table A6-8-1-9a: Fourier Profit Inefficiency (SFA)						Table A6-8-1-9b: Profit Inefficiency (DFA)				
	All banks	St.Dev	SOB	NEB	Foreign Banks	All banks	St.Dev	SOB	NEB	Foreign Banks
1992	12.8	9.7	13.8	<i>12.0</i>	13.1	15.7	8.6	15.7	17.4	<i>13.3</i>
1993	20.4	9.7	<i>7.7</i>	21.3	23.1	12.5	6.8	15.3	13.6	<i>10.7</i>
1994	25.7	7.9	<i>22.4</i>	27.2	25.1	11.0	6.3	11.2	11.7	<i>10.3</i>
1995	29.9	7.7	<i>28.1</i>	28.9	31.5	16.3	8.6	18.2	18.7	13.2
1996	16.3	9.0	16.7	17.9	<i>14.6</i>	14.9	7.4	15.0	<i>13.8</i>	16.0
1997	21.0	11.1	27.2	<i>18.0</i>	20.6	13.3	7.9	<i>10.5</i>	14.0	14.0
1998	26.1	10.8	33.9	29.3	<i>23.3</i>	21.4	7.8	<i>17.7</i>	18.0	23.6
1999	6.9	7.7	<i>6.4</i>	7.8	6.7	19.8	9.3	20.3	<i>19.6</i>	19.8
Combined 1992-99	31.6	8.0	<i>19.5</i>	20.3	19.7	21.4	7.2	15.5	15.8	<i>15.1</i>

Table A6-8-1-10: Profit-inefficiency Score Ranking per Bank

	Ranking by the SFA technique	Start and end of operation	Data Period	X-ineff SFA		Ranking by the DFA technique	Start and end of operation	Data Period	X-ineff DFA
W	Prvni Mestska Banka	1992-	96-99	8.5	W	Prvni Mestska Banka	1992-	96-99	2.1
Q	Hypovereinsbank	1992-	95-99	13.9	V	Pragobanka	1990-99	92-97	2.8
V	Pragobanka	1990-99	92-97	16.9	B	Bank Austria Creditanstalt	1991-	92-99	4.6
B	Bank Austria Creditanstalt	1991-	92-99	17.2	Q	Hypovereinsbank	1992-	95-99	5.2
L	Credit Lyonnais Bank	1992-	92-99	18.2	A	Bank Austria	1991-	93-97	7.4
AD	Expandia Banka	1998-	98-99	18.2	X	Raiffeisenbank	1993-	94-99	11.4
C	Banka Hana	1990-	94-98	18.3	C	Banka Hana	1990-	94-98	11.8
X	Raiffeisenbank	1993-	94-99	18.3	L	Credit Lyonnais Bank	1992-	92-99	12.2
T	Komerčni Banka	1990-	92-99	18.7	E	BNP-Dresdner Bank	1992-	93-99	12.5
AC	Zivnostenska banka	1868-	92-99	19.6	N	Foresbank	1993-97	94-97	12.8
O	GE Capital Bank	1990-	92-96, 98-99	20.4	I	CSOB	1965-	92-99	13.4
I	CSOB	1965-	92-99	21.2	U	Moravia Banka	1992-99	92-98	13.8
S	IPB	1992-	92-98	21.4	K	Coop Banka	1992-96	92-96	14.1
A	Bank Austria	1991-	93-97	21.6	AC	Zivnostenska banka	1868-	92-99	14.8
R	Interbanka	1991-	92-99	21.8	S	IPB	1992-	92-98	15.0
U	Moravia Banka	1992-99	92-98	21.8	T	Komerčni Banka	1990-	92-99	16.2
J	Citibank	1991-	92-99	21.8	H	Ceskomoravska Zaručni a Rozvojova Banka	1992-	94-99	16.4
K	Coop Banka	1992-96	92-96	22.3	F	Ceska Exportni Banka	1995-	95-99	16.9
N	Foresbank	1993-97	94-97	22.4	G	Ceska Sportelna	1969-	92-99	17.8
F	Ceska Exportni Banka	1995-	95-99	23.2	Y	Société Generale	1991-	94-97	18.5
E	BNP-Dresdner Bank	1992-	93-99	23.7	AB	Velkomoravska Banka	1992-98	93-95	18.9
G	Ceska Sportelna	1969-	92-99	23.8	AA	Universal Banka	1993-99	94-97	19.5
Z	Union banka	1991-	92-99	24.3	O	GE Capital Bank	1990-	92-96, 98-99	19.5
Y	Société Generale	1991-	94-97	25.0	R	Interbanka	1991-	92-99	19.6
P	Hypo-Bank	1992-	93-98	25.7	P	Hypo-Bank	1992-	93-98	19.6
AA	Universal Banka	1993-99	94-97	25.8	J	Citibank	1991-	92-99	20.6
M	Erste Bank Sparkasse	1993-	93-99	26.9	Z	Union banka	1991-	92-99	24.7
AB	Velkomoravska Banka	1992-98	93-95	29.5	AD	Expandia Banka	1998-	98-99	27.7
H	Ceskomoravska Zaručni a R.	1992-	94-99	30.8	M	Erste Bank Sparkasse	1993-	93-99	27.8
D	Bankovni dum Skala	1990-96	93-94	32.1	D	Bankovni dum Skala	1990-96	93-94	

Note: Banks that fall into the same category across estimation techniques are highlighted.

Table A6-8-1-11: Cost and Profit Inefficiency (in %) in Privatised Banks - Fourier (no dummy)

	Cost Inefficiency				Profit Inefficiency			
	Banka Hana '97-	Interbanka '97	GE Capital '98-	IPB '98-	Banka Hana '97-	Interbanka '97	GE Capital '98-	IPB '98-
1992		9.7	22.2	20.2		9.0	0.6	4.8
1993		25.6	22.0	25.4		29.2	36.3	15.4
1994		20.9	25.2	15.3		22.7	26.0	18.2
1995		19.2	10.1	0.0		34.7	0.0	29.3
1996	21.5	12.0	12.7	0.0	11.5	13.8	49.8	19.1
1997	25.7	20.0		27.7	24.2	21.8		51.3
1998	19.8	9.2	21.2	8.3	19.1	29.6	29.2	11.6
1999		14.2	14.7			13.4	0.9	

Note: The extent of X-inefficiency since privatization are highlighted.

Appendix A6-9-3a: Inefficiency in Domestic Banks

Table A6-9-3-1: Translog Cost Function Specification - Domestic Banks - Regression Results

Translog Cost (dummy DGF: Total assets > 1,783,499 and <=16,448,046)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Fixed	21	99	0.984	0.973	5.686	2.118	13	all insignificant
Common	21	99	0.964	0.954	12.534	1.226	20	
SUR+ common constant	21	99	0.964	0.954	12.666	1.200	3	
SUR+ common constant (after the elimination of insign. variables)	18	99	0.963	0.955	12.757	1.157	0	
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	320.9	Probability: 0.04						
LM test statistic	4.0	Probability: 0.14						

	Table A6-9-3-2a: Translog Cost Inefficiency (SFA)				Table A6-9-3-2b: Translog Cost Inefficiency (DFA)			
	All domestic banks	St.Dev.	SOB	NEB	All domestic banks	St.Dev.	SOB	NEB
1992	16.2	8.0	19.5	14.0	15.0	9.7	13.5	15.9
1993	30.7	16.0	33.7	29.2	17.0	15.2	11.7	19.7
1994	13.0	13.0	7.3	14.9	19.7	15.1	14.6	21.4
1995	16.1	12.9	5.2	19.8	26.4	16.6	25.7	26.7
1996	26.1	11.7	19.6	28.2	25.3	12.8	28.3	24.4
1997	42.9	14.7	49.3	39.7	22.6	16.0	21.5	23.1
1998	19.4	14.5	18.6	19.8	21.8	16.0	30.1	17.6
1999	12.9	11.9	24.3	6.1	26.4	25.7	24.5	27.5
Combined 1992-99	49.0	9.4	22.2	21.5	28.5	14.5	21.2	22.0

Table A6-9-3-3: Cost-inefficiency Score Ranking per Domestic Bank

	Ranking by the SFA technique	Start and end of operation	Data Period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data Period	X-ineff
F	Ceska Exportni Banka	1995-	95-99	11.6	F	Ceska Exportni Banka	1995-	95-99	4.1
Z	Union banka	1991-	92-99	14.3	W	Prvni Mestska Banka	1992-	96-99	5.2
W	Prvni Mestska Banka	1992-	96-99	14.7	S	IPB	1992-	92-98	5.8
S	IPB	1992-	92-98	17.3	D	Bankovni dum Skala	1990-96	93-94	6.7
D	Bankovni dum Skala	1990-96	93-94	18.1	Z	Union banka	1991-	92-99	7.5
R	Interbanka	1991-	92-99	18.8	V	Pragobanka	1990-99	92-97	13.7
C	Banka Hana	1990-	94-98	20.5	R	Interbanka	1991-	92-99	17.6
AA	Universal Banka	1993-99	94-97	20.7	AA	Universal Banka	1993-99	94-97	18.2
T	Komercni Banka	1990-	92-99	21.0	T	Komercni Banka	1990-	92-99	19.3
V	Pragobanka	1990-99	92-97	22.7	U	Moravia Banka	1992-99	92-98	21.5
I	CSOB	1965-	92-99	23.1	I	CSOB	1965-	92-99	25.0
O	GE Capital Bank	1990-	92-96, 98-99	23.1	O	GE Capital Bank	1990-	92-96, 98-99	26.2
U	Moravia Banka	1992-99	92-98	23.5	K	Coop Banka	1992-96	92-96	27.9
K	Coop Banka	1992-96	92-96	24.4	G	Ceska Sportelna	1969-	92-99	29.5
G	Ceska Sportelna	1969-	92-99	26.4	C	Banka Hana	1990-	94-98	32.1
N	Foresbank	1993-97	94-97	27.5	N	Foresbank	1993-97	94-97	32.2
AD	Expandia Banka	1998-	98-99	27.9	AD	Expandia Banka	1998-	98-99	43.0
H	Ceskomoravska Zarucni a R.	1992-	94-99	31.8	H	Ceskomoravska Zarucni a R.	1992-	94-99	44.0
AB	Velkomoravska Banka	1992-98	93-95	46.1	AB	Velkomoravska Banka	1992-98	93-95	65.1

Note: Banks that were among the best 10 banks in the estimates for all banks are highlighted by letter.

Table A6-9-3-4: Translog Profit Function Specification:- Domestic Banks - Regression Results

Profit (dummyDGF: Total assets > 1,783,499 and <=16,448,046	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Fixed	21	98	0.390	-0.020	19.785	2.007	19	all insignificant
Common	21	98	0.191	-0.032	26.222	1.424	21	
SUR+ common constant	21	98	0.181	-0.045	26.563	1.389	3	
SUR+ common constant (after the elimination of insign. variables)	16	98	0.184	0.023	26.457	1.399	0	
ARCH-LM Statistic Lagged squared residuals up to order 2								
LM test statistic	3.0	Probability: 0.22						

Table A6-9-3-5a: Translog Profit Inefficiency (SFA)					Table A6-9-3-5b: Translog profit Inefficiency (DFA)			
	All domestic banks	St.Dev.	SOB	NEB	All domestic banks	St.Dev.	SOB	NEB
1992	23.0	14.9	19.9	25.0	35.4	16.0	29.5	39.4
1993	21.9	11.0	7.7	27.2	23.6	14.8	29.1	21.5
1994	30.9	10.2	26.1	32.5	36.2	16.1	32.0	37.5
1995	22.6	9.3	19.6	23.6	35.4	14.8	30.8	37.0
1996	27.8	19.9	10.9	33.4	26.8	14.7	29.9	25.8
1997	21.9	16.5	25.3	20.2	28.8	15.7	22.6	31.9
1998	29.0	20.0	36.4	25.3	28.1	13.0	21.8	31.3
1999	23.9	22.6	35.0	17.3	28.6	14.0	23.0	32.0
Combined 1992-99	33.2	13.6	22.6	25.6	34.4	14.2	27.3	32.0

Table A6-9-3-6: Best-Practice Banks per Year

Best-Practice Banks in the Cost Category (SFA)			Start and end of operation	Data Period	Best-Practice Banks in Profit category (SFA)		Start and end of operation	Data Period
1992	Z	Union banka	1991-	92-99	G	Ceska Sportelna	1969-	92-99
1993	Z	Union banka	1991-	92-99	T	Komercni Banka	1990-	92-99
1994	S	IPB	1992-	92-98	O	GE Capital Bank	1990-	92-96, 98-99
1995	Z	Union banka	1991-	92-99	O	GE Capital Bank	1990-	92-96, 98-99
1996	W	Prvni Mestska Banka	1992-	96-99	I	CSOB	1965-	92-99
1997	AA	Universal Banka	1993-99	94-97	I	CSOB	1965-	92-99
1998	F	Ceska Exportni Banka	1995-	95-99	I	CSOB	1965-	92-99
1999	W	Prvni Mestska Banka	1992-	96-99	I	CSOB	1965-	92-99
Best-Practice Banks in the Cost Category (DFA)					Best-Practice Banks in Profit category (DFA)			
1992	S	IPB	1992-	92-98	I	CSOB	1965-	92-99
1993	S	IPB	1992-	92-98	D	Bankovni dum Skala	1990-96	93-94
1994	Z	Union banka	1991-	92-99	I	CSOB	1965-	92-99
1995	F	Ceska Exportni Banka	1995-	95-99	I	CSOB	1965-	92-99
1996	AA	Universal Banka	1993-99	94-97	I	CSOB	1965-	92-99
1997	W	Prvni Mestska Banka	1992-	96-99	I	CSOB	1965-	92-99
1998	W	Prvni Mestska Banka	1992-	96-99	I	CSOB	1965-	92-99
1999	F	Ceska Exportni Banka	1995-	95-99	I	CSOB	1965-	92-99

Note: Those banks that were selected as “best-practice” in the translog specification where domestic and foreign banks were considered jointly are highlighted by letter.

Table A6-9-3-7: Profit-inefficiency Score Ranking per Domestic Bank

	Ranking by the SFA technique	Start and end of operation	Data Period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data Period	X-ineff
I	CSOB	1965-	92-99	7.0	I	CSOB	1965-	92-99	0.0
W	Prvni Mestska Banka	1992-	96-99	14.5	C	Banka Hana	1990-	94-98	13.7
C	Banka Hana	1990-	94-98	17.6	W	Prvni Mestska Banka	1992-	96-99	16.6
F	Ceska Exportni Banka	1995-	95-99	17.7	D	Bankovni dum Skala	1990-96	93-94	19.4
S	IPB	1992-	92-98	21.7	F	Ceska Exportni Banka	1995-	95-99	21.4
G	Ceska Sportelna	1969-	92-99	24.0	V	Pragobanka	1990-99	92-97	27.4
V	Pragobanka	1990-99	92-97	24.8	G	Ceska Sportelna	1969-	92-99	28.6
AD	Expandia Banka	1998-	98-99	26.0	AB	Velkomoravska Banka	1992-98	93-95	28.6
N	Foresbank	1993-97	94-97	27.6	S	IPB	1992-	92-98	28.9
D	Bankovni dum Skala	1990-96	93-94	28.0	K	Coop Banka	1992-96	92-96	32.0
U	Moravia Banka	1992-99	92-98	28.5	U	Moravia Banka	1992-99	92-98	32.4
Z	Union banka	1991-	92-99	28.6	R	Interbanka	1991-	92-99	33.3
K	Coop Banka	1992-96	92-96	28.8	N	Foresbank	1993-97	94-97	33.4
AB	Velkomoravska Banka	1992-98	93-95	29.0	AD	Expandia Banka	1998-	98-99	34.4
O	GE Capital Bank	1990-	92-96, 98-99	29.4	Z	Union banka	1991-	92-99	35.0
R	Interbanka	1991-	92-99	29.7	AA	Universal Banka	1993-99	94-97	37.3
AA	Universal Banka	1993-99	94-97	30.1	H	Ceskomoravska Zarucni a R.	1992-	94-99	43.6
H	Ceskomoravska Zarucni a R.	1992-	94-99	33.4	T	Komercni Banka	1990-	92-99	49.9
T	Komercni Banka	1990-	92-99	34.1	O	GE Capital Bank	1990-	92-96, 98-99	53.0

Table A6-9-3-8: “Best-Practice” Domestic Banks

	Best-Practice Domestic Banks	Cost	Profit
I	CSOB		11
W	Prvni Mestska Banka	4	
Z	Union banka	4	
F	Ceska Exportni Banka	3	
S	IPB	3	
AA	Universal Banka	2	
O	GE Capital Bank		2
D	Bankovni dum Skala		1
G	Ceska Sportelna		1
T	Komercni Banka		1

Appendix A6-9-3b: Inefficiency in Foreign Banks

Table A6-9-3-9: Translog Cost Function Specification - Foreign Banks - Regression Results

Total Cost (dummy DGB: Total assets >156,905 and <=321,654)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables	Significance of cross section specific constants
Fixed	21	80	0.997	0.994	0.293	1.86	21	all significant
Common	21	80	0.989	0.985	0.962	0.91	18	
SUR+ common constant	21	80	0.989	0.985	0.979	0.84	12	
SUR+ common constant (after the elimination of insign. variables)	16	80	0.988	0.986	1.002	0.80	0	
ARCH-LM Statistic Lagged squared residuals up to order 2								
F-statistic	0.01	Probability: 0.99						
LM test statistic	0.10	Probability: 0.95						

Table A6-9-3-10a: Cost Inefficiency Foreign Banks (SFA)			Table A6-9-3-10b: Cost Inefficiency Foreign Banks (DFA)	
	Mean	St.Dev.	Mean	St.Dev.
1992	5.8	4.2	8.2	7.1
1993	11.8	5.7	10.3	7.3
1994	8.8	5.9	8.9	6.9
1995	6.3	3.8	14.5	7.6
1996	5.5	3.4	11.4	7.6
1997	5.5	4.9	14.0	8.8
1998	6.8	4.0	9.5	8.8
1999	5.0	4.8	9.1	7.6
Combined 1992-99	12.3	4.3	16.1	7.2

Table A6-9-3-11: Cost-Inefficiency Score Ranking per Foreign Bank

	Ranking by the SFA technique	Start and end of operation	Data Period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data Period	X-ineff
Y	Société Generale	1991-	94-97	1.4	Y	Société Generale	1991-	94-97	0.0
E	BNP-Dresdner Bank	1992-	93-99	3.3	E	BNP-Dresdner Bank	1992-	93-99	2.4
X	Raiffeisenbank	1993-	94-99	3.8	M	Erste Bank Sparkasse	1993-	93-99	5.5
O	GE Capital Bank	1990-	92-96, 98-99	4.5	L	Credit Lyonnais Bank	1992-	92-99	5.7
S	IPB	1992-	92-98	4.5	X				
L	Credit Lyonnais Bank	1992-	92-99	4.7	O	Raiffeisenbank	1993-	94-99	6.0
M	Erste Bank Sparkasse	1993-	93-99	4.7	B	GE Capital Bank	1990-	92-96, 98-99	8.0
Q	Hypovereinsbank	1992-	95-99	5.1	Q	Bank Austria Creditanstalt	1991-	92-99	8.3
B	Bank Austria Creditanstalt	1991-	92-99	5.7	A	Hypovereinsbank	1992-	95-99	10.9
R	Interbanka	1991-	92-99	8.7	J	Bank Austria	1991-	93-97	14.7
A	Bank Austria	1991-	93-97	9.2	R	Citibank	1991-	92-99	17.0
J	Citibank	1991-	92-99	9.7	AC	Interbanka	1991-	92-99	18.6
AC	Zivnostenska banka	1868-	92-99	11.0	P	Zivnostenska banka	1868-	92-99	19.7
P	Hypo-Bank	1992-	93-98	12.1	C	Hypo-Bank	1992-	93-98	20.7
C	Banka Hana	1990-	94-98	13.9		Banka Hana	1990-	94-98	27.9

Table A6-9-3-12: Translog Profit Function Specification - Foreign Banks - Regression Results

Total Profit (dummy DGB: Total assets >156,905 and <=321,654)	Number of variables	N	R^2	\bar{R}^2	RSS	DW	Number of insignificant translog variables
SUR+ common constant	21	80	0.941	0.920	0.12	1.30	7
SUR after elim	15	80	0.941	0.927	0.12	1.28	0
ARCH-LM Statistic Lagged squared residuals up to order 2							
F-statistic	7.88	Probability: 0.24					
LM test statistic	3.76	Probability: 0.15					

	Table A6-9-3-13a: Profit Inefficiency (SFA)		Table A6-9-3-13b: Profit Inefficiency (DFA)	
	Mean	St.Deviation	Mean	St.Deviation
1992	0.4	0.4	1.0	0.9
1993	3.7	2.0	1.6	1.7
1994	3.4	1.9	2.5	1.4
1995	4.3	1.8	3.1	1.4
1996	1.0	1.1	3.4	1.8
1997	1.2	0.9	4.5	3.9
1998	2.7	2.1	4.8	2.9
1999	2.4	1.4	2.5	3.0
Combined 1992-99	4.4	1.6	5.1	2.4

Table A6-9-3-14: Profit-inefficiency Score Ranking per Foreign Bank

	Ranking by the SFA technique	Start and end of operation	Data Period	X-ineff		Ranking by the DFA technique	Start and end of operation	Data Period	X-ineff
P	Hypo-Bank	1992-	93-98	1.4	P	Hypo-Bank	1992-	93-98	0.1
B	Bank Austria Creditanstalt	1991-	92-99	1.7	E	BNP-Dresdner Bank	1992-	93-99	1.2
E	BNP-Dresdner Bank	1992-	93-99	1.9	B	Bank Austria Creditanstalt	1991-	92-99	1.5
J	Citibank	1991-	92-99	2.0	J	Citibank	1991-	92-99	2.2
AC	Zivnostenska banka	1868-	92-99	2.3	AC	Zivnostenska banka	1868-	92-99	2.8
X	Raiffeisenbank	1993-	94-99	2.3	X	Raiffeisenbank	1993-	94-99	2.9
L	Credit Lyonnais Bank	1992-	92-99	2.5	L	Credit Lyonnais Bank	1992-	92-99	3.4
S	IPB	1992-	92-98	2.5					
Q	Hypovereinsbank	1992-	95-99	2.6	A	Bank Austria	1991-	93-97	3.7
O	GE Capital Bank	1990-	92-96, 98-99	2.8	Y	Société Generale	1991-	94-97	4.0
Y	Société Generale	1991-	94-97	2.9	Q	Hypovereinsbank	1992-	95-99	4.2
R	Interbanka	1991-	92-99	3.2	O	GE Capital Bank	1990-	92-96, 98-99	4.9
A	Bank Austria	1991-	93-97	3.2	M	Erste Bank Sparkasse	1993-	93-99	5.4
M	Erste Bank Sparkasse	1993-	93-99	3.7	R	Interbanka	1991-	92-99	6.5
C	Banka Hana	1990-	94-98	5.5	C	Banka Hana	1990-	94-98	12.8

Table A6-9-3-15: Best-Practice Banks per Year

Best-Practice Banks in the Cost Category (SFA)			Start and end of operation	Data Period	Best-Practice Banks in Profit Category (SFA)			Start and end of operation	Data Period
1992	B	Bank Austria Creditanstalt	1991-	92-99	L	Credit Lyonnais Bank	1992-	92-99	
1993	M	Erste Bank Sparkasse	1993-	93-99	P	Hypo-Bank	1992-	93-98	
1994	Y	Société Generale	1991-	94-97	E	BNP-Dresdner Bank	1992-	93-99	
1995	B	Bank Austria Creditanstalt	1991-	92-99	B	Bank Austria Creditanstalt	1991-	92-99	
1996	Y	Société Generale	1991-	94-97	A	Zivnostenska banka	1868-	92-99	
1997	Y	Société Generale	1991-	94-97	A	Bank Austria	1991-	93-97	
1998	E	BNP-Dresdner Bank	1992-	93-99	J	Citibank	1991-	92-99	
1999	O	GE Capital Bank	1990-	92-96, 98-99	O	GE Capital Bank	1990-	92-96, 98-99	
Best-Practice Banks in the Cost Category (DFA)					Best-Practice Banks in Profit Category (DFA)				
1992	L	Credit Lyonnais Bank	1992-	92-99	B	Bank Austria Creditanstalt	1991-	92-99	
1993	E	BNP-Dresdner Bank	1992-	93-99	B	Bank Austria Creditanstalt	1991-	92-99	
1994	Y	Société Generale	1991-	94-97	P	Hypo-Bank	1992-	93-98	
1995	Y	Société Generale	1991-	94-97	P	Hypo-Bank	1992-	93-98	
1996	Y	Société Generale	1991-	94-97	P	Hypo-Bank	1992-	93-98	
1997	Y	Société Generale	1991-	94-97	P	Hypo-Bank	1992-	93-98	
1998	E	BNP-Dresdner Bank	1992-	93-99	O	GE Capital Bank	1990-	92-96, 98-99	
1999	E	BNP-Dresdner Bank	1992-	93-99	E	BNP-Dresdner Bank	1992-	93-99	

Table A6-9-3-16: Best-Practice Foreign Banks

		Cost	Profit
Y	Société Generale	7	
E	BNP-Dresdner Bank	4	2
B	Bank Austria Creditanstalt	2	3
P	Hypo-Bank		5
O	GE Capital Bank	1	2
L	Credit Lyonnais Bank	1	1
A	Bank Austria		1
AC	Zivnostenska banka		1
J	Citibank		1
M	Erste Bank Sparkasse	1	

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