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UNIVERSITY OF LJUBLJANA FACULTY OF ECONOMICS

MASTER'S THESIS

THE IMPACT OF CORPORATE GOVERNANCE ON PERFORMANCE AND RISK OF THE CZECH BANKS

Ljubljana, June 2012

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INTRODUCTION

The field of corporate governance has gained popularity in recent times in literature and in academic discussions. At the beginning of 1990s, corporate governance (CG) became more recognized and important for society. A significant increase in the importance of this area came with the Asian financial crisis in 1997, followed by the Enron and the Worldcom company scandals in the U.S. and more recently due to the global financial and economic crisis in 2007 (Kang, 2003).

One of the main reasons for these events was poor corporate governance. Nevertheless, it has been difficult to identify the main weaknesses of corporate governance in the banking sector, since government bailouts covered the true problems within banks as well as many other factors that led to bank failures. The weaknesses were seen in board composition, especially in the lack of experience of board members, in the board independency and also the roles of the audit and risk committees were seen as insufficient. In addition, corporate governance procedures failed in the area of risk management. In many cases information regarding risk exposures did not reach the management board or even senior level management. In other cases, key principles of monitoring and managing risks have been also neglected. Furthermore, accounting standards and regulatory requirements also had limitations and regulators were forced to revise them. Lastly, the compensation system within banks was not aligned with bank's long term interests, with the risk tolerance of directors or with bank's strategy (Mülbert, 2010, pp. 8-9).

Despite this, the Czech financial sector has not been hit by the financial crisis of 2007 due to several reasons. Czech banks have a relatively less-developed mortgage market; in the 1990s the banking system was largely freed of bad assets and Czech banks are also not members of the global financial groups, which have been affected the most by the crisis. The Czech banking sector mainly generates profit from dynamically expanding retail banking activities, while due to the high percentage of foreign ownership of Czech banks, the management of derivatives and securities portfolios is mainly concentrated in their branches in the international financial centers. The most important are high levels of balance sheet liquidity, meaning high levels of deposits and therefore minimum dependence on funds from the foreign markets. Nevertheless, the primary potential danger for the Czech financial sector could be the dominance of foreign ownership of the banks. Therefore, there is a need for strict regulatory requirements for managing the liquidity of local credit institutions, regulatory rules to aim to prevent excessive liquidity transfers and ensuring an alignment of banks' corporate governance policies and procedures to the regulations set by the law (Holman, 2010).

The mechanisms of corporate governance in the Czech Republic were laid down at the beginning of the nineties. The evolution of corporate governance came together with the privatization waves in the Czech Republic in the nineties. The aim of the economic transformation was the transition from centrally-oriented to market-oriented mechanisms and the creation of economic conditions for the market to function. The aim was to create a system with individual owners and to set up an effective system of corporate governance. The model of corporate governance in the Czech Republic has evolved from the control of large corporations with three bodies: general a, management board and supervisory board. It is true that Czech corporate governance policies still lags behind the corporate governance policies of more developed countries, however since the transformation period it has improved significantly (Ruckova, 2008, pp. 25-35).

Many organizations and institutions around the world have been reinforcing corporate governance practices. One of the institutions, which constantly improves and strengthens corporate governance practices for banking organizations is The Basel Committee on Banking. The Committee published its first guidelines in 1999, followed by revised principles in 2006. Then, in 2010 they published the Principles for enhancing corporate governance. The Committee believes, that the key areas to focus on are: (1) Board practices—the management board should actively carry out their responsibilities and provide effective oversight of senior management; (2) Senior management—should ensure that bank activities are aligned with bank strategy, policies and risk tolerance; (3) Risk management and internal controls-companies should establish a risk management function with sufficient authority and independence; (4) Compensation-the compensation should be aligned to all types of risks and should be linked to risk outcomes; (5) Complex corporate structures-management board should guide the senior management and fully understand its corporate structure, including special risks, that such structures may pose; and (6) Disclosure and transparency-this will reinforce the implementation of good corporate governance (BIS, 2010, pp. 7-29). This paper examines the application of some of these principles in the Czech banking sector. The analysis of this paper is driven by these principles and concentrates on the corporate governance of banks in the Czech Republic and its influence on the overall performance and risk management of banks.

The corporate governance policies of a firm are considered to be one of the most important factors influencing the performance of the firm. This is especially important in the banking sector, where banks have a specific role in the economic system as they facilitate capital allocation and risk management of businesses.

Despite the large interest in corporate governance of banks on the global scale, there is little research on how corporate governance affects the performance of banks in the Czech Republic. Hence, the **purpose of this master's thesis** is to investigate the relationship between corporate governance on bank performance as well as on bank riskiness in the Czech Republic's listed

banks. The reason for examining the corporate governance of the Czech banks is in their decent performance during the financial crisis of 2007. The position of the Czech banking sector remained strong and therefore did not require any financial support from the Central Bank nor from the government during the financial crisis. The explanation for this strong position is in the high ratio of deposits over loans, also in the low share of unpaid loans and the fact that Czech banks are not members of the global financial groups (Holman, 2010). Another reason could be based on the respectable effectiveness of the corporate governance policies of the Czech banks.

Therefore, there are two objectives of the master's thesis. First, the paper shows how banks in the Czech Republic use their corporate governance policies to support their performance and second it identifies, which corporate governance mechanisms affect their risk.

This master's thesis is divided into 9 sections. Section (1) defines corporate governance in the banking sector. In section (2) and (3) the Czech banking sector and the situation in the Czech economy is presented. Section (4) describes the overall picture of corporate governance in the Czech Republic, including the applicable legislative provisions. Section (5) focuses on the current issues of corporate governance in the banking industry worldwide. Furthermore, section (6) highlights the impact of CG variables on bank's performance and riskiness by presenting the related literature. In addition, this section also provides the developed hypotheses. Section (7) explains the methodology, which includes variable measurements and the research method used for the analysis. In section (8) the paper contains a discussion of the results of the analysis and lastly section (9) summarizes the findings and concludes on the conducted research.

1 CORPORATE GOVERNANCE IN BANKS

This section of the paper outlines the issue of corporate governance in the banking industry. At the beginning the general description of the term "corporate governance" is described; and followed by the first appearance and use of corporate governance in the banking industry.

Based on the studied literature, the general definition of corporate governance has not been clearly formulated. However, one of the recurring concepts contains a description of corporate governance as "every device, institution or mechanism that exercises power over the decision-making within a firm" (Mülbert, 2010, p. 4). In other words, corporate governance deals with decision-making at management board level and at director level. It is also linked with various types of external and internal mechanisms in order to ensure that the decisions made by the directors and the management board are in compliance with the objectives of a company and its shareholders.

The OECD Principles of Corporate Governance contain a broader definition: "Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined." The paper also states that good corporate governance should contain: "incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders, and should facilitate effective monitoring" (OECD, 2004).

Another broader definition describes corporate governance as including standards for decisionmaking inside a company, internal structure, responsibilities of officers and board members and relationship between the company and its shareholders. Meaning that corporate governance deals with significant management issues and related decision-making by the management, for example setting up a risk management system and an independent compliance function (Grundmann & Mülbert, 2000).

From the banking perspective, the Basel Committee on Banking states that corporate governance is a style in which the business and activities of banks are governed by the board of directors and the senior management, which affects how they (BIS, 2010, pp. 4-5):

- set corporate objectives;
- operate the bank's business;
- meet their duties to its shareholders;
- provide for the alignment of corporate activities, that banks will operate in a safe manner with compliance of laws and regulations; and
- protect interests of depositors.

Why is corporate governance important in the banking industry? The importance can be seen from the factors that differentiate banks from other businesses. The first factor is the bank's liquidity producing function, meaning that the existence of banks is dependent on the liquidity it obtains from depositors, the short-term interbank market, financing markets or funding from central banks. During the financial crisis, the availability of liquidity was limited and therefore central banks had to intervene. This raised a concern for regulators: that the regulation liquidity risk was not prudent enough (BIS, 2008, pp. 1-2).

Secondly, since banks are highly leveraged institutions, there is a need for a regulation in the form of minimum capital requirements (Mülbert, 2010, p. 10). The third factor is that banks' balance sheets are less transparent than those of other businesses. For instance, bank loans are harder to observe than other businesses' physical assets such as machinery and plants (Mullineux, 2006).

Fourthly, banks are very much interconnected with other banks, since a major part of their business is done among themselves. The difference as compared to some other industries is that problems at one bank can spread to other banks very quickly and cause significant damage on a national as well as on a global level. Finally, the banking industry is highly regulated and supervised compared to some industries (Mülbert, 2010, pp. 11-12).

The first real public interest in the corporate governance arrangements of banks started after the Asian crisis in 1997. Nevertheless, there had already been some research in corporate governance before that financial crisis through empirical studies and theoretical works. Subsequent to the Asian crisis, listed and non-listed companies worldwide started to emphasize the importance of corporate governance for companies and in some instances establishing individual corporate governance codes (Mülbert, 2010, p. 5). Specifically, the Basel Committee on Banking Supervision published in 1999 a series of guidelines under the name: Enhancing corporate governance for banking organizations. These guidelines were inspired by the OECD Principles of Corporate Governance of 2004 and they were later revised and published (BIS, 1999). The Swiss and Italian national supervisors also published principles for corporate governance structures and features required to be implemented by banks. Namely it was the Swiss Financial Market Supervisory Authority (FINMA) and the Banca d'Italia. From the international perspective, the World Bank Group, as a result of the Asian crisis, has taken corporate governance more seriously. They took the Basel Committee's guidelines and created corporate governance methodology to assess the legal and regulatory frameworks for banks' corporate governance on a country level (Mülbert, 2010, p. 6). On the other hand, the International Finance Corporation (IFC) concentrates on the basis of corporate governance of individual financial institutions (IFC, 2007).

When the financial crisis in 2007 began to develop, the issue of bank's corporate governance was set aside for some time with the exception of matters concerning remuneration of executives. As described above, the Banca d'Italia published guidelines relating to this in 2008 (Mülbert, 2010, p. 7). The Swiss bank UBS improved its corporate governance structures by separating the roles and responsibilities of the executive management and the board of directors. Furthermore they have put in place additional oversight over the board using their committees (Investor releases, 2008). Although a large number of reports were published in 2008 studying the causes and outcomes of the financial crisis, somewhat surprisingly, the adequacy of corporate governance of banks was not been mentioned in some of the reports. For example, the reports from US President's Working Group on Financial Markets or from the Financial Stability Board (formerly known as FSF) did not mention this (Mülbert, 2010, pp. 7-8).

On the other hand, the remuneration practices by banks attracted much of the research interest around this time. Even without hard evidence, the short-term oriented remuneration structures and imprudent behavior of managers were seen as a major cause of the financial crisis. This resulted in proposals for reform in this area on the international as well as national level. The section 5 on Corporate Governance Issues goes more into detail regarding these causes of the crisis (Mülbert, 2010, p. 8).

During the later stage of the financial crisis, the issue of corporate governance started to draw attention, starting with the OECD Steering Group on Corporate Governance. This group on corporate governance published a study, where they concentrate on four areas of corporate governance: risk management, remuneration, board practices and shareholder rights (Kirkpatrick, 2009). Based on this study the OECD published a full report in 2009 with key results from the outside and the inside of the banking industry - *Corporate Governance and the Financial Crisis: Key Findings and Main Messages*. One of the major messages was that there is no prompt need for the revision of the OECD Principles, but more effective implementation of its standards. As a consequence of the change in perception on corporate governance, many empirical studies and theoretical works have been published (OECD, 2009).

2 THE CZECH BANKING SYSTEM

This section discusses the banking system in the Czech Republic. The following topics are covered: (1) provides a brief historic overview of Czech banking; (2) introduces the Czech National Bank; (3) the structure of the Czech banking system is presented and lastly (4), (5) and (6) describes the situation during the crisis, after the crisis and in 2011 in the Czech banking sector.

2.1 Evolution of the Czech banking system

The first banks were established at the beginning of the 19th century. The initiative was made by the Czech aristocracy in Prague by founding the Czech Savings Bank in 1824 and in 1847 the Prague branch of the Austrian National Bank began to operate. Due to the liberal demands for establishment of new banks, many new banks were set up. However, some of them soon suffered from their imprudent behavior. The banking sector was affected by the market crash in 1873, which also impacted on the Vienna Stock Exchange. The close connections with the Habsburg monarchy also affected Prague's money and capital markets. In the years 1873-1883 only 6 banks were established, while 99 went bankrupt. In general the early development of the Czech banking sector in comparison with other European countries was delayed due to many reasons (Poloucek, 2006, p. 46).

At the beginning of the 20th century the Czech banking was developing relatively successfully. Despite the fact that some banks were in trouble, the stability of the banking system was not threatened. A similar situation occurred during the First World War. Further formation of the banking sector was significantly influenced by the establishment of the Czechoslovak Republic in 1918. The new state had to also urgently address its financial problems. A major change was the establishment of the central bank. The Czechoslovak National Bank began its operations in April 1926. It was a limited company with the nature of a public institution and it received a 15-year exclusive right to issue banknotes in Czechoslovakia (Poloucek, 2006, pp. 46-48).

During the German occupation, the number of banks decreased substantially. The share capital of most Czech banks was transferred to the German owners and where it was not possible a violent removal was carried out. Also many small financial institutions had to stop their activities. This tendency to reduce the number of banking institutions continued even after 1945, with many banks and private equity insurances being nationalized by presidential decrees (Poloucek, 2006, p. 50).

Until 1990 there was just strict specialization on each individual bank in the Czechoslovakia. However in January 1990 two laws came in to force: Law number 130/1989 Coll. about the National bank of Czechoslovakia and Law number 158/1989 Coll. on banks and saving banks. These two laws formed the two essential features for the functioning banking system--the dual banking system (Poloucek, 2006, p. 50).

In 1990, Czechoslovakia had 5 banks, but at the end of 1991 the number was already 24. The number of banks increased rapidly until the end of 1993, and then stagnated for several years. At the end of 2005 the Czech Republic had 36 banks and branches of foreign banks. Currently, in order to establish a bank in the Czech Republic there is a need for an authorization from the Czech National Bank. According to the law number 21/1992 Coll. about banks, bank can be established by a legal entity based in the Czech Republic. According to CNB, a bank is required to deposit on the account of CNB capital amounting to at least 500 milion CZK in order to establish a bank (Poloucek, 2006, pp. 50-52).

2.2 The Czech National Bank

The Czech national bank is located in Prague and is the supervisor of the financial markets in the Czech Republic. Its establishment is under the Constitution of the Czech Republic and works in compliance with Law number 6/1993 Coll. The CNB, and other regulations. According to the Article 98 of the Constitution the primary objective of the CNB is to maintain price stability. The Central bank's independence is a precondition for effective monetary policies in order to maintain price stability.

In addition to its primary objective, the CNB also issues banknotes and coins, governs the circulation of currency, supports the general economic policies of the Government and last but not least is the supervisor of the banking sector, the capital markets, the insurance industry, electronic money institutions, and credit unions as well as of the foreign exchange markets. As a central bank it maintains accounts connected to the state budget and provides banking services to the state and the public sector (CNB, 2011; Law CNB, 2011).

2.3 Structure of the banking sector

At the end of 2010 the Czech banking sector consisted of 41 banks and branches of foreign banks. The structure of the Czech banking sector has been stable for a long period. These were 17 banks (four large, four medium and nine small banks), 5 building and loan associations and 19 branches of foreign banks, which can be seen in more detail in Table 1. This structure remained the same in 2011 without any major changes. The main part of the domestic banking sector is formed by the group of four large banks (Komercni Banka, Ceskoslovenska obchodni banka, Ceska Sporitelna and Unicredit Bank Czech Republic), which share of the total assets of the banking sector in 2010 amounted to almost 58% in aggregate (see also Table 2). The Czech banking sector is part of the EU's single capital market since the Czech Republic joined the EU. This enabled other financial institutions to operate within the Czech Republic and across the other EU countries due to the uniform licensing. In 2010 about 295 banks from the EU could provide their services with only the condition of notifying CNB through their national regulators. They can provide their services without establishing a branch according to the directive of the European parliament and the European Council 2006/48/ES. Six banks with headquarters based in the Czech Republic operate within the EU according to the uniform license. They operate in Slovakia, Greece, France and Austria and the banks are Komercni bank, GE Money Bank, PPF banka, LBBW Banka, Ceska Exportni Banka, Ceska sporitelna and at the end of 2010 J&T Banka and Fio Banka also established branch in Slovakia (CNB, 2010, pp. 55-57).

Year	2008	2009	2010
Sum	37	39	41
Banks	16	16	17
Branches of for. banks	16	18	19
Building and loan association	5	5	5

Table 1. Number of banks

Source: (2010) Czech National Bank.

Year	2008	2009	2010
Sum	100	100	100
Large banks	57.5	57.7	58.0
Medium banks	12.2	13.6	13.1
Small banks	5.3	5.5	6.4
Branches of for. banks	14.1	12.1	11.4
Building and loan association	10.8	11.2	11.2

Table 2. Share of individual types of banks

Source: (2010) Czech National Bank.

The ownership structure of the Czech banking sector has been also stable over a long period. At the end of 2010 the share of foreign capital in banks was 79.2%. It predominates in 14 banks and 9 out of them are entirely foreign owned. More explanation is provided in Table 3. On the other hand shareholders from the Czech Republic predominate in other 8 banks, where 6 banks have solely Czech capital (Hypotecni banka, Fio Banka, J&T Banka, Modra pyramida stavebni sporitelna, Ceskomoravska zarucni a rozvojova banka and Ceska Exportni Banka). The foreign capital mainly comes from the owners based in the EU, with a share of 93.3%. The four largest banks in the Czech Republic have their owner from the EU country. In terms of owners from the individual EU countries the ownership structure remains diversified (CNB, 2010, pp. 55-57).

	Domestic	Foreign
Sum	20.8	79.2
Medium banks	50.5	49.5
Small banks	49.0	51.0
Building and loan association	47.9	52.1

Table 3. Origin of the capital

Source: (2010) Czech National Bank.

2.4 Banking sector during the financial crisis

The Czech banking sector, which is the most important in the entire financial system, remained stable during the financial crisis of 2007. Unlike many other countries, the Czech banking sector did not need any financial support from the government nor from the central bank. The financial crisis in 2007 did not directly affect the Czech Republic; however there were some negative consequences, including: a rapid decline of Czech exports and a significant decrease in the inflow of foreign capital. The response to these negative impacts was the depreciation of the Czech Crown proved that the beginning of 2009. Later, the trends of appreciation of the Czech Crown proved that the Czech economy did quite well during the financial crisis (Holman, 2010).

Furthermore, traditionally the Czech banking sector has a high capital adequacy and a high deposit to loan ratio. During the crisis the capital adequacy ratio was not threatened, with no domestic bank reporting a capital adequacy ratio below 10%. The high deposit to loan ratio provided banks with liquidity during the crisis to meet the loan demands in the private sector. The sector also maintained high profitability in 2009 (net profit was CZK 60.3 billion, up by CZK 14.5 billion compared to the previous year) due to very low share of risky investments in securitized instruments and bad assets (Holman, 2010).

Low foreign currency debt is another reason that contributed to the stability of the financial sector. The Czech Republic had an 8.8% share of foreign currency loans as a percentage of total loans at the end of 2009 (Profit Finance, 2010).

The financial crisis and, as a consequence losses of foreign banks, gave concerns that Czech subsidiaries owned by foreign banks would have to transfer some liquidity to their parent banks.

These concerns were minimized by the effective regulation of CNB, which is traditionally focused on control mechanisms as well as risk management. These characteristics gave the Czech banking system an advantage over Central European countries as well as other EU countries (Holman, 2010).

2.5 Banking sector after the crisis

The economic downturn which affected the Czech economy in 2009 was the biggest in the country's history (real GDP dropped by 4.7%), (CIA, 2012). However, 2010 brought a surprising turnaround; the growth of real GDP amounted to 2.3 %. The main reason behind this turnaround was similar to the 2009 downturn--developments outside of the Czech economy. Primarily, it was in countries where the Czech Republic has its main business partners located. Moreover, also the German economy played a fundamental role in the turnaround process. This resulted in increasing demand for Czech exports. The risk of being partly dependent on economies in which main business partners are is at the moment stabilized. In particular, the German economy experienced GDP growth of 3 % in 2011. Still, the Czech economy could face problems in the rising fiscal policy issues in the EU, USA and Japan which may last for some time. As mentioned above, despite the economic downturn, the Czech financial system and especially the banking sector, remained stable. The change was in the economic environment; the economy went from quick and partially investment-driven economic growth to a fall in investment and demand. This entirely changed the conditions for the banking sector. The fact that the Czech financial system had a good starting position and there was a fast broadening of monetary policy reduced the risk of inadequate restrictions on access to loans (CBA, 2011, pp. 13-14).

In addition, other industries could hit the bottom of the downturn later than the "average economy". It does not necessary mean that an industry or company is consolidated. This could be, for example, the construction or the service industry. These factors and the possible slow recovery on the job market, could result in a low demand for loans from natural persons and as a consequence create hard conditions for banks to return back to pre-crisis levels of growth. The last important aspect which is influencing the banking sector is the banking regulations known as Basel III. The situations in the Czech banking sector on these restrictions will be substantially lower due to the conservative structure of banks and also due to levels of capital endowment (CBA, 2011, p.14).

2.6 The Banking sector in 2011

After years of stagnation the number of banks in the Czech market has increased. In June 2011 the sector reported 44 banks compared to 2010 where the number was 41, of which 21 operate as

branches of foreign banks. At the end of March 2011 the total volume of assets managed by the banks reached CZK 4 247 billion, which is a growth of 3.4% compared to the last year. At the end of June 2011 banks had a total of CZK 2 211.5 billion client lending on their balance sheets, which is a yearly growth of 4.3% (Lending in the Czech Republic, 2011). On the same date, the reported client deposits were CZK 2 815.5, that is a growth of 1.86%. This number actually indicates that Czech clients have trust in the banking sector even at significant turbulences on the global market. The high volume of deposits is strongly above the European average; with a significant ratio of loans to deposits at 78.5%, which reduces the system dependence on the interbank market or on any liquidity-providing repo-operations on the part of the CNB. Furthermore, the liquidity position remains high: the ratio of liquidity-providing repo-operational assets to total assets increased at the end of March 2011 to 28.8%. Due to the recovery of the economy, in June 2011 the annual growth of the volume of total bank loans was 4.3% (CBA, 2011, p. 14).

After the significant fall in demand for lending during the recession the volume has again started to grow since mid 2010 with a yearly growth of 5.2%. Nevertheless, companies are still careful about greater investments; the percentage of provided loans exceeding CZK 30 million was 7.4% lower in the first half of 2011 compared to first half of 2010. Loans provided to companies were 36% of all banks' loans. The real growth in lending to the population is driven by long-term home loans, although the overall growth slowed down to 6.3% in June 2011 compared to 8% in June 2010. The loans provided to the population were 44% of all bank loans. In the second half of 2010 the banks' quality of loan portfolio was improving. The percentage of loans in default was 9.05% in September 2010 and fell to 8.45% at the end of June 2010. The situation in households is also stabilizing with the percentage of loans in default of 5.2% (CBA, 2011, p. 16).

In the middle of 2010 the long-term interest rate in the Economic and Monetary Union (EMU) (ten-year swap rate) grew at a minimum at about 2.5% but in the first quarter of 2011 it was 3.7%. The long-term money market rate (3M-PRIBOR) remains stable at 1.2% and 3M-EURIBOR continued to raise from 0.85% in 2010 to 1.5% in the middle of 2011 (CNB Prognosis, 2011).

In comparison with Western European banking systems, the Czech banks have a high capital adequacy ratio. In March 2011 it was 15.6% compared to 14.3% in March 2010 and according to the Basel III regulation they fulfill the requirements (CTK, 2012).

Moreover, the majority of bank's capital is composed of high-quality Tier 1 capital. The capital adequacy of Tier 1 was 14.1% at the end of March 2011 with its volume growing year-on-year by CZK 23 billion to CZK 266 billion (CBA, 2011, p. 17).

Moreover, the stability of the banking sector continues to support by the ability of banks to maintain profitability at a time of increased risk expenditure. The annual rate of return of average assets was at March 2010 at 0.34% and jumped to 1.40% in 2011 (CSAS, 2011), with an average of 0.5% in most of the Eurozone countries. The following Figure 1 shows the shares of banking groups in terms of total assets in 2010 (CBA, 2011, pp. 17-18).



Figure 1. Shares of banking groups (by size) in terms of total assets in 2010

Source: 2011 Czech Bank Association

More recently, the banking sector was subject to a series of extreme stress tests conducted by CNB. These tests simulated an extensive economic downturn. The results were positive and confirm the stability and durability of the Czech banking system (CBA, 2011, p. 18).

3 THE CZECH ECONOMY

In this section of the paper, the current economic situation in the Czech Republic is presented. Banks play an important role in the economy of the country. The situation of the economy is closely related to the banking system. Since banks are borrowing, lending and offering other related activities; this facilitates the process of production, distribution and consumption of wealth and therefore banks are very effective partners in the economic development of the country.

The year 2010 saw an improvement to the global economy. The global economic growth (GDP) was positive with 4.9%, but there were regional differences. For instance the slower growth of the European and American economies were compensated by the fast growth of Latin American and Asian countries. The Czech economy experienced a positive growth of 2.3% mainly due to the close relationship with the German economy, which had a fairly high positive economic growth of 3.5% (CIA, 2010).

The Czech recovery was primarily driven by restocking of inventories and by exports. Furthermore, there were positive developments in the local financial market, low interest rates set by the CNB, the government's determination to reinforce the public finances and the reduced exchange rate volatility also had a positive influence. According to the CNB, the economic forecast in the first quarter of 2012 is expected to slightly increase by 2.6%. However, the recovery has been slowed by the fiscal problems in certain EU countries (CBA, 2011, pp. 9-10).

During 2010 many businesses had capacity to increase production, but the overall motivation for new investments was rather low. Therefore, expenditure for the formation of gross fixed capital fell by 3.1% (Czech Statistical Office, 2010). The Czech Bank Association forecasts acceleration in investments up to 4.5% in 2012. On the other hand, in connection with the situation on the job market, household consumption increased only by 0.3% and the forecast for 2012 is no better with a 0.4% increase. At the end of 2010 government expenditure fell by 1.8% due to the austerity measures (CNB, 2012). After the economic downturn in 2009, foreign trade experienced a major improvement. Exports and imports each grew by 18% in 2010. In the first quarter of 2011 the trend continued with imports growing by 13.2% and exports by 15.6% (CBA, 2011, pp. 12-13).

The economic recovery did not have much effect on unemployment in 2010; it continued to fall by 1% (Evolution unemployment, 2012). In 2011 numbers became positive again, with a growth by 0.9%. The actual unemployment rate is 6.8% and it is forecasted by the CBA at the end of 2012 to be 6.7%.

The inflation rate was 1.5% in 2010 and in 2011 it reached 2.5% (Czech Statistical Office, 2012). The inflation forecast for 2012 is 2.9%. In 2010 the Czech Crown experienced a significant decrease in the exchange rate volatility. The fluctuations are expected to occur, because of the turbulence in the Eurozone, but less in scope and with prediction for slight appreciation in recent months. The average annual exchange rate is expected to reach CZK 23.70 to 1 Euro in 2012 (CBA, 2011, p. 13).

The Czech economy has been coping with the financial crisis well. This is mainly due to substantially lower indebtedness and the reform program on austerity announced by the government.

Nevertheless the deficit level needs to be decreased, thus certain expenditure cuts were made by the Finance Minister and the CBA expects a decrease in the government deficit to 3.6% of GDP in 2012, which according to Maastricht convergence criteria is still above the target (3%), although it is improving (CBA, 2011, 8-13).

4 CORPORATE GOVERNANCE IN THE CZECH REPUBLIC

This section presents the legal framework of corporate governance in banks in the Czech Republic, describing the banking standards using The Banking Act, The National Bank Act, Auditing Act, the Commercial Code and the OECD Principles of Corporate Governance.

The principles of corporate governance in the Czech Republic were laid down at the beginning of 1990s. The evolution of corporate governance in the Czech Republic came together with the privatization waves in the 1990s. The main task of the economic transformation was the transition from the centrally to market oriented mechanisms and creating economic conditions for the functioning of the market. The aim was to create a system of individual owners who could effectively manage the company and set up generally an effective system of corporate governance. The model of corporate governance in the Czech Republic has evolved from the control of large corporations with three different bodies. These bodies are general assembly, management board and supervisory board. It is perhaps true that the Czech corporate governance still lags behind the corporate governance of more developed countries, but since the transformation it has improved significantly. For instance, there exists a code of corporate governance which is according to OECD principles (2001) (OECD, 2001; Ruckova, 2008, pp.10-42).

4.1 General assembly

According to the Commercial Code (2011), Law no. 513/1991 Coll., § 168-187, the general meeting is the supreme body of the listed companies in the Czech Republic. The general assembly appoints and dismisses members of the management board as well as members of the supervisory board, unless the statutes state that management board members are appointed and dismissed by the supervisory board. A Shareholders' Meeting is to be held at least once a year. More specifically, the regularity of the meetings is prescribed in the statutes. Shareholder meetings are convened by the management board of the listed company. The meeting is held only when the nominal value of the shares of shareholders exceeds 30% of the capital stock.

The matters considered at a general meeting include:

- decision-making to amend the statutes;
- decision-making to increase or decrease the basic capital;
- appointment and dismissal of the management and supervisory board members;
- decision-making on the remuneration of management board, supervisory board and other bodies;
- approval of regular, extraordinary, or any consolidated financial statements;
- decision-making on the allocation of profits, payment of loss and determining dividends;

- decision-making on securities quotation and on their removal from market trading;
- decision-making on the dissolution of the company in liquidation, appointment and dismissal of the liquidator, decisions on the amount of his remuneration and approval of the proposal for distribution of the balance;
- decision-making on mergers, transfers of assets to a single shareholder or on conversion to a different legal entity;
- approval of the negotiations conducted in the name of the company; and
- decision-making on other issues which are included in statutes for the general meeting.

Based on the Banking Law (2012), Law no. 21/1992 Coll., § 20, the general meeting in the case of a bank cannot be held if the Czech National Bank (CNB) did not receive, at least 6 days before the meeting, a statement of all the bank's shareholders and information on the bank's issued shares. The CNB also has other rights regarding the general meeting. Namely, it can request the court to cancel the general meeting, if it is contrary to the law or statutes. Shareholders' rights are:

- the right to attend and vote at general meetings;
- the right to convene an extraordinary general meeting;
- the right to request the court to annul a general meeting.

In the case of bank receivership, the CNB board establishes a bank administrator, which is the statutory authority. The administrator convenes the general meeting and decides on the bank matters within the scope of the general meeting (Banking Law, 2012; Commercial Code, 2011).

4.2 Supervisory board

The Commercial Code (2011), Law no. 513/1991 Coll., § 197-201, contains an obligation of listed companies to appoint a supervisory board (SB) to supervise the performance of the management board and related business activities. Members of the SB shall be entitled to inspect all documents and records relating to the activities of the bank. Furthermore, they should be able to examine the records or check the compliance of bank's performance with legal requirements. The SB also has the task of reviewing the regular, extraordinary and consolidated accounts and referring their decisions to the general meeting. The number of members of the SB must be at least three. The Banking Act requires banks to create, in their organizational structure, a SB. The head of the SB board is the chairman of the SB and powers of SB members are determined by the specific statutes of each bank, with a condition that the powers of the SB cannot be simultaneously a member of the internal audit of the bank (this also applies to management board members), which according to the Banking Law (2012), Law no. 21/1992 Coll., § 19-20 a bank is required to create.

The members of the SB are also considered as persons with a special relationship to the bank, thus they cannot conclude deals on behalf of the bank, which could have certain risks to other clients.

Other persons with particular reference to banks are (Banking Law, 2012):

- members of the statutory body, bank managers and members of the management;
- persons who have control over the bank and controlling persons;
- persons with significant effects on the bank's performance and people under their control;
- corporations in which any of the aforementioned persons have any kind of involvement
- members of the CNB Board;
- related parties which may be close to the members of the management board, supervisory board and senior staff.

The definition of related parties is based on the Civil Code (2011), Law no. 40/1964 Coll., § 116: related parties are family relatives, siblings, partners or other people who may have close relationships. It is also important, that if a loan or other obligation is provided to related parties it needs to be approved by the statutory body. The potential conflict is obvious, especially for the management board members.

4.3 Management board

The management board (MB), which is, according to the Commercial Code (2011), Law no. 513/1991 Coll., § 191-195, a statutory organ of a listed company and acts on behalf of the company. It also decides on the matters of listed companies such as their business management and accounting. It has duty to submit to the general assembly regular, extraordinary and consolidated financial statements and also to report on business activities and the status of assets in the company.

The MB is chaired by the chairman of the board and management board members are elected and dismissed by the general meeting. The minimum required number of members is three. The MB members are appointed and dismissed by General assembly together with the CNB who assesses the competence, credibility and experience of persons (Banking Law, 2012, Law no. 21/1992 Coll., § 8). Furthermore, board members are responsible for the liabilities of the company up to the moment, till the potential damage is reimbursed. An important section of the Commercial Code is § 196, which prohibits certain activities for MB members:

• to operate in the same or related business;

- to arrange business opportunities of the company for other people;
- to participate in the business of another company as a partner or as a person in control;
- to operate in a statutory body or being a member in the same or related field of business.

Since the bank in some respect is seen as a listed company, it is not a surprise that the Commercial Code requires the bank to establish a statutory body. However, this obligation with respect to the special nature of banks is also stated in the Banking Law (2012), Law no. 21/1992 Coll., § 41 where we find same aspects as in the Commercial Code (at least 3 members, no competition, responsibility for liabilities). The Banking Law also includes specific requirements of a bank as a listed company (power is determined by the MB competences, credibility and experience of MB members, responsibility to inform the CNB about staff changes). Conflicts of interest in the banking system deserve more attention. The Law states that a member of MB cannot be a member of the statutory board or supervisory board of another entity (financial institution, bank, foreign bank). This also applies to employees of the bank which are not members of MB. However, these non-members have exceptions, which allow them to be a member of a statutory board in entities which are providing ancillary banking services (Banking Law, 2012). The organizational structure of Czech banks is also illustrated in Figure 2.



Figure 2. Organizational structure of banks in the Czech Republic

4.4 Corporate governance board committees

According to the Czech Law, companies are obliged to establish an audit committee (Auditors Law, 2011, Law no. 254/2000 Coll., § 44). Other types of committees are voluntary. The *OECD Principles of Corporate Governance* (2004) recommended establishing three main types of board committees: audit, remuneration and nomination. According to Kavalir (2005), board committees are not usually part of Czech companies. In his study, from 2005 only 30% of listed companies had established an audit committee. Moreover, these committees were not entirely without problems, especially in the qualifications and independence of the board members. Their members were often executive directors, which is completely against the recommendations of the Czech Code of corporate governance. In the case of compensation and nomination committees the situation was similar, with companies generally not including these committees in their corporate governance practices.

4.4.1 Audit Committee

According to the Auditors Law (2011), Law no. 254/2000 Coll., § 41-42, the audit committee should usually contain 3 to 5 members, they should be partly or completely independent and they are obliged to meet at least four times a year.

Under the OECD code, the audit committee functions are (OECD Code, 2004, p. 36):

- to oversee the functioning of the internal audit;
- to examine management's procedures;
- to examine the activities of management to ensure compliance with the standards under the regulatory system;
- to provide an interface between management and the external auditors.

According to the Auditors Law (2011), members of the Audit committee are appointed by the highest statutory organ from the members of the supervisory board or by a third party.

The Auditor's Law provides that its functions are:

- to monitor the preparation of financial statements and consolidated financial statements;
- to evaluate the internal control, internal audit and alternatively the risk management functions;
- to monitor the external audit and, if required, to provide the auditor with further information.

In addition, the CNB policy measure number 2/2004--*for internal management and control system of banks*, recommends the establishment of the audit committee.

According to the CNB policy measure, the main tasks of the audit committee should be:

- the supervision of results and objectivity of the external audit, including the cost of audit;
- the actual proposal of appointing and withdrawal of external auditors;
- oversight of the internal audit;
- assessment of all financial transactions with serious consequences for the stakeholders.

The measure also requires the internal audit to inform the audit committee of major shortcomings of the internal management and the control system. The internal audit also presents the risk analysis to the committee. In addition, the audit committee is required to discuss the plan of activities, the evaluation of the system as well as the preparation of the annual activity report (CNB policy measure no. 2, 2004).

An effective audit committee can be responsible for the company's system of internal control and also re-examine its effectiveness. This system is designed to manage rather than eliminate the risk of failure in achieving companies' objectives and also further provides reasonable and not absolute assurance against possible losses or material misstatements. The main responsibilities are in designing and monitoring the activities of the internal audit department and to harmonize activities with the management of the company and the external auditor (OECD Code, 2004, p. 36).

4.4.2 Remuneration Committee

According to Commercial Code (2011), Law no. 513/1991 Coll., § 16 the remuneration committee should usually contain three to five members. The majority of members should be independent and non-executive directors, this means that they should be independent from the managers. They should also have no personal interest in decisions made by the committee. Meetings are held according to current needs, but should be held at least once a year. Its main task is to independently influence the rewards of managers; the committee defines procedures relating to the remuneration of executives and it maintains their motivation. According to the OECD Code (2004, p. 38), the main functions are:

- to attract, retain and motivate directors, respectively board members and top management;
- to carefully consider the elements of performance-based salaries of managers, special allowances, bonuses etc.;

• to pay particular attention to certain principles - remuneration should be considered with regard to shareholders, the amount of compensation should be proportional to the performance.

In the same manner as applies to the audit committee, the remuneration committee creates a report which is published in the annual report of the company.

4.4.3 Nomination Committee

The purpose of the nomination committee is to ensure that the Board structure has a broad range of experience, skills and education relevant to the business. Its three main functions are:

- evaluating the skills necessary for the efficient functioning of a business;
- establishing and disclosing applicable criteria for its candidates;
- selection of candidates (OECD Code, 2004, p. 39).

4.5 External Audit in Banks

External audit in banks is a legal provision specified by the CNB policy measure no. 11 (2002)--Laying down the requirements for corporate governance of banks, including the risk management system, is considered as the main legal provision in this area. These measures build on the already mentioned Banking Law (2012) where management and control system, including risk management are specified as a system in terms of corporate governance. The main risks are regarded as credit, market, liquidity and operational. Furthermore, the measure discusses the fact that it is possible to have more than one audit of a bank's financial statements and audit of the management and the control system. Audit means the verification of systems and their effectiveness and an evaluation of the results with recognized principles used in banks. The procedure of external auditing a company is as follows:

- evaluation of the effectiveness and the efficiency of the control mechanisms;
- specification of the lack of control mechanisms;
- preparation of a statement of the past and current risks arising from deficiencies;
- evaluation of the effectiveness and the efficiency of the system as a whole and impact assessment of the identified shortcomings on the liquidity of the bank as well as the creation and distribution of the profit.

The policy measure of CNB no. 11, is not the only regulation which refers to performance of an external audit of banks. The requirement for an external audit is also contained in the code of corporate governance based on the OECD Principles, 2004, which discusses the responsibilities of

auditors to shareholders and the need for a professional approach. External audit is also subject to the Bank for International Settlements (BIS) study number 87: *The Relationship between banking supervisors and banks' external auditors*, from January 2002. It highlights the importance of external audit and its fundamental value not only to shareholders but also to the supervisory institutions. A key function is also to increase the credibility and transparency of banks.

An external auditor in this document is seen as the person responsible for assessing the objectivity of the financial statements of banks and minimizing the risk of possible fraud with indicators of the financial statements. The study further presents the obligations of the external audit, areas of interest and procedures which are generally the same as in CNB policy measures (BIS, 2002, pp. 4-12; CNB policy measure no. 11, 2002).

Principles and procedures for the audit firms themselves are defined by the Auditors Law (2011). This Law regulates operations of the chamber of auditors in the Czech Republic, which is a selfgoverning professional organization established to regulate the auditing profession. It regulates the activities of auditors, audit firms, assistant auditors and the conditions under which auditing services can be provided. The Auditors Act primarily emphasizes the independence of the auditor, who must follow the legislation, guidelines and the professional auditing rules issued by the chamber. If the auditor is performing an audit on behalf of the firm, any interference from the shareholders or associates who are not auditors is prohibited. External auditors auditing the bank are obliged to inform the authority, in this case the CNB, if they discover facts that: suggest a violation of law, have a negative impact on the economic management and facts that may threaten the principle of "going concern". Conversely, the auditor must keep confidential all the facts relating to the entity which he learned about during the implementation of the audit. To the confidentiality principle are also committed employees, partners, shareholders and board members of audit companies. The obligation continues even after the removal from the list of auditors or the list of audit firms. For the auditors shall also apply the above mentioned non-competition rules, that define under which certain circumstances auditing is prohibited. An audit company must not provide an audit if (Auditors Law, 2011):

- it is a partner with the audited entity;
- it keeps accounts of the entity and prepares financial statements or prepares tax returns;
- it holds for the last five years provisions for audit services from the entity above 50% of their total income over the same period;
- it is its administrator or liquidator.

4.6 Internal Audit in Banks

According to the CNB policy measure no. 2 (2004)--*for internal management and control system of banks*, the internal audit "is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations".

It brings a disciplined approach to the evaluation of the effectiveness of risk management, control processes and corporate governance policies of the bank. Internal audit is part of a bank's SB and is established by the MB of the bank, which approves its status and scope of activities, including strategic and periodic planning. Weaknesses revealed by internal audit must be notified to relevant levels of management and a solution without a delay needs to be designed, which needs to be later approved.

Further, this policy measure defines the status, planning, execution, measures to improve the quality of activities and also cooperation with the external audit. The internal audit evaluates the quality of the external auditor's work. Mainly it characterizes:

- the position of the internal audit;
- the responsibilities and its powers;
- the line of business;
- the process of planning;
- the method of presenting the results from its activities;
- the method of executing corrections.

The core activity in the planning process is risk analysis, which is carried out at least once a year and subsequently there is allocation of powers according to the level of risk associated with different activities of the bank. The result of planning is a strategic and a periodic plan. After each internal audit is carried out a report needs to be made. It includes objectives, subject, the scope of the internal audit and also proposals for corrections. It is also important to have the auditor's opinion on the degree of risk in the activities carried out by internal audit along with risks, which are included in activities that do not consider the establishment of control mechanisms. Improving the quality of internal audit is included in the program, which includes all aspects of the audit and continuously monitors its effectiveness. The activities of the audit are also examined every five years by the independent external evaluator. Internal audit activities are also covered in BIS paper number 92 from 2002: *Internal Audit in Banks and the Supervisor's Relationship with Auditors*, which also the CNB is referring to. It characterizes the goals and tasks of the internal audit, as well as its principles, functions and relations with the supervisory institutions and external auditors. It emphasizes, that a "healthy" internal audit is an inevitable part of a bank's corporate governance. The scope of the internal audit is truly extensive; it includes examination of the internal control systems, the bank's processes of risk management, the control of financial reporting and observation of the regulatory requirements (BIS Survey, 2002, pp. 2-9). In addition the main principles are:

- the principle of continuity; this means continuous and permanent implementation of the internal audit;
- the principle of independence, objectivity and impartiality, which mean free reporting of discovered results without any interference from the management;
- the principle of professional competence; that means constant external and internal training as well as job rotation.

It is worth mentioning the various types of internal audits used in banks. The audit types are: financial audit, compliance audit, operational audit and management audit. The first three types of audit are used more frequently. The BIS paper number 92 also discusses the possibility of outsourcing the internal audit, which is only outsourcing of the audit services not outsourcing audit responsibility. However, this is not common in all countries and when it does occur, it is limited to the provider that is part of a group to which the bank belongs.

Internal audit is constantly evolving. The main trends that have been reported are strengthening of the audit, risk oriented audits and assessment of internal models (BIS Survey, 2002).

4.7 Czech Code of Corporate Governance

The Czech Republic has been a member of the OECD since 1995. Therefore, when forming the first code of Corporate Governance in the Czech Republic in 2001 it was based on the OECD Principles of Corporate Governance issued in 1999. After the OECD Principles were updated in 2004, the Czech code was also accordingly updated and the new code of Corporate Governance 2004 was published. The Commission on Securities, as well as many representatives of institutions operating in the capital market, participated in the creation of this code. Many of the points mentioned in this code correspond with the regulations contained in the Commercial Code. However, the text has various suggestions that are not included in the law; therefore they can be implemented by companies on a voluntary basis. The code is based on the OECD Principles; the first six chapters are the principles which are the same for each country. The only difference is that at end of each principle a commentary is given. The code contains four annexes. In the first annex we can find the evaluation from the World Bank and from the International Monetary Fund on the compliance of OECD Principles from 2002. The second annex consists of committees for the corporate governance, which are established by the management. These are audit, nomination and compensation committees. The third annex is linked to the practices of the management board

and the supervisory board. The last annex presents the principles of business code of ethics (OECD Code, 2004, pp. 3-7).

4.8 Code of Ethics of the Czech Bank Association

In general, the Code of Ethics of the Czech Bank Association is not different from the other banking codes and 17 out of 41 banks in the Czech Republic are currently following this code. It is divided into four parts:

- the general principles of banks' behavior;
- the relations of employees to the bank in which they are employed;
- employees' relations to the clients;
- bank relationships between each other.

General principles of bank's behaviour state that it is essential to respect the confidentiality on bank's financial affairs, prudent behavior to suspicious deposits or clients. Furthermore, keeping the same rules and conditions for all market participants and truthful marketing activities as well as acquisitions. It is also stated, that bank employees need to perform their activities in the best interests of the bank and further deepen their professional and foreign language skills. Moreover, avoiding conflicts which may harm bank's reputation, not abusing internal information, maintaining secrecy and not taking any kind of bribery. Lastly be respectful, fair and impartial to staff and clients. The code also has a part relating to the ethical behavior to a bank's competitors (CBA, 2007, pp. 1-3; CBA, 2011, p.52).

4.9 Institutions on Corporate Governance in the Czech Republic

During the last five years the Czech society has created number of civil associations, whose members enforce the code of corporate governance. For instance, the Czech Institute of Directors puts together members of management boards and supervisory boards of leading Czech and multinational companies. It is also necessary to highlight the work of the Czech Institute of Corporate Secretaries, which promotes the professional development of its members. Both associations also actively operate abroad. It is worth pointing out that in the area of corporate governance there are a broad-based educational programs for members of management boards, supervisory boards and for secretaries which are implemented by the consulting firm CG Partners. The training of internal auditors is conducted by the Institute of Internal Auditors. The big four audit firms are regularly conducting research of corporate governance across all business sectors. The results are usually adequate to the current situation, but what is important, that they show signals of monitoring the trends in corporate governance (Kavalir, 2005, pp. 5-16).

5 ISSUES IN CORPORATE GOVERNANCE

This section focuses on the current issues of corporate governance in the banking industry and is divided into two parts: Risk Management and Remuneration.

5.1 Risk Management

Together with remuneration, risk management is one of the most discussed issues from the financial crisis for improving the banks' corporate governance. There are many reasons which caused almost a complete failure in risk management for some banks.

The following are some examples of these reasons. Risk management practices focused more on measuring risk rather than identifying it. The areas of risk concentration were not appropriately identified below the top management of banks. The risk stress-tests were performed on past events, without identifying new types of risks and scenarios and consequently testing them (Mülbert, 2010, p. 28). Furthermore, boards were relying too much on quantitative risk models (daily value at risk and parallel techniques). As a consequence, many of the boards failed to identify major risks and failed to understand their company's risk position relative to its risk sensitivity. In particular, an important lesson from the crisis is that board members should not take false comfort from their regulatory capital ratios (Nestor Advisors, 2009). They should take a more active role in risk management, which means that board members should have adequate financial knowledge. This will enable them to better understand the tools and concepts for risk management (Senior supervisors group, 2009). It is also important that the board is presented with information on the firm's risk position in such a way that board members are able to set the firm's risk acceptance according to the current total position in relation to the goals set. There is also a strong recommendation that a stand-alone risk committee is established, which is independent from the audit committee and focuses on current and future risk exposures. The key lesson for a bank is to have comprehensive and independent risk management under the direct responsibility of a chief risk officer, who has direct access to the board or, where an audit or risk committee exists, to the applicable committee and who has authority for sound risk management as well as the necessary organizational powers (Mülbert, 2010, pp. 28-29).

5.1.1 Principles for risk management

After the meeting of G-20 leaders in November 2008, the G-20 leaders together with the Economic and Financial Committee (EFC) of the European Union stressed that regulators should develop an enhanced guidance to strengthen institutions' risk management practices.

In response, the Committee of European Banking Supervisors (CEBS) now called the European Banking Authority (EBA) carried out an analysis on risk management guidelines to assess possible improvements. As a result, the EBA has developed comprehensive guidelines on important aspects of risk management. These guidelines are known as the *High level Principles for Risk management*. They are divided into five parts: governance and risk culture; risk appetite and risk tolerance; the role of the Chief Risk Officer and risk management functions; risk models and integration of risk management areas; and new product approval policy and process. In 2011 the EBA published the Internal Governance Guidelines, which take into consideration both risk management and remuneration principles. These Guidelines should be considered by both supervisors and institutions. The EBA expects authorities to implement the Guidelines by 31st of March 2012. In the following section I emphasize some of these principles (EBA, 2011).

5.1.2 Risk culture

An institution should integrate a broad risk culture, which would enable full understanding of the risks it faces and how they are managed, taking into account its risk tolerance. This should be developed through policies, communication and training of staff regarding their responsibilities for risk. An institution should have a comprehensive management framework that extends across all of its businesses and recognizes fully the economic substance of risk exposures. The scope should not just be limited to credit, market operational and liquidity risks but should also include strategic risks. The business units under the supervision of the management board should be primarily managing risks on a day-to-day basis and should take into account institution's policies, procedures and controls as well as risk tolerance. Risks should be evaluated bottom up and top down, across business lines and through the management chain with the use of consistent terminology and methodologies of the institution. The risk management policies should also be regularly revised by an independent external or internal review, taking into account information from the risk control function (the company's central organizational feature, structured to implement risk policies and control the risk management framework) or the risk committee (EBA, 2011, p. 32).

5.1.3 Risk management framework

The risk management framework should provide policies and specific guidance for implementing the institution's strategies. They should be in line with its risk tolerance, financial strength and strategic goals. To identify and measure risks, an institution should not just look at past events but develop forward-looking tools taking into account current and future risk exposures. Forward-looking tools such as scenario analysis and stress tests should reveal potential risk exposures and past events should help to identify the actual risk profile. Furthermore, decisions should not be based only on quantitative information or model outputs, but should also use qualitative methods such as the opinion of experts and their critical analysis. It is recommended to establish a risk committee that should be responsible for advising the management body on current and future risks, risk tolerance and strategy. To strengthen the position of the risk committee it should regularly communicate with institution's risk control function and the chief risk officer. Lastly, it is also important to have regular and transparent reporting so all business units and management body are provided with concrete and actual information about the identification, assessment and monitoring of risks (EBA, 2011, p. 34).

5.2 Remuneration

Many questions have been raised about the possible causes of the financial crisis. One of the main discussed causes is the misuse of the compensation system. The vast majority of executive compensation systems before the crisis consisted of these components: fixed base salary; an annual cash bonus and long term incentive compensation such as stock options or grants of restricted stock. Under such systems, executives may benefit from increases in the company's stock price however most long term incentive compensation arrangements have been designed as a casino ("nice to have") and as a result individuals saw annual cash bonuses as the more meaningful and more motivating component of their variable pay. The narrow focus on a single year bonus encouraged individuals to abuse the system by setting easy-to-meet targets and therefore maximizing short term returns by taking risky decisions without considering the consequences for the long term returns (BCG, 2009, p. 2). The inclination to excessive risk taking and the failure of many large financial institutions has raised some concerns about the effects of pay-for-performance on risk taking. A special concern was that pay schemes were tending to cause decision-makers to take unfavorable risks. In particular, bonuses enhanced decision makers' motivation to achieve short term results, without being aware of possible risk outcomes for the long term results (Slapnicar & Hartmann, 2011). However, the moral hazard arising from executive compensation incentives was not the only cause of excessive risk taking. Another reason was the implicit government guarantee to bail out financial institutions. These incentives reinforced excessive risk taking behavior that significantly threatened the global financial system
and left banks with fewer resources for recovering their losses (Balachandran, Kogut & Harnal, 2010, p. 3).

Most of the governing bodies in financial institutions viewed compensation systems as not related to risk management. Therefore, financial regulators have now developed several remuneration guidelines intended to reduce incentives to excessive risk taking as well as a modification of compensation structures. The most important documents, which were released are FSB's *Principles for sound compensation practices* (2009), CEBS's *Guidelines on remuneration policies and practices* (2010) and *Green paper on corporate governance in financial institutions and remuneration policies* (2010) by the European Commission.

Eventually in 2010 the European Parliament adopted a proposal for an EU directive (CRD III amending directives 2006/48 and 2006/49), which will regulate remuneration practices (CEBS, 2010; FSB, 2009).

Out of the Guidelines made by CEBS came two important recommendations for the symmetry between compensation and risk outcomes. First are deferred bonuses and second are rights to claw back bonuses.

Having deferred bonuses is key for improving the risk alignment in a compensation scheme, because it allows part of the remuneration to be adjusted over time through ex-post risk adjustments. Even though remuneration is adjusted ex-ante still, ex-post risk adjustments are needed to keep incentives aligned. This is only possible with deferred bonuses. The deferral is defined by different components. First it is the time horizon, which in this case is a period that starts from the moment the upfront part of the variable remuneration is paid. The deferral period should be from three to five years. Second is the proportion which needs to be deferred. The proportion of the variable remuneration must be between 40 to 60% depending on the position of the manager. The last component is the vesting period, meaning the actual payment of the bonuses. It should not be done more frequently than on a yearly basis, since proper assessment of risk is needed for ex-post risk adjustments (CEBS, 2010; EBA, 2011).

For clawing back bonuses a company may create criteria that would apply to this instrument. Such criteria may be for example an evidence of misbehavior or serious fault by a staff member (breaking the code of conduct or internal rules, especially concerning risks). Also in the case when company is experiencing a serious economic downturn in its performance and when a company suffers a significant failure of risk management (EBA, 2011).

An additional recommendation by EBA is the establishment of the remuneration committee. This committee would be responsible for matters regarding remuneration, including those which have influence on risk management. The chair of the committee should have experience and knowledge

in risk management and should not be a member of the management board which is an executive position. When preparing decisions the committee should take into account long term interests of shareholders, various stakeholders, investors, credit institutions and should provide adequate information to the supervisory board (EBA, 2011).

5.2.1 Principles for remuneration

The FSB's *Principles for sound compensation* (2010) aim to ensure effective governance and an alignment of compensation with rational risk taking. Some of these principles are described below in this part.

The management board must actively oversee the compensation system. It should also not be primarily controlled by the chief executive officer and the management team. The board members should be independent and should have expertise in risk and in compensation systems.

The compensation system should be regularly monitored for alignment with design policies and procedures. Staff engaged in risk control must be independent, have appropriate authority and be compensated in a way that is independent from areas they oversee.

Compensation must be adjusted for all types of risks. All employees should be evaluated in the same manner, meaning risk adjustments should account for all types of risks, including cost of capital, liquidity and reputation risk.

Compensation system should be linked with risk outcomes. For instance bonuses should be lowered or removed when a firm, division or business unit performs poorly and the bonus pool should be linked to the overall performance of the firm.

Lastly, companies must provide clear and comprehensive information on their compensation practices in order to have constructive engagement by all stakeholders and must also prepare an annual report on compensation, including information on decision-making processes, with details of the make-up on the remuneration committee (FSB, 2010, pp. 1-6).

6 THE IMPACT OF CORPORATE GOVERNANCE ON BANK'S PERFORMANCE AND RISKINESS

In this section the first part describes the most discussed topics by the academics and the second part reviews the related literature which formed the basis for formulating the hypotheses. The reviewed areas are the following: agency problem, corporate governance, bank performance and also bank riskiness.

Today, the topic of corporate governance has become more prominent than ever before. There are several reasons for the increased interest in this area. Among the reasons are the 1997 Asian financial crisis and more recently the global financial crisis of 2007. The Asian financial crisis highlighted the problems of corporate governance in Asian companies, particularly the East Asian region. The main concerns were focused on ownership, the dominance of controlling shareholders and the separation of voting and cash flow rights (Driffield , Mahambare & Brunel, 2006, pp. 1-3). The prevalence of family ownership, relationship-based transactions, government interference and poor legal structures and law enforcement resulted in large deviations between control and cash flow as well as in a low level of protection of minority rights. The corporate mechanisms were not strong enough and led to agency problems, which not just resulted in poor firm performance, but also in a significant financial crisis (Bino & Tomar, 2008).

In contrast, during the second year of the global financial crisis, the global society started to look for the main causes of the financial crisis. One of the causes, which significantly influenced the crisis was the inferior mechanisms of corporate governance in the banking industry. The main concerns are still the remuneration system of managers, risk-management practices and imprudent board practices (Mülbert, 2010, p. 8).

These events that took place in the last two decades influenced organizations, governments and researchers to investigate the mechanisms of corporate governance in companies.

The research questions addressed for this study are: (1) *How does the bank's corporate governance affect its performance?* and (2) *How does the bank's corporate governance affect its riskiness?*

6.1 Agency Problem

According to Jensen and Meckling (1976, pp. 4-6) the agency relationship is defined as a one party (the owner) contract with another party (the manager), where the manager performs activities on the behalf of the owner. Agency problems will occur if managers are not acting in the best interest of the shareholder and they instead prefer personal benefits. However, it is possible for shareholders to protect their own interests by implementing monitoring activities, in order to ensure that managers do not behave in a way that would damage the wealth of their shareholders. There are various mechanisms that address agency problems. These are governance structures, capital structure and managerial ownership structures.

Moreover, Jensen (1986, p. 2) emphasized that conflicts of interest between managers and shareholders are dangerous in firms with sizable free cash flow. A company's free cash flow is cash in excess of what is required to fund all projects with positive net present value. The theory

of free cash flow states that managers do not always behave to maximize the value of the firm; if a company generates sizable free cash flow, the mangers may invest in projects with negative present value or overspend on organizational inefficiencies which would damage shareholders' wealth.

Denis (2001, pp. 191-198) claims that conflict between managers and shareholders is due to risk aversion of the managers. Shareholders always would like to diversify their investment in order to minimize the risk of their investments. However, since most of the income of managers is in bonuses, which are dependent on revenues of the company, the level of risk that managers and shareholders can bear for the same investment project is quite different. For instance, managers might not want to bear risk that will potentially mean losing favorable investment opportunities, which can lead to conflicts of interest between managers and shareholders. Denis also claims that the simplest way to solve agency problems and ensure that shareholders delegate decision rights to managers to act in the shareholders' best interest is to eliminate the separation between ownership and control of a company.

Further solutions are to establish contracts or direct monitoring by shareholders that can reduce potential agency problems and as a result it will be possible for managers to pursue their own interest without damaging the shareholders' interest.

The study by Ciancanelli and Gonzalez (2000) postulates that the agency problem, which arises in banks are more complex in nature. Here the regulation has far reaching effects because of the interdependence of the monetary flows. Excessive risk-taking by banks may result in bankruptcy and cause troubles that are soon felt in the banking sector and later also in the economy as a whole.

6.2 Literature review and hypotheses

According to the OECD (OECD, 1997), the purpose of corporate governance is to eliminate or reduce the potential conflict of interest between managers and shareholders. It also discusses that sound corporate governance should support managers and the board of directors to achieve the best interests of the shareholders and of the company. Fama and Jensen (1983, p. 301) argued that corporate governance affects firm performance. They found out that majority of firms with stronger governance controls have better performance over the long term.

In addition, Spong and Sullivan (2007, pp. 1-6) state that banks are operating under various types of management and ownership structures, especially in the case of community banks. Some banks are managed by individuals with a controlling interest in the bank and some have hired managers. Also, ownership structures can vary from having a concentrated ownership, which means having

just a few owners, to dispersed ownership that means having a wide group of shareholders. The other ownership structure is being a listed company. Furthermore, differences also range from boards of banks with many outside directors to few outside directors and also from key stockholders with financial resources concentrated in a bank to stockholders with diversified portfolios. From the differences mentioned above, there cannot be an optimal governance framework drawn out that would apply in each scenario. Instead, small and large banks must structure their operations according to the quality of management that is available and to the investors that they are able to attract. The findings of this paper are that an ownership stake for hired managers can help to improve bank's performance. In addition, the management board will have a more positive effect on bank's performance when management board directors have a significant financial interest in the bank. This financial stake is motivating these directors, since benefits are observed directly from their actions and it also encourages them to actively monitor its management.

Moreover, many studies have investigated the relationship between ownership structure and firm performance. For example, Fama and Jensen (1983, p. 301); Franks, Mayer and Renneboog (2001, p. 209) argue that concentrated ownership helps to mitigate the agency conflicts between managers and shareholders, since controlling shareholders are motivated to monitor managers, hence improving bank performance. On the other hand, concentrated ownership allows shareholders to expropriate minority shareholders, thus creating an agency conflict, which leads to poor bank performance (Shleifer & Visny, 1986, pp. 465-467; Magalhaes, Urtiaga & Tribo, 2010, pp. 1-2). In addition, Iannota et al. (2006, pp. 19-20) find that the performance of banks with dispersed ownership does not significantly differ from the outcomes of banks with concentrated ownership. However, banks with higher ownership concentration have better loan quality and lower asset risk. Another paper by Bino and Tomar (2008) studies corporate governance and bank performance in the Jordanian banking industry, the authors found that ownership structure and board composition have a strong influence on bank performance In particular, they found that banks with institutional majority ownership have the highest performance. Moreover, they claim that bank's size has a positive relationship with bank's performance measured by return on equity, thus it shows that the larger the bank's total assets the better the performance of a bank, while the risk of a bank measured by loan to deposit ratio does not have an important impact on bank performance. In addition, the study made by Yung (2009) also shows that bank size has a positive impact on bank performance. The author also argues that larger banks have better ability to diversify different types of risks from investment and therefore they have superior risk management. In sum, I hypothesise that:

Hypothesis 1: The higher the ownership concentration of a bank, the better the performance of the bank.

Hypothesis 2: The larger the bank, the better the performance of the bank.

Hypothesis 3: The larger the bank, the better the risk management of the bank.

In a study by Hau and Thum (2009) the authors study the impact of the educational background of the supervisory board's members on performance of banks in the German banking sector. In particular they studied the financial background of the board members. They measured three levels of educational achievement. These levels were business/economics degree, MBA degree and PhD degree in business/economics. They assumed that educational background matters for the monitoring ability of the supervisory board members. They also found out that board members with lower education levels, pave the way for higher losses. Moreover, Nicholson and Kiel (2004) studied the management board's intellectual capital. They created a model construct, which proposed that the human capital of the board members and their advisers improves the firm performance.

Hypothesis 4: The higher the SB education, the better the performance of the bank.

Hypothesis 5: The higher the MB education, the better the performance of the bank.

As for board committees, since the recent accounting scandals, the presence of audit committees is essential for boards of directors. It has also gained greater acceptance in Europe from the mid-1990s (Collier & Zaman, 2005). The paper by Zhou and Chen (2004) examines the relationship between audit committees, board characteristics and earnings management through loan loss provisions in commercial banks. They find out that banks with audit committees and committees with better governance expertise are connected to less earnings management. Moreover, the study by Aebi et al. (2011) investigates the relationship between risk committees, risk governance and bank performance during the financial crisis of 2007. The result indicates that banks with risk management policies and procedures related to corporate governance mechanisms have significantly higher performance. The influence of the compensation committee on bank performance is investigated in the paper by Mishra and Nielsen (2000). The authors find out that CEO pay-performance sensitivity has a positive effect on bank performance and that the sensitivity can be largely influenced by the compensation committee. The second paper examines the effect of the compensation committee quality on the CEO cash compensation and accounting performance (Sun & Cahan, 2009). The results suggest that shareholders and directors should be concerned about the composition of the compensation committee, because the compensation committee's quality varies depending on the size and other characteristics of the committee's members.

Hypothesis 6: Presence of the audit committee improves risk management of the bank.

Regarding management board bonuses, the paper by Cornett et al. (2006) examines earnings management at U.S. banks. First of all, the paper states that the level of pay alone is not important in mitigating the agency issues, but what is crucial is the strength of the pay for performance relationship--contracts that are performance and stock oriented. They found out that pay for performance sensitivity is negatively related to earnings management and positively to earnings. The study by Gehrig, Torben and Menkhoff (2009) analyzes how bonus payments shape the behavior of fund managers in the U.S., Germany and Switzerland. The authors find out that higher bonus payments are significantly related to a higher working effort.

Hypothesis 7: The higher the bonus paid to MB members, the better the performance of the bank.

Another dimension of corporate governance investigated in the literature is the supervisory board composition. The evidence of the influence of independent board members on bank performance remains mixed. According to Bhagat and Black (2002) firms with more independent boards do not perform better than other firms while Hau and Thum (2009) argue that more independent boards have a positive influence on bank performance. In addition, their data also confirm that lower level of supervisory board competence in finance leads to higher losses. On the other hand, the monitoring ability of the supervisory board together with the quality of financial experience has a positive influence on the performance of banks. The recent paper by Becht et al. (2012) examines the bank failures during the financial crisis with the focus on corporate governance. They argue that banks with less independent boards, stronger risk officers and executives with less variable compensation, reported fewer losses. Their suggestion is to emphasize the role of creditors. This could be done by having a creditor seat on the board. Furthermore, the compensation must be aligned in a simpler way and directly with debt holders, for instance through credit default swaps.

Hypothesis 8: The more independent the board, the better the performance of the bank.

The most discussed issue relating to the topic of whether corporate governance impacts on bank risk is the ownership of banks. There are several arguments on this issue. Firstly, it is that in any limited liability company, diversified owners have incentives to increase bank risk after they collect funds from depositors (Galai & Masulis, 1976). Nevertheless, managers with skills in banking and private benefits of control (having influence on a company by large shareholders at the expense of small shareholders) will have fewer incentives to take higher risks as compared to stockholders without those skills and benefits (Jensen & Meckling, 1976; Riewsathirathorn, Jumroenvong & Jiraporn, 2011). Secondly, as monitoring efforts increase with concentrated ownership, managers will have fewer incentives to undertake risky investments. Therefore, this result indicates that managers in a concentrated ownership structure make less risky decisions

(Riewsathirathorn et al., 2011). In addition, Laeven and Levine (2008) studied risk-taking in banks. Their results are different from those found by Riewsathirathorn et al. (2011). The authors claim that banks with more powerful owners are taking higher risks; meaning that large owners have substantial cash flow and power and therefore incentives to induce bank's managers to increase risk taking.

Hypothesis 9: *The higher the ownership concentration of a bank, the lower the risk of the bank.*

With regard to the education of management board members, the recent study by Berger, Kick and Schlaeck (2012) investigates how executive board composition affects bank's risk taking in Germany. The educational attainment was measured by executives holding PhD degrees. The results suggest that executives with PhD degrees are associated with a decrease in risk taking. This implies that better-educated executives have superior risk-management techniques. The paper by Hutchison and Tao (2012) examines the role of risk and compensation committees in Australian financial companies. They examined four committee characteristics, including: committee size, independence, expertise and the level of activities. Their results show that the presence of a large risk committee together with the presence of a compensation committee decreases the level of risk in a bank. Moreover, the study demonstrates that the co-ordination of the two committees improves the performance of a firm. A different study by Ellul and Yerramilli (2011) investigates how internal risk controls influence the risk-taking behavior in U.S. bank holding companies. Overall their results suggest that strong internal risk controls may be effective in restraining risk-taking behavior in banking institutions.

Hypothesis 10: Presence of the risk committee decreases a bank's riskiness.

Hypothesis 11: The higher the MB education, the lower the risk of the bank.

The paper by Bechmann and Raabale (2010) analyze excessive risk-taking and misuse of incentive-based compensation in Denmark. The first result shows that banks with incentive-based compensation for the CEOs are banks with excessive risk-taking and had also low performance during the financial crisis. However, it is important to state, that the excessive risk-taking was taking place even before the introduction of the incentive-based compensation system. Therefore, incentive-based compensation may not be the only problem. The second result shows a strong evidence of poor governance as a result of inadequate monitoring by shareholders. The lack of monitoring is explained by dispersed ownership. Lastly, the results show that banks with poor monitoring by shareholders and also where CEO receives incentive-based compensation take significantly more risks and perform not as well as other banks. In contrast, Gehrig et al. (2009) found that higher bonus payments are not significantly related to risk-taking. Lastly, the study by Tandelilin et al. (2007) examines the relationship between corporate governance and bank risk-

management. The authors found a positive relationship existed between corporate governance practices and risk management. Put another way, this positive relationship between corporate governance and risk management indicates that good corporate governance may reduce risk-taking behavior by a bank.

Hypothesis 12: The higher the bonus paid to MB members, the higher the risk of a bank.

Table 4 summarizes the theoretical as well as the empirical relationships between corporate governance variables used in this paper and bank performance. A positive sign indicates that corporate a governance variable improves bank performance; a negative sign means that the variable causes poorer bank performance while no effect indicates that there is not enough evidence that the variable improves or worsens bank performance. On the other hand, Table 5. summarizes the relationships between corporate governance variables and bank riskiness. In this case a negative sign indicates that the corporate governance variable decreases bank risk while a positive sign indicates that the variable increases the risk of a bank.

Variable	Sign of relationship with	Appearance in the literature
	performance	
Bonus	Positive	(Gehrig et al., 2009; Mishra &
		Nielsen, 2000)
MBeducation	Positive	(Nicholson & Kiel, 2004)
Ownership	Positive / Negative	(Fama & Jensen 1983; Franks et
		al., 2001) / (Magalhaes et al.,
		2010)
SBeducation	Positive	(Hau & Thum, 2009)
Independent	Positive / No effect	(Becht et al., 2012; Hau & Thum,
		2009)/(Bhagat & Black, 2002)
Size	Positive	(Bino & Toma, 2008; Yung,
		2009)

Table 4. Summary of relationship between corporate governance and bank performance

Variable	Sign of relationship with risk	Appearance in the literature
Audit	Negative	(Zhou & Chen, 2004)
Risk	Negative	(Collier & Zaman, 2005; Ellul
		& Yerramilli, 2011; Hutchison &
		Tao, 2012)
Bonus	Positive	(Bechmann & Raabale, 2010;
		Gehrig et al., 2009)
MBeducation	Negative	(Berger et al., 2012)
Ownership	Negative / Positive	(Jensen & Meckling, 1976;
		Riewsathirathorn et al., 2011) /
		(Laeven & Levine, 2008)
Size	Negative	(Yung, 2009)

Table 5. Summary of relationship between corporate governance and bank riskiness

7 METHODOLOGY

The first part of this section describes the sample used for the analysis. In the second part the data collection methods as well as their limitations are presented. Moreover, the third part explains the research method used for this paper and last part describes the variables which have been used in the analysis.

7.1 Sample

The data collected are the annual observations of the Czech licensed banks from 2007 to 2010. According to the Czech Banking Association, there were 20 listed banks and building and loan associations in 2007, in each of 2008, 2009 and 2010 there were 22. Secondary data was collected from banks' official websites and annual reports as well as the codes of conduct. The studied banks for the panel regression are shown in Table 6.

Ceska sporitelna, a.s.	Raiffeisenbank, a.s.
Ceska exportni banka, a.s.	Unicredit Bank Czech Republic, a.s.
Ceskomoravska zarucni a rozvojova banka, a.s.	Volksbank, a.s.
Ceskoslovenska obchodni banka, a.s.	Postovni Sporitelna a.s.
GE Money Bank, a.s.	Hypotecní Banka, a.s.
J&T Banka, a.s.	Modra pyramida stavebni sporitelna, a.s.
Komercni banka, a.s.	Ceskomoravska stavebni sporitelna, a.s.
LBBW Banka, a.s.	Wustenrot-stavebni sporitelna a.s.
PPF Banka, a.s.	Wustenrot hypotecni banka a.s.

Table 6. List of banks used for the analysis

7.2 Limitations and ethical issues on data collection

As most of the required information for Fio Banka, Vseobecna Uverova Banka, was not available, these banks are not included in the sample. The important data missing in the annual reports for these banks were ROE, ROA, information on education of the SB and the MB board, information on board committees as well as there being limited information on compensation. In addition, banks Banco Popolare Ceska republika and Evropsko-Ruska Banka are also not part of the sample, having annual reports only published in 2009 and 2010, due to them each having entered the Czech market just recently.

All the data was collected from the annual reports of the banks and from their official websites. Therefore all of this data is publicly available and for that reason there is no ethical concern in this research.

7.3 Research method

The impact of corporate governance on bank performance and risk may have different results over the researched period from 2007 to 2010. This paper is based on the same research method as the paper by Cordeiro & Veliyath (2003). In that paper, the authors investigated the link between CEO compensation and governance mechanisms. Their sample consisted of 222 companies over the period from 1992 to 1995. The analysis used was panel regression analysis. This procedure deals with data sets that consist of time series observation (4 years) on each of several cross-sectional units (222 companies).

The panel regression used in this study analyses the relationship between corporate governance and bank performance as well as bank riskiness. The sample consists of data for 18 banks from 2007 to 2010. Therefore, the total number of observations in the sample is 72(18*4=72) for every variable.

There are two parts to the empirical analysis set out in this paper. The first part presents descriptive statistics, which provide general characteristics of the variables used in the study. This section shows simple summary statistics about the sample and the variables. The second part is the panel regression, which analyzes the relationship between corporate governance and bank performance as well as bank riskiness.

7.3.1 Panel regression

The paper uses panel regression to analyze the relationship between corporate governance and bank performance as well as bank risk, controlling for bank size. The use of a panel regression model with period fixed effects seems to be the most appropriate regression model for this paper. Fixed effect regression methods are used to analyze panel data with repeated measures on both independent and dependent variables. The attractiveness of this method is in controlling for all stable characteristics of individuals, whether they are measurable or not. This paper analyzes bank data during the 2007-2010 period, which was marked mainly by a global financial and economic crisis. Therefore the applied period fixed effects take into account the turbulent times of the period, which might have a significant effect on the banking sector. Generally, the period fixed effects try to capture information, which is not included in the other variables of the regression model (EViews, 2004). The general regression model (1) is as follows:

$$Y_{it} = \alpha_{it} + \beta_1 C G_{1i} \dots + \beta_8 C G_{8i} + \gamma_1 C V_{1i} + \gamma_2 C V_{2i} + \delta_t + \varepsilon$$
(1)

Y_{it}

The dependent variables are bank performance (*NII, ROE, ROA*) and bank risk (*Coverage, CA, LTD* and *NPL*), respectively.

α_{it}

Is the intercept of the model.

βCG_{it}

Are independent variables for corporate governance variables, including (Audit, Risk, Bonus, MBeducation, Ownership, SBeducation, Independent).

γCV_{it}

Are the independent variables for control variables, these include performance variables (*NII*, *ROE*, *ROA*), risk variables (*Coverage*, *CA*, *LTD* and *NPL*) and bank size (*Size*) are used interchangeably. As performance and risk are related, when the dependent variable is performance, the measures of risk are used as independent variables and vice versa.

δ_t

Period fixed effects, which take into account the turbulent times of the period.

$\boldsymbol{\mathcal{E}}_{it}$

Is an error term.

7.4 Variable measurement

The variables measure three groups of comprehensive constructs: performance, risk, corporate governance. Additionally, size is measured as a control variable.

Table 7. List of variables						
Abbreviation	Full name of the variable	Construct				
Audit	The presence of an audit	Corporate Governance				
	committee					
Risk	The presence of a risk	Corporate Governance				
	committee					
Bonus	Management boardbonuses	Corporate Governance				
MBeducation	Management board	Corporate Governance				
	members' education					
Ownership	The largest share of	Corporate Governance				
	ownership					
SBeducation	Supervisory boardmembers'	Corporate Governance				
	education					
Independent	Supervisory boardnumber	Corporate Governance				
	of independent members					
Coverage	Provisions to total loans ratio	Risk				
CA	Capital adequacy ratio	Risk				
LTD	Loan to deposit ratio	Risk				
NPL	Non-performing loans ratio	Risk				
NII	Net interest income	Performance				
ROE	Return on equity	Performance				
ROA	Return on assets	Performance				
Size	Bank size	Control				

7.4.1 Performance variables

Net interest income (NII)

Net interest income is the difference between the revenue that is earned from bank's assets and the expenses connected with paying out liabilities. These bank assets include all forms of personal and commercial loans, securities and mortgages. On the other hand, the liabilities are customer deposits. The surplus identified from the spread between interest paid out on deposits and interest earned on assets is the net interest income. However, in the panel regression the NII variable is measured as a relative number as equation (2) shows (Net interest income, 2012):

NII = (Interest Payments on Assets - Interest Payments on Liabilities)/Total assets (2)

Net interest income of banks depends on how the assets and liabilities are composed. The factors, which affect the net interest income, are the types of interest rates. Banks charge borrowers with floating or fixed interest rates (Net interest income, 2011).

The evidence of using this variable as an indicator of bank's performance is also found in the study written by Kunt and Huizinga (2000).

Return on equity (ROE)

Return on equity is the amount of net income returned as a percentage of shareholders' equity. In other words, it is an indicator of a company's profitability in the sense that it reveals how much profit a company makes with the money shareholders have invested in it. It is by far the most used indicator for measuring a bank's performance. It gives a direct assessment of the shareholders' investment return. In many studies ROE is used as a performance indicator. The most relevant studies for this paper are by Bino & Tomar (2008) and Bonin, Hasan & Wachtel (2004). It is available in most of the annual reports of banks which are used in this paper and therefore it is possible to make comparisons among companies in the same business sector as well as in different sectors. A satisfactory level of return on equity is problematic to define after the financial crisis. The equation (3) for measuring ROE is:

ROE = *Net income/ shareholder's equity* (3)

Return on assets (ROA)

The return on assets shows how profitable a company is relative to its total assets. It shows how efficient management is at using assets to generate earnings. It demonstrates whether the bank uses assets effectively in order to produce its income, therefore it is an important profitability indicator. It is important to point out that banks are highly leveraged institutions and thus 1% ROA is considered highly profitable in the banking sector in comparison with, for example, technology companies, which have on average 5% ROA (ROA, 2012). That is one of the reasons they cannot be usually compared.

The use of this variable in a similar way as in this paper is found in studies by Yung (2009) and by Bonin, Hasan & Wachtel (2004). The way to calculate ROA is illustrated in equation (4):

ROA = Net income/Total assets (4)

7.4.2 Risk variables

Provision to loan ratio (Coverage)

One of the risk variables used in the regression analysis is the provision to loan ratio. This ratio in the banking industry is usually between 3% and 8% (3% being considered an acceptable percentage) (Banking ratios, 2012). The provision to loan ratio is calculated by equation (5):

Coverage = Provisions/ Total loans (5)

Capital adequacy (CA)

The capital adequacy ratio defines the capacity of a bank to meet its risks such as credit risk, operational risk, market risk and others including bank's liabilities. It is a measure of how much capital is used for supporting a bank's assets. The theoretical justification for using this variable as a risk measure can be found in the paper by Blum & Hellwig (1995). According to this paper, capital adequacy requirements are intended to reduce a bank's insolvency risk and it may also reduce the moral hazard in the bank. A satisfactory percentage is considered to be around 8 % and above (Capital adequacy ratio, 2012).

The capital adequacy is calculated as set out in the following equation (6):

CA = (Tier one capital + Tier two capital)/Risk weighted assets (6)

Tier one capital is the core capital, including equity capital and disclosed reserves. Tier two capital includes items such as general loss reserves, subordinate term debt or undisclosed reserves. Risk weighted assets are calculated by adjusting each asset class for risk in order to see a bank's real exposure to potential losses (Risk weighted assets, 2012).

Loan to deposit ratio (LTD)

This variable is used to calculate the ability of a lending institution to cover withdrawals made by its customers. A lending institution must have a certain measure of liquidity which enables it to maintain its daily operations. A higher loan to deposit ratio indicates that a bank takes more risks by making excessive loans. Therefore it is always favourable to have a lower loan to deposit ratio than a higher one, since high values of LTD indicate the potential source of illiquidity and insolvency.

The evidence of application of this variable is found in the study by Samad & Hassan (1999). The equation (7) for calculating the ratio is (Loan to deposit ratio, 2011):

LTD = *Total loans/Total deposits* (7)

Non-performing loan ratio (NPL)

The NPL ratio is the ratio of non-performing loans over total loans. Banks often report the NPL ratio as the measure of their outstanding loans. A high NPL ratio means larger losses are likely since bad loans need to be written off. The NPL ratio was used in the study by Jimenez et al. (2007) and a good percentage is considered around 4%. It is calculated by the equation (8) (Nonperforming loans, 2011):

NPL = *Total amount of non-performing loans/total loans* (8)

7.4.3 Corporate governance variables

The presence of an audit committee (Audit)

Audit committees have developed into important committees of management boards, mainly due to the recent scandals in the financial world. However, audit committees have been present in continental Europe from the mid-1990s, are recommended by world institutions (FSB, OECD) and are usually recommended in the codes of national institutions. Their key role should be in supervising the audit function Colier & Zaman (2004). Theoretical evidence of the use of this variable is found in the study by Zhou & Chen (2004).

The presence of an audit committee is represented in this paper by a dummy variable; the value of zero signifies no presence of an audit committee and one is the presence of an audit committee.

The presence of a risk committee (Risk)

The presence of a risk committee is becoming a reality. The recent findings on excessive risk taking due to improper compensation structures raised the idea of establishing risk committees in banks. The risk committee's responsibility should be to assess and monitor the risks of a bank's business activities. Furthermore, it has the responsibility to assess the management board's risk behavior, taking into account bank laws (Delloite, 2010). A theoretical justification for using this variable is found in the study by Aebi et al. (2011).

As is the case for the audit committee, in this paper, the dummy variable of value one indicates the presence of a risk committee.

Management board bonuses (Bonus)

Management board bonuses were and still are a widely discussed issue in the banking industry. The use of this variable in a similar way can be found in the study by Cornett et al. (2006). Due to data limitations, this variable is measured as the ratio of the total amount of bonuses given to total managerial pay, as it is shown in equation (9):

Bonus = *Total bonuses/Total managerial pay* (9)

Management board--education of members (MBeducation)

The education of management board members is measured as a weighted average of different levels of education that the members hold. The higher numbers of this variable indicate that the management board has a higher level of education. The different levels of education are secondary, bachelor, master and PhD education. In the ordinal scale (1) is assigned to secondary school, (2) to bachelor degree, (3) to master degree and (4) to PhD degree. A possible impact of human capital on performance is also stated in the study by Nicholson & Kiel (2001).

However, it is important to state that the measure of education level has limitations, since the experience and the field of study where managers received their degree are not included. As Table 8 illustrates the five banks with higher educational level of management board are Komercni banka, a.s., Ceskoslovenska obchodni banka, a.s., Ceskosl

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	3.13	3.00	3.00	3.00	3.03	8
Ceska exportni banka, a.s.	3.20	3.00	3.40	3.40	3.25	4
Ceskomoravska zarucni a rozvojova banka, a.s.	3.00	3.00	3.00	3.00	3.00	9
Ceskoslovenska obchodni banka, a.s.	3.17	3.29	3.29	3.29	3.26	2
GE Money Bank, a.s.	2.67	2.67	2.75	2.67	2.69	16
J&T Banka, a.s.	2.75	2.75	2.75	2.75	2.75	13
Komercni banka, a.s.	3.29	3.17	3.33	3.29	3.27	1
LBBW Banka, a.s.	3.25	3.25	3.17	3.25	3.23	5
Postovni Sporitelna, a.s.	3.17	3.29	3.29	3.29	3.26	2
PPF Banka, a.s.	3.00	2.75	3.00	3.00	2.94	12
Raiffeisenbank, a.s.	2.71	2.71	2.71	2.67	2.70	15
Unicredit Bank Czech Republic, a.s	3.00	3.00	3.00	3.00	3.00	9
Volksbank, a.s.	3.00	3.00	3.00	3.00	3.00	9
Hypotecni Banka, a.s.	3.00	3.25	3.25	3.25	3.19	6
Modra pyramida stavebni sporitelna, a.s.	2.60	2.50	2.33	2.33	2.44	18
Ceskomoravska stavebni sporitelna, a.s.	3.00	3.00	3.25	3.00	3.06	7
Wustenrot-stavebni sporitelna, a.s.	2.80	2.83	2.67	2.67	2.74	14
Wustenrot hypotecni banka, a.s.	2.67	2.67	2.67	2.67	2.67	17
Maximum	3.30	3.30	3.40	3.27		
Minimum	2.60	2.50	2.30	2.30		
Median	3.00	3.00	3.00	3.00		
Mean	2.90	2.90	2.90	2.90		
Standard deviation	0.20	0.20	0.30	0.20		

Table 8. Management board members' education

Source: (2007-2010) Annual reports of banks in the Czech Republic.

The share of the largest shareholder (Ownership)

This ownership variable is defined in percentage terms as the largest share of capital owned by a shareholder. Given the ownership structure of the banks in the Czech Republic, the variable makes sense as it is very often the case that a single owner controls the bank. The ownership structure is important, since dispersed ownership has more difficulties in monitoring the management, hence creating agency problems. On the other hand, concentrated ownership can provide more effective monitoring of management since the controlling shareholders are more motivated to monitor managers (Wen, 2009). A similar use of this variable as used in this paper is also found in the study by Riewsathirathorn et al. (2011).

Supervisory board--education of members (SBeducation)

The education of supervisory board members is measured as a weighted average of different levels of education. The levels are, again, secondary, bachelor, master and PhD education. In the ordinal scale (1) is assigned to secondary school, (2) to bachelor degree, (3) to master degree and (4) to PhD degree. The theoretical justification for using this variable in a similar way as in this paper can be found in the study by Hau & Thum (2009).

Table 9 illustrates the five banks with higher educational level of supervisory board are Wustenrot hypotecni banka, a.s., Hypotecni Banka, a.s., Wustenrot-stavebni sporitelna, a.s., Raiffeisenbank, a.s. and Komercni banka, a.s. On the other hand, the three banks with the lowest educational level of supervisory board are PPF Banka, a.s., Unicredit Bank Czech Republic, a.s, J&T Banka, a.s. However, again it is important to state that the measure of education level has limitations, since the experience and the field of study where managers received their degree are not included.

Rank	2007	2008	2009	2010	Average	Rank
Caska aporitalna, a a	2007	2000	2007	2010	Average	Kalik
Ceska sponteina, a.s.	3.12	3.00	3.00	3.00	3.03	8
Ceska exportni banka, a.s.	3.08	3.08	3.00	3.08	3.06	6
Ceskomoravska zarucni a rozvojova banka, a.s.	3.11	3.11	3.00	3.00	3.06	6
Ceskoslovenska obchodni banka, a.s.	3.00	2.89	2.78	2.78	2.86	14
GE Money Bank, a.s.	3.00	3.00	3.00	3.00	3.00	9
J&T Banka, a.s.	2.67	2.89	2.89	2.89	2.84	15
Komercni banka, a.s.	3.00	3.11	3.11	3.11	3.08	5
LBBW Banka, a.s.	3.00	2.91	3.00	3.00	2.98	10
Postovni Sporitelna, a.s.	3.00	2.89	2.78	2.78	2.86	12
PPF Banka, a.s.	2.43	2.50	2.50	2.33	2.44	17
Raiffeisenbank, a.s.	3.11	3.11	3.11	3.11	3.11	4
Unicredit Bank Czech Republic, a.s	2.56	2.56	2.56	2.56	2.56	16
Volksbank, a.s.	3.00	3.00	2.83	3.00	2.96	11
Hypotecni Banka, a.s.	3.33	3.33	3.33	3.33	3.33	2
Ceskomoravska stavebni sporitelna, a.s.	2.83	3.00	3.00	3.00	2.96	13
Wustenrot-stavebni sporitelna, a.s.	3.25	3.00	3.25	3.33	3.21	3
Wustenrot hypotecni banka, a.s.	3.33	3.29	3.29	3.67	3.40	1
Maximum	3.30	3.30	3.30	3.70		
Minimum	2.43	2.50	2.50	2.30		
Median	3.00	3.00	3.00	2.90		
Mean	2.90	2.90	2.90	3.00		
Standard deviation	0.20	0.20	0.20	0.30		

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Source: (2007-2010) Annual reports of banks in the Czech Republic.

Supervisory board--number of independent members (Independent)

In this study the variable is calculated as the number of independent members in the supervisory board divided by the number of supervisory board members. The supervisory board is usually independent from the management board. Therefore independent members are members who are not related to management or to shareholders or who do not work for the company or its subsidiary or holding company (Ministry of Finance, 2012). The evidence of the use of this variable is also found in the study by Hau & Thum (2009).

7.4.4 Control variable

Bank size (Size)

The variable is the size of the bank and it is defined by the total assets of the bank at the end of the year. In three studies by Bonin et al. (2004), Kobeissi (2004) and Bino & Tomar (2008) the bank size variable has been used as a control variable in a similar context.

As Table 10 displays, the four largest banks in terms of total assets (bank size %) are Ceskoslovenska obchodni banka, a.s., Ceska sporitelna, a.s., Komercni banka, a.s. and Unicredit Bank Czech Republic, a.s. The first three banks are historically the oldest banks in the country. The largest bank in the Czech Republic is Ceskoslovenska obchodni banka, a.s., which holds 24% of the total assets of the industry, while the smallest bank is Wustenrot hypotecni banka, a.s. that only holds 0.01% of the total assets of the industry. It can be also noticed that bank's market share have not dramatically changed over the period from 2007 to 2010.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	0.20	0.24	0.23	0.23	0.22	2
Ceska exportni banka, a.s.	0.01	0.01	0.01	0.02	0.01	11
Ceskomoravska zarucni a rozvojova banka, a.s.	0.02	0.02	0.02	0.02	0.02	9
Ceskoslovenska obchodni banka, a.s.	0.29	0.23	0.23	0.23	0.24	1
GE Money Bank, a.s.	0.03	0.03	0.04	0.04	0.03	8
J&T Banka, a.s.	0.01	0.01	0.01	0.01	0.01	12
Komercni banka, a.s.	0.20	0.19	0.19	0.18	0.19	3
LBBW Banka, a.s.	0.01	0.01	0.01	0.01	0.01	12
Postovni Sporitelna, a.s.	0.00	0.01	0.01	0.01	0.00	17
PPF Banka, a.s.	0.01	0.01	0.01	0.01	0.01	12
Raiffeisenbank, a.s.	0.04	0.05	0.05	0.05	0.05	5
Unicredit Bank Czech Republic, a.s	0.08	0.08	0.07	0.07	0.07	4
Volksbank, a.s.	0.01	0.01	0.01	0.01	0.01	12
Hypotecni Banka, a.s.	0.03	0.04	0.04	0.04	0.04	6
Modra pyramida stavebni sporitelna, a.s.	0.02	0.02	0.02	0.02	0.02	9
Ceskomoravska stavebni sporitelna, a.s.	0.04	0.04	0.04	0.04	0.04	6
Wustenrot-stavebni sporitelna, a.s.	0.01	0.01	0.01	0.01	0.01	12
Wustenrot hypotecni banka, a.s.	0.00	0.00	0.00	0.00	0.00	18
Maximum	0.29	0.23	0.23	0.24		
Minimum	0.00	0.00	0.00	0.00		
Median	0.01	0.01	0.01	0.01		
Mean	0.05	0.05	0.05	0.05		
Standard deviation	0.08	0.80	0.80	0.80		

Table 10. Bank size

Source: (2007-2010) Annual reports of banks in the Czech Republic.

8 EMPIRICAL ANALYSIS

8.1 Descriptive statistics

Firstly, this section provides descriptive statistics of some variables used in the panel regression analysis and secondly it sets out descriptive statistics taken from the annual reports of banks. The section is divided into three parts: Bank Performance, Bank Risk and Corporate Governance.

8.1.1 Bank Performance

Return on assets (ROA)

Table 11 shows that the top five banks in the Czech Republic banking sector in terms of ROA in the period 2007-2010 are GE Money Bank, Komercni banka, PPF Banka, Ceska sporitelna and Modra pyramida stavebni sporitelna. In contrast, the three least efficient banks are Wustenrot hypotecni banka, Ceska exportni banka and LBBW Banka. More than half of the banks have reached ROA over 1%, which is considered as a success value in the banking industry (Return on assets, 2009). When looking at individual cross-sectional graphs (Figure 1, Appendix II), 12 out of 18 banks experienced a decline of ROA in 2009 and the reason for this decline was probably due to the global financial crisis. The statistics show overall that the larger banks use their assets more effectively than smaller banks. In general, it appears to be the case that banks with significant assets produce better results and have a competitive advantage when competing with banks that control a relatively small amount of assets. The average ROAs for the Czech Republic in the period 2007-2010 are 1.15%, 1.26%, 0.87% and 1.13% respectively for each year; Figure 2 in Appendix II shows the average value line with a standard deviation plus and minus interval of two.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	1.50	1.80	1.40	1.30	1.50	4
Ceska exportni banka, a.s.	0.27	0.53	0.20	0.12	0.28	17
Ceskomoravska zarucni a rozvojova banka, a.s.	1.63	1.20	1.24	1.34	1.35	8
Ceskoslovenska obchodni banka, a.s.	1.23	1.60	1.20	1.50	1.38	6
GE Money Bank, a.s.	3.07	3.18	2.32	2.77	2.84	1
J&T Banka, a.s.	0.75	0.76	0.62	0.48	0.65	14
Komercni banka, a.s.	1.78	1.93	1.58	1.91	1.80	2
LBBW Banka, a.s.	0.40	0.26	-2.59	0.05	-0.47	18
Postovni Sporitelna, a.s.	1.23	1.60	1.20	1.50	1.38	6
PPF Banka, a.s.	1.84	1.71	1.72	1.30	1.64	3
Raiffeisenbank, a.s.	0.74	0.96	1.10	0.97	0.94	11
Unicredit Bank Czech Republic, a.s	1.30	1.80	1.00	1.10	1.30	9
Volksbank, a.s.	1.06	0.81	0.37	1.12	0.84	13
Hypotecni Banka, a.s.	0.98	1.01	0.93	0.56	0.87	12
Modra pyramida stavebni sporitelna, a.s.	1.45	1.60	1.30	1.60	1.49	5
Ceskomoravska stavebni sporitelna, a.s.	0.87	0.98	1.07	1.23	1.04	10
Wustenrot-stavebni sporitelna, a.s.	0.49	0.67	0.83	0.72	0.68	15
Wustenrot hypotecni banka, a.s.	0.10	0.20	0.20	0.70	0.30	16
Maximum	3.07	3.18	2.32	2.77		
Minimum	0.10	0.20	-2.59	0.05		
Median	1.15	1.10	1.09	1.18		
Mean	1.15	1.26	0.87	1.13		
Standard deviation	0.70	0.73	1.01	0.65		

Table 11. Return on Assets

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Return on equity (ROE)

Table 12 shows that the top five banks in terms of ROE are PPF Banka, Ceskomoravska stavebni sporitelna, Modra pyramida stavebni sporitelna, Ceska sporitelna and Komercni banka. The three banks which have the lowest ROE are Ceska exportni banka, Wustenrot hypotecni banka and LBBW Banka. In addition, 5 banks out of 18 reported a highly profitable ROE of over 20%, which at a time when regulators require banks to hold more equity, is a high number (see also Figure 3 in Appendix II), (Banks need to look past ROE on profitability, 2011).

Similar to the results of ROA, the outcomes in Table 7 show that most of the larger banks achieve higher ROAs than the smaller banks. These observations can signify that larger banks pay more attention to shareholder earnings (Yung, 2009). The average ROEs in the period 2007-2010 are 15.3%, 16.7%, 13.8% and 14.4% respectively for each year; Figure 4 in Appendix II displays the

average value line with a standard deviation plus and minus interval of two. The minimum ROEs in the same period are 1%, 2%, -25% and 2%.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	24	26	20	18	22	4
Ceska exportni banka, a.s.	3	7	3	2	4	16
Ceskomoravska zarucni a rozvojova banka, a.s.	2	18	19	19	15	12
Ceskoslovenska obchodni banka, a.s.	18	18	22	17	19	7
GE Money Bank, a.s.	20	14	16	15	16	10
J&T Banka, a.s.	8	8	8	6	8	14
Komercni banka, a.s.	23	24	17	19	21	5
LBBW Banka, a.s.	4	2	-25	10	-2	18
Postovni Sporitelna, a.s.	18	22	17	20	19	6
PPF Banka, a.s.	36	27	32	21	29	1
Raiffeisenbank, a.s.	17	19	20	14	18	9
Unicredit Bank Czech Republic, a.s	15	20	10	10	14	11
Volksbank, a.s.	12	8	4	5	7	15
Hypotecni Banka, a.s.	9	8	8	10	9	13
Modra pyramida stavebni sporitelna, a.s.	24	28	28	28	27	3
Ceskomoravska stavebni sporitelna, a.s.	27	28	28	29	28	2
Wustenrot-stavebni sporitelna, a.s.	15	21	21	15	18	8
Wustenrot hypotecni banka, a.s.	1	2	2	2	2	17
Maximum	36	28	32	29		
Minimum	1	2	-25	2		
Median	16	18	17	15		
Mean	15	16	13	14		
Standard deviation	9	8	13	7		

Table 12. Return on equity

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Cost to revenue ratio (CTR)

Table 13 presents information on the CTRs; the five banks, which have achieved the most satisfatory results are Unicredit Bank Czech Republic, Komercni banka, GE Money Bank, PPF Banka, and Ceskoslovenska obchodni banka. The minimum CTRs in the period from 2007 to 2010 are 28%, 35%, 38% and 34%. Moreover, during the period 2007 to 2010, 9 out of 18 banks had their average cost to revenue ratio below 50%, which is considered as a strong economic result for the bank (Tripe, 2000). None of the banks went over 70% during the same period. The average CTRs in same period are 49%, 49%, 52% and 52% respectively for each year.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	50	45	42	41	45	6
Ceska exportni banka, a.s.	76	76	39	61	63	17
Ceskomoravska zarucni a rozvojova banka, a.s.	55	54	85	80	69	18
Ceskoslovenska obchodni banka, a.s.	44	46	43	44	44	5
GE Money Bank, a.s.	28	45	38	64	44	3
J&T Banka, a.s.	53	60	49	48	53	11
Komercni banka, a.s.	45	42	42	39	42	2
LBBW Banka, a.s.	41	43	58	54	49	9
Postovni Sporitelna, a.s.	48	46	43	44	45	8
PPF Banka, a.s.	38	35	56	47	44	4
Raiffeisenbank, a.s.	55	42	40	42	45	7
Unicredit Bank Czech Republic, a.s	35	44	42	34	39	1
Volksbank, a.s.	54	56	53	54	54	13
Hypotecni Banka, a.s.	57	64	64	60	61	16
Modra pyramida stavebni sporitelna, a.s.	67	60	55	53	59	14
Ceskomoravska stavebni sporitelna, a.s.	49	49	53	61	53	12
Wustenrot-stavebni sporitelna, a.s.	51	38	62	55	52	10
Wustenrot hypotecni banka, a.s.	38	49	79	72	60	15
Maximum	76	76	85	80		
Minimum	28	35	38	34		
Median	49	46	51	53		
Mean	49	49	52	52		
Standard deviation	11	10	13	11		

Table 13. Cost to revenue ratio

Source: (2007-2010) Annual reports of banks in the Czech Republic.

8.1.2 Bank Risk

Loan to deposit ratio (LTD)

The loan to deposit ratio is used to report the financial stability of a bank (Melone, 2011). The three banks with the lowest LTDs are Modra pyramida stavebni sporitelna, Hypotecni Banka and Wustenrot hypotecni banka, which indicates that these banks are not providing excessive loans and they retain substantial amount of liquid assets or deposits. From Table 14, the five banks, which have the highest LTDs are GE Money Bank, J&T Banka, Raiffeisenbank, Ceskomoravska zarucni a rozvojova banka and Wustenrot-stavebni sporitelna. Furthermore, two banks recorded their LTD over 80%. This means that these banks are taking more risks, since higher values of LTD indicate the potential source of illiquidity and insolvency.

However it is important to state, that ratios around 70 and 80% are still considered as satisfactory values (Melone, 2011). In addition, during the period 2007-2010, 8 out of 17 banks had their average LTDs above 70%, which is considered as a robust percentage in the European Union (Cienski, 2011). The average value line of LTDs in the 2007-2010 period is presented in Figure 5 in the Appendix II and the values are 64%, 67%, 66% and 67%, which shows that banks remained stable during the financial crisis.

		2000	2000	3010		БТ
Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	71	71	72	69	71	6
Ceska exportni banka, a.s.	69	70	68	68	69	9
Ceskomoravska zarucni a rozvojova banka, a.s.	84	58	77	77	74	4
Ceskoslovenska obchodni banka, a.s.	68	75	71	68	71	7
GE Money Bank, a.s.	84	81	88	83	84	1
J&T Banka, a.s.	86	83	78	76	81	2
Komercni banka, a.s.	56	65	62	71	64	11
LBBW Banka, a.s.	68	71	63	64	67	10
Postovni Sporitelna, a.s.	68	75	71	68	71	7
PPF Banka, a.s.	70	60	44	50	56	14
Raiffeisenbank, a.s.	81	75	74	73	76	3
Unicredit Bank Czech Republic, a.s	68	65	59	60	63	12
Volksbank, a.s.	56	65	62	65	62	13
Hypotecni Banka, a.s.	30	40	40	30	35	16
Modra pyramida stavebni sporitelna, a.s.	30	58	65	70	56	15
Wustenrot-stavebni sporitelna, a.s.	53	68	79	88	72	5
Wustenrot hypotecni banka, a.s.	40	60	40	55	49	17
Maximum	86	83	88	88		
Minimum	30	40	40	30		
Median	68	68	68	68		
Mean	64	67	66	67		
Standard deviation	17	10	14	13		

Table 14. Loan to deposit ratio

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Capital adequacy (CA)

From Table 15, the five banks with the highest CAs are Ceska exportni banka, Hypotecni Banka, GE Money Bank, Ceskomoravska zarucni a rozvojova banka and Ceskomoravska stavebni sporitelna. The CA ratio should not be below 8% (Eubanks, 2010). If we look at the CA values during the 2007-2010 period in the Czech Republic, there is no significant evidence of a trend towards the 8% threshold, which is illustrated by the individual cross sectional graphs (see Figure

6 in the Appendix II), (Larson, 2011). The three banks, which have the lowest CAs are Modra pyramida stavebni sporitelna, Raiffeisenbank and Wustenrot-stavebni sporitelna. This indicates that these banks might be more vulnerable to risks such as credit risk, operational risk or market risk.

Nevertheless, the CAs are still above the 8% limit. The averages over the same period are 15.1%, 15.5%, 16.1% and 17.3%. These results show that the rate of CA is increasing over the period and this indicates a stability of the Czech banking sector and that depositors and investors have some level of protection from possible economic downturns.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	9	10	12	14	11,3	13
Ceska exportni banka, a.s.	50	32	41	54	44,3	1
Ceskomoravska zarucni a rozvojova banka, a.s.	20	16	15	16	16,8	4
Ceskoslovenska obchodni banka, a.s.	11	9	12	17	12,3	11
GE Money Bank, a.s.	22	20	17	15	18,5	3
J&T Banka, a.s.	11	10	12	12	11,3	13
Komercni banka, a.s.	10	12	14	15	12,8	10
LBBW Banka, a.s.	14	14	13	15	14,0	6
Postovni Sporitelna, a.s.	11	10	15	18	13,5	8
PPF Banka, a.s.	13	11	10	11	11,3	13
Raiffeisenbank, a.s.	9	11	11	10	10,3	17
Unicredit Bank Czech Republic, a.s	10	10	13	14	11,8	12
Volksbank, a.s.	13	14	15	14	14,0	6
Hypotecni Banka, a.s.	23	49	40	39	37,8	2
Modra pyramida stavebni sporitelna, a.s.	8	10	11	13	10,5	16
Ceskomoravska stavebni sporitelna, a.s.	12	17	14	15	14,5	5
Wustenrot-stavebni sporitelna, a.s.	9	10	11	9	9,8	18
Wustenrot hypotecni banka, a.s.	17	14	12	10	13,3	9
Maximum						
Minimum	8.0	9.0	10.0	9.0		
Median	11.5	11.5	13.0	14.5		
Mean	15.1	15.5	16.1	17.3		
Standard deviation	9.8	10.0	9.1	14.5		

Table 15. Capital adequacy

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Provision to loans ratio (Coverage)

The recommended provision to loans ratio is between 3 to 8 %; higher percentages indicate a superior position of the bank to cover its possible losses (Pain, 2003). The Table 16 shows that the five banks with the highest provisions to loans ratio are Ceskomoravska zarucni a rozvojova banka, LBBW Banka, Wustenrot hypotecni banka, Wustenrot-stavebni sporitelna and Ceska exportni banka. The three banks with the lowest allowance to cover its losses are Unicredit Bank Czech Republic, Ceskoslovenska obchodni banka and Ceska sporitelna. During the period 2007-2010 the average values of the provisions to loans ratio have grown from 3.3%, 3.8%, 4.6% to 4.9%.

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Bank	2007	2008	2009	2010	Average	Rank	
Ceska sporitelna, a.s.	2.3	2.2	3.0	4.1	2.90	17	
Ceska exportni banka, a.s.	3.9	6.6	4.0	4.7	4.80	5	
Ceskomoravska zarucni a rozvojova banka, a.s.	4.6	4.6	6.3	7.5	5.75	1	
Ceskoslovenska obchodni banka, a.s.	2.4	2.5	2.5	3.0	2.60	16	
GE Money Bank, a.s.	2.7	2.3	5.0	6.1	4.03	10	
J&T Banka, a.s.	3.1	3.8	6.5	4.8	4.55	7	
Komercni banka, a.s.	3.3	3.5	3.8	3.9	3.61	11	
LBBW Banka, a.s.	3.3	4.3	7.5	7.3	5.60	2	
Postovni Sporitelna, a.s.	3.4	3.5	3.5	4.0	3.60	12	
PPF Banka, a.s.	2.9	3.2	5.3	7.2	4.65	6	
Raiffeisenbank, a.s.	3.2	3.7	3.5	3.8	3.54	13	
Unicredit Bank Czech Republic, a.s	2.8	3.0	3.2	3.7	3.18	15	
Volksbank, a.s.	2.8	3.3	3.8	3.0	3.23	14	
Hypotecni Banka, a.s.	3.4	3.9	4.2	4.6	4.04	9	
Modra pyramida stavebni sporitelna, a.s.	4.0	3.6	4.0	5.3	4.23	8	
Wustenrot-stavebni sporitelna, a.s.	4.2	4.7	6.5	5.6	5.25	4	
Wustenrot hypotecni banka, a.s.	4.1	5.8	6.5	5.8	5.55	3	
Maximum	4.6	6.6	7.5	7.5			
Minimum	2.3	2.2	2.5	3.0			
Median	3.3	3.6	4.0	4.7			
Mean	3.3	3.8	4.6	4.9			
Standard deviation	0.7	1.2	1.5	1.4			

Table 16. Provision to loans ratio

Non-performing loan ratio (NPL)

Table 17 indicates that the five banks with the lowest NPL ratio are Ceskoslovenska obchodni banka, Ceska sporitelna, Unicredit Bank Czech Republic, Ceska exportni banka and LBBW

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Banka. During the 2007-2010 period the minimum NPLs were 2.9%, 3.1%, 2.5% and 5.1%. On the other hand the three banks with the highest NPL ratio (that means having higher losses) are Volksbank, Ceskomoravska zarucni a rozvojova banka and Wustenrot hypotecni banka.

Furthermore, Figure 7 in Appendix II depicts the average value line over the 2007-2010 period. The values show an increase over the years in most of the banks, which is demonstrated by the increasing average values—3.5%, 4.5%, 5.9% and 7.7% for the respective years.

However, the increase has not been significant. A similar trend appears in other European countries such as Greece, Spain, Portugal or Ukraine. It also seems that larger banks have more favourable non-performing loans management (Ernst & Young, 2011).

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	3.1	3.7	4.7	5.9	4.4	2
Ceska exportni banka, a.s.	3.4	3.6	5.3	6.6	4.7	4
Ceskomoravska zarucni a rozvojova banka, a.s.	3.3	5.2	6.9	9.7	6.3	16
Ceskoslovenska obchodni banka, a.s.	2.9	3.1	2.5	5.1	3.4	1
GE Money Bank, a.s.	3.8	4.4	5.9	7.5	5.4	9
J&T Banka, a.s.	3.7	4.5	6.7	8.8	5.9	11
Komercni banka, a.s.	3.1	4.5	6.1	8.2	5.5	10
LBBW Banka, a.s.	3.1	4.1	5.9	6.9	5.0	5
Postovni Sporitelna, a.s.	3.6	5.2	7.1	8.7	6.2	14
PPF Banka, a.s.	3.1	4.7	5.6	6.8	5.1	6
Raiffeisenbank, a.s.	3.4	4.8	5.4	7.2	5.2	8
Unicredit Bank Czech Republic, a.s	3.5	4.1	5.1	5.8	4.6	3
Volksbank, a.s.	4.2	5.4	7.2	8.2	6.3	15
Hypotecni Banka, a.s.	3.0	4.1	5.7	7.4	5.1	6
Modra pyramida stavebni sporitelna, a.s.	3.8	4.9	6.7	8.7	6.0	13
Wustenrot-stavebni sporitelna, a.s.	3.3	4.9	6.6	9.1	6.0	12
Wustenrot hypotecni banka, a.s.	4.4	5.8	6.9	9.8	6.7	17
Maximum	4.4	5.8	7.2	9.8		
Minimum	2.9	3.1	2.5	5.1		
Median	3.4	4.5	5.9	7.5		
Mean	3.5	4.5	5.9	7.7		
Standard deviation	0.4	0.7	1.1	1.4		

Table 17. Non-performing loan ratio

Source: (2007-2010) Annual reports of banks in the Czech Republic.

8.1.3 Corporate Governance

The largest shareholder (Ownership)

Overall the Czech banking sector is characterised by foreign ownership of the banks. The reported share of foreign ownership in the Czech banking sector in 2010 was 79.2%. The following Table 18 provides information on the ownership share of the largest shareholder. The evidence shows that the ownership structure in the Czech banking sector is concentrated. More specifically, all of the 18 banks in the sample have their largest shareholder with an ownership share of 50% or more. The average values in the period 2007-2009 are 85%, 86%, 83% and 87% for each year respectively. The concentration ownership forms two different opinions regarding the risk of banks. The first opinion is that banks with higher ownership concentration have lower insolvency risk, lower asset risk and more effective monitoring of its managers. In contrast, under this opinion, the view is that a dispersed ownership creates free-riding problems and adequate monitoring of managers is more difficult. On the other hand, the second opinion is that concentrated ownership of banks is associated with higher risk taking; powerful owners are taking higher risks, because they have substantial cash flow and power and therefore have incentives to induce bank's mangers to increase risk taking (Laeven & Levine, 2008; Shehzad et al., 2009). It seems that the Czech banking sector represents the case of the first opinion, because during the finacial crisis the banking sector remained stable.

Bank	2007	2008	2009	2010	Average
Ceska sporitelna, a.s.	98	98	98	98	98
Ceska exportni banka, a.s.	73	75	73	80	75
Ceskomoravska zarucni a rozvojova banka, a.s.	72	72	72	72	72
Ceskoslovenska obchodni banka, a.s.	97	100	100	100	99
GE Money Bank, a.s.	100	100	100	100	100
J&T Banka, a.s.	100	100	100	100	100
Komercni banka, a.s.	60	60	60	60	60
LBBW Banka, a.s.	100	100	40	100	85
Postovni Sporitelna, a.s.	97	100	100	100	99
PPF Banka, a.s.	92	92	92	92	92
Raiffeisenbank, a.s.	51	51	51	51	51
Unicredit Bank Czech Republic, a.s	100	100	100	100	100
Volksbank, a.s.	98	98	98	100	99
Hypotecni Banka, a.s.	99	100	100	100	100
Modra pyramida stavebni sporitelna, a.s.	100	100	100	100	100
Ceskomoravska stavebni sporitelna, a.s.	55	55	55	55	55
Wustenrot-stavebni sporitelna, a.s.	52	55	55	55	54
Wustenrot hypotecni banka, a.s.	90	90	100	99	95
Maximum	100	100	100	100	
Minimum	51	51	40	51	
Median	85	86	83	87	
Mean	97	98	98	99	
Standard deviation	18	18	21	19	

Table 18. The largest shareholder

Supervisory board—number of independent members (Independent)

The Czech banks' annual reports show that the average size of the supervisory board is 7.5 members. Table 19 states the number of independent members in the relevant supervisory boards. As explained earlier, independent members are members who are not related to management or to shareholders or who do not work for the company or its subsidiary or holding company (Ministry of Finance, 2012).

It appears that all banks have their supervisory board composed in a similar way. The average numbers of independent supervisory board members in the period from 2007 to 2010 are 2.28, 2.33, 2.28 and 2.28 for each year respectively, which shows that almost 25% of supervisory board members are independent and this is consistent with the suggestion of Ministry of Finance (2012).

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Bank	2007	2008	2009	2010	Average
Ceska sporitelna, a.s.	4	3	3	3	3.25
Ceska exportni banka, a.s.	2	2	2	2	2.00
Ceskomoravska zarucni a rozvojova banka, a.s.	2	2	2	2	2.00
Ceskoslovenska obchodni banka, a.s.	2	2	2	2	2.00
GE Money Bank, a.s.	2	3	3	3	2.75
J&T Banka, a.s.	1	1	1	1	1.00
Komercni banka, a.s.	2	2	2	2	2.00
LBBW Banka, a.s.	3	3	3	3	3.00
Postovni Sporitelna, a.s.	4	4	3	3	3.50
PPF Banka, a.s.	2	3	3	3	2.75
Raiffeisenbank, a.s.	2	2	2	2	2.00
Unicredit Bank Czech Republic, a.s	3	3	3	3	3.00
Volksbank, a.s.	2	2	2	2	2.00
Hypotecni Banka, a.s.	2	2	2	2	2.00
Modra pyramida stavebni sporitelna, a.s.	2	2	2	2	2.00
Ceskomoravska stavebni sporitelna, a.s.	2	2	2	2	2.00
Wustenrot-stavebni sporitelna, a.s.	2	2	2	2	2.00
Wustenrot hypotecni banka, a.s.	2	2	2	2	2.00
Maximum	4.00	4.00	3.00	3.00	
Minimum	1.00	1.00	1.00	1.00	
Median	2.00	2.00	2.00	2.00	
Mean	2.28	2.33	2.28	2.28	
Standard deviation	0.75	0.69	0.57	0.57	

Table 19. Supervisory board

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Management board—bonuses (Bonus)

The Table 20 represents management board bonuses. This variable is measured as the ratio of total amount of bonuses given to the total managerial pay. As table shows the five banks with the highest bonuses paid out to their managers are Ceska sporitelna, a.s., Raiffeisenbank, a.s., Hypotecni Banka, a.s., Volksbank, a.s. and Ceska exportni banka, a.s. Still, the average values show that the bonuses paid out by the banks are still only around 25% of the managerial pay and this is considered as a prudent remuneration practice (FSB, 2010). The exact values are 30%, 30%, 20% and 20% for respective years. In addition, 12 out of 17 banks lowered their bonuses in years 2008 and 2009. This indicates that even the Czech banking sector remained stable during the crisis, banks realized the potential danger of high bonuses paid out to their managers. For further analysis of the remuneration system in the Czech banks, it would be also important to see how

banks implemented CEBS's *Guidelines on remuneration policies and practices*, which are presented in more detail in section 5.2. However this is not relevant for this paper since the researched period of this study is from 2007-2010 and the guidelines were issued in 2011.

Bank	2007	2008	2009	2010	Average	Rank
Ceska sporitelna, a.s.	0.6	0.5	0.4	0.5	0.5	1
Ceska exportni banka, a.s.	0.5	0.4	0.3	0.1	0.3	5
Ceskomoravska zarucni a rozvojova banka, a.s.	0.1	0.1	0.2	0.1	0.1	14
Ceskoslovenska obchodni banka, a.s.	0.2	0.5	0.1	0.2	0.2	9
GE Money Bank, a.s.	0.2	0.0	0.0	0.1	0.1	18
J&T Banka, a.s.	0.8	0.1	0.1	0.1	0.3	6
Komercni banka, a.s.	0.3	0.2	0.1	0.2	0.2	13
LBBW Banka, a.s.	0.4	0.3	0.3	0.3	0.3	6
Postovni Sporitelna, a.s.	0.2	0.4	0.2	0.2	0.2	8
PPF Banka, a.s.	0.3	0.2	0.1	0.2	0.2	10
Raiffeisenbank, a.s.	0.5	0.8	0.3	0.0	0.4	2
Unicredit Bank Czech Republic, a.s	0.1	0.2	0.1	0.1	0.1	15
Volksbank, a.s.	0.2	0.4	0.3	0.4	0.3	4
Hypotecni Banka, a.s.	0.5	0.5	0.2	0.3	0.4	3
Modra pyramida stavebni sporitelna, a.s.	0.4	0.2	0.1	0.3	0.2	11
Ceskomoravska stavebni sporitelna, a.s.	0.1	0.2	0.2	0.2	0.2	12
Wustenrot-stavebni sporitelna, a.s.	0.1	0.1	0.1	0.2	0.1	15
Wustenrot hypotecni banka, a.s.	0.1	0.1	0.1	0.1	0.1	17
Maximum	0.8	0.8	0.3	0.5		
Minimum	0.1	0.0	0.0	0.0		
Median	0.2	0.2	0.1	0.1		
Mean	0.3	0.3	0.2	0.2		
Standard deviation	0.2	0.2	0.1	0.1		

Table 20. Management board—bonuses

Audit committee and external audit

Since the financial crisis and the accounting scandals, for example in Lloyds Banking Group and Anglo Irish Bank, the importance of having an audit committee in the bank has risen. It is shown in the annual reports of Czech banks, that the banks have an interest in establishing audit committees.

As Table 21 shows, in the period from 2007 to 2010 the number of banks with audit committee increased from 9 to 15, this means that banks learned from accounting scandals and increased

Source: (2007-2010) Annual reports of banks in the Czech Republic.

their interest in earnings management. In 2010 there were just three banks left without an audit committee from the chosen sample of banks (Zhou & Chen, 2004).

As Table 22 demonstrates, the companies which were appointed over the same period as external auditors are Ernst & Young Audit (present in 7 banks), KPMG (5 banks), Delloite Audit (4 banks) and PricewaterhouseCoopers (2 banks). This indicates a consistent relationship between the bank and its external auditor and for the external auditor better credibility of its activities.

Committee	2007	2008	2009	2010
Presence of audit committee	9	8	13	15
No presence of audit committee	9	10	5	3

Source: (2007-2010) Annual reports of banks in the Czech Republic.

External Audit	Count
Ernst & Young Audit s.r.o.	7
Delloite Audit s.r.o.	4
Pricewaterhousecoopers Audit s.r.o.	2
KPMG	5

Table 22	. External	audit
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Source: (2007-2010) Annual reports of banks in the Czech Republic.

Risk committee

As written in the previous section, the Czech banking sector overcame the financial crisis without any major problems and it remained strong. Therefore the robustness of the banking sector could be one of the reasons why some banks in the Czech Republic do not establish a risk committee (Table 23). The number of risk committees in the selected Czech banks remained the same over the 2007-2010 period.

Table 23. Risk committee

Committee	2007	2008	2009	2010
Presence of risk committee	6	6	6	6
No presence of risk committee	12	12	12	12

Source: (2007-2010) Annual reports of banks in the Czech Republic.

Compensation committee

As is the case with risk committees, the number of compensation committees in the same group of Czech banks remained constant over the 2007-2010 period. The information gathered from the annual reports shows that 5 banks out of 13 have established a compensation committee which is also illustrated in Table 24. The explanation for this may also lie with the Czech Republic's strong position during the financial crisis or that compensation policies are discussed sufficiently and adequately by the supervisory board without the necessity of establishing a separate compensation committee.

	••••••			
Committee	2007	2008	2009	2010
Presence of compensation committee	4	5	5	5
No presence of compensation committee	14	13	13	13
S = = = (2007, 2010) A = = = = = = = = = = = = = = = = = =	In the de	$C_{}$)	

Table 24. Compensation committee

Source: (2007-2010) Annual reports of banks in the Czech Republic.

8.2 Panel regression analysis

The thesis' econometric model is the panel regression model with period fixed effects. It is applied to test the impact of corporate governance on bank performance as well as bank riskiness. The variables that are used to represent corporate governance are *Audit, Risk, Bonus, MBeducation, Ownership, SBeducation* and *Independent*, and to represent bank performance are *NII, ROA* and *ROE*, bank risk variables include *CA, LTD, Coverage* and *NPL* and lastly a control variable *Size* (variables are explained in detail in section 7.4.). The regression models are presented in Table 25 and 26 at the end of this section. It is important to state that regression models treat the data as pooled observations, thus assuming that the residuals are not correlated neither across different time periods nor across different banks during the same or different period. In other words observations are not serially correlated. Next, the period fixed effect model assumes that coefficients are the same for all the banks and intercepts differ due to period fixed effects for each given year. In other words, the model assumes that banks follow the same path, but the path varies with respect to a specific year.

The significance of the coefficients is judged by the t-statistic (at 5%), the significant coefficients are marked with (*) and the coefficients and t-statistics are presented in the following way (coefficient, t-statistic) throughout the text. Moreover, the overall significance of the models is judged by F-statistic (at 5%). The results proved to be complicated to interpret, therefore the interpretation concentrates on the sign of the relationship among the variables.
8.2.1 Bank Performance

In order to investigate the impact of corporate governance on bank performance, the hypotheses (1), (2), (4), (5), (7) and (8) shown in section 6.2 are tested by models (1), (2) and (3). In the regression models *NII*, *ROE* and *ROA* are used as dependent variables and *Bonus*, *MBeducation*, *Ownership*, *SBeducation*, *Independent*, *CA*, *LTD*, *Coverage NPL* and *Size* as independent variables. The results are illustrated in Table 25.

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
variable	Coefficient	t-Statistic	Coefficient	t-statistic	Coefficient	t-statistic
Dependent/(model)	<i>NII</i> /(1)		<i>ROE</i> /(2)		<i>ROA</i> /(3)	
Independent						
С	-0.008	-0.150	-0.161	-0.506	-2.538	-0.898
Bonus	-0.006	-0.838	-0.072	-1.092	-1.235*	-2.446
MBeducation	-0.006	-0.592	-0.112*	-2.633	-0.908	-2.357
Ownership	0.020*	2.086	0.014	0.234	1.027*	2.024
SBeducation	-0.004	-0.057			-0.301	-0.835
Independent	0.002	0.606				
Size	0.001	1.193	0.027*	2.690	0.283*	3.790
Coverage			-0.013	-1.132	-0.113	-1.292
CA	-0.029*	-1.752				
LTD						
NPL						
R-Squared	0.187		0.282		0.464	
F-Statistic	1.290		2.856		5.101*	
Fixed effect						
2007	-0.001049		0.006885		0.112720	
2008	0.000943		0.013671		0.147690	
2009	-0.000626		-0.018012		-0.277392	
2010	0.000778		-0.002702		0.018114	

Table 25. Regression models 1-3

* statistically significant at 5%.

Model (1) regresses net interest income (*NII*) on bank's corporate governance (*Bonus*, *MBeducation*, *Ownership*, *SBeducation*, *Independent*) controlling for *Size* and *CA*. The regression shows that management board bonus (*Bonus*), management board members' education (*MBeducation*), supervisory board members' education (*SBeducation*) and the number of independent members on the supervisory board (*Independent*) have no statistical relationship with a bank's performance measured as net interest income. However, the largest shareholder (*Ownership*) has a significant positive coefficient (0.020^* , 2.086). This result indicates that when the share of largest shareholder increases, the bank's performance also increases. The control variable, risk-capital adequacy (*CA*), has a negative significant coefficient (-0.029^* , -1.752), which indicates that when the risk of a bank decreases its performance improves. On the other hand bank size (*Size*), the other control variable, is not statistically significant.

Model (2) runs a regression of return on equity (ROE) on bank's corporate governance (*Bonus*, *MBeducation* and *Ownership*), controlled by *Size* and *Coverage*. The results of this regression show that management bonus and largest shareholder have no statistical relationship with the bank's performance (ROE), while management board members' education has a significant negative coefficient (-0.112*, -2.633).

The result indicates that, if educational level of management boards decreases, the performance of banks increases. This counter-intuitive result could be driven by the low relevance of the educational levels variable, since most of the managers have master degree education and therefore the educational level variable lacks variation. The control variable, bank size, has a statistically positive coefficient (0.027*, 2.690) and this indicates that the larger the banks are, the better their performance will be. Whereas the risk of a bank measured by the provisions to total loans ratio variable (*Coverage*) has no statistical relationship with bank's performance.

The model (3) estimates a regression of return on assets (*ROA*) on bank's corporate governance (*Bonus, MBeducation, Ownership, SBeducation, Independent*), controlled by *Size* and *Coverage*. Results show that a management board bonus has a negative and significant coefficient (-1.235*, -2.446), which indicates that a decrease in management bonuses will lead to higher performance. Management board members' education has a negative and significant coefficient (-0.908*, -2.357). The limitations of this variable for the regression results are explained in the previous model. The largest shareholder shows a positive and significant coefficient (1.027*, 2.024), which illustrates that an increase in the share of ownership of largest shareholder leads to higher performance. The control variable bank size again shows a positive and significant coefficient (0.283*, 3.790), indicating that the larger the bank, the better performance there will be. On the other hand the variable bank risk-provisions to total loans ratio has no statistical relationship to the performance of a bank.

Summary

The empirical results show that ownership concentration has a positive influence on bank performance represented by two indicators (*NII* and *ROA*). Therefore, hypothesis (1) is supported by the empirical evidence and this result is also consistent with the presented literature, where Fama and Jensen (1983) together with Franks et al. (2001) claim that ownership concentration improves bank performance and also reduces agency conflicts. The bank size also shows a positive relationship to bank performance (*ROE* and *ROA*) which confirms hypothesis (2) and indicates that the larger the bank, the better performance there will be. One of the possible reasons for this might be that larger banks have better abilities to diversify different types of risk from the

investments and have more capital to improve technology, information and the management team of the bank and therefore minimize the possible losses of a bank (Yung, 2009). On the other hand, the results show no statistical relationship between supervisory board educational level and bank performance. This result does not confirm hypothesis (4) and is not consistent with Becht et al. (2012) and also with Hau and Thum (2009), who argue that lower educational level of supervisory board members pave the way to higher losses. But, as already mentioned, the descriptive statistics reveal that supervisory and management board members have in general very high education, and that the variability of this variable is low. Moreover, the number of independent supervisory board members do not affect bank performance. In all three models the results were insignificant, thus hypothesis (8) is not proved by the empirical evidence. However, this result is consistent with Bhagat and Black (2002) who claim that firms with more independent boards do not perform better than other firms, since inside directors are creating greater value, by being better informed than independent directors and therefore having superior strategic planning and decision-making ability or the fact that supervisory boards need independent directors who are not just independent of management but who are accountable to shareholders as well.

Management board educational level variable shows non-relevant results on two performance indicators (*ROE* and *ROA*). The reason for these poor results could be in the mentioned low variability of the indicator and in limited data availability. Large part of the annual reports of banks did not provide the data on the experience of the managers and in which area of education, the managers gained their degree. In addition, the managerial payment in the form of bonus, has no statistical relations to the performance of the bank and it is inconsistent with (Gehrig et al., 2009; Mishra & Nielsen, 2000). The explanation as data shows could be in the large differences in size of bonuses paid out to the managers, since Czech Republic is dominated by the 4 large banks—Ceska sporitelna, Ceskoslovenska obchodni banka, Komercni banka and Unicredit Bank Czech Republic. These banks have substantially higher bonuses than the smaller banks. Another possible reason could lie with the financial crisis, because in some banks the bonuses paid out after the crisis were minimal as the data indicates. As a result, the hypotheses (5) and (7) cannot be rejected or accepted, due to the limitations and variability in the collected data.

8.2.2 Bank Riskiness

In this part, the analysis investigates the impact of corporate governance on bank riskiness, the hypotheses (3), (6), (9), (10), (11), (12) shown in section 6.2 are tested by models (4), (5), (6) and (7). In the regression models *CA*, *LTD*, *Coverage* and *NPL* are used as dependent variables and *Audit*, *Risk*, *Bonus*, *MBeducation*, *Ownership*, *NII*, *ROE*, *ROA* and *Size* as independent variables. The results are presented in Table 26.

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Dependent/(model)	<i>CA</i> /(4)		LTD/(5)		<i>Coverage</i> /(6)		<i>NPL</i> /(7)	
Independent								
С	-0.919	-2.043	1.242	2.560	19.510	7.102	13.864	5.999
Audit	-0.043	-1.125	-0.087*	-2.454	-0.312	-1.052	0.080	0.376
Risk	0.069*	2.049	-0.139*	-4.155	0.241	0.839	-0.436*	-2.102
Bonus	0.045	0.710	-0.064	-0.695	-0.260	-0.338	0.249	0.419
MBeducation	0.238*	3.062	-0.078	-0.947	-0.183	-0.340		
Ownership	0.106	1.307	-0.045	-0.524	1.975*	2.900		
Size	0.031	0.026	0.006	0.483	0.500*	5.072	-0.493*	-6.073
NII	-3.651*	-3.190			-10.788	-1.189		
ROE			-0.083	-0.607				
ROA							0.420*	2.885
R-Squared	0.421		0.407		0.570		0.866	
F-Statistic	3.371*		2.869*		7.435*		38.804*	
Fixed effect								
2007	-0.023350		0.001865		-0.980207		-2.075074	
2008	0.015688		-0.001572		-0.402054		-0.894407	
2009	0.001475		-0.018324		0.488662		0.675204	
2010	0.009298		0.019233		0.949450		2.294277	

Table 26. Regression models 4-7

* statistically significant at 5%

Model (4) regresses capital adequacy (*CA*) on bank's corporate governance (*Audit, Risk, Bonus, MBeducation* and *Ownership*), controlled by *Size* and *NII*. The results illustrate that a presence of the audit committee (*Audit*), the management board bonus (*Bonus*) and the largest shareholder (*Ownership*) have no statistical relations to the bank risk measured by capital adequacy (*CA*). In contrast, the presence of the risk committee (*Risk*) has a significant positive coefficient (0.069*, 2.049), which means that the presence of a risk committee improves bank's capital adequacy, thus lowering bank risk. The management board members' education (*MBeducation*) coefficient has also a positive significant coefficient (0.238*, 3.062). This result is not consistent in other models and occurs only in model (4), as explained above problem could be in the low variability of the indicator and limited data availability. Hence, this result is not relevant in this model. The result of bank size (*Size*) is not statistically significant, whereas control performance variable net interest income has a negative significant coefficient (-3.651*, -3.190), which means that if bank performance decreases the capital adequacy increases and therefore there are lower risks for the bank.

Model (5) examines the impact of a bank's corporate governance (*Audit, Risk, Bonus, MBeducation* and *Ownership*) on bank risk measured by the loan to deposit ratio (*LTD*), controlled by *Size* and *ROE*. The results show that management board bonus, management board members' education and largest shareholder have no statistical relations to bank riskiness. In addition, the presence of audit committee shows a significant negative coefficient (-0.087*, - 2.454). The interpretation of this result is that a presence of an audit committee decreases *LTD*, thus bank risk is lower. The presence of a risk committee has a negative significant coefficient (-0.139*, -4.155) which indicates a decrease in *LTD* and therefore better risk management. Control variables are not statistically relevant in this model; therefore the relationship cannot be determined.

Model (6) regresses provisions to total loans ratio (*Coverage*) on bank's corporate governance (*Audit, Risk, Bonus, MBeducation* and *Ownership*), controlled by *Size* and *NII*. The results demonstrate that a presence of an audit committee, presence of a risk committee, management board bonus and management board members' education have no statistical relationship to bank riskiness. On the other hand, the largest shareholder has a significant positive coefficient (1.975*, 2.900). This result suggests that an increase in share of ownership of the largest shareholder leads to higher provisions to total loans ratio, thus the risk of a bank is lower. Control variable for bank size has also a positive relationship (0.500*, 5.072), meaning that an increase in size of a bank leads to lower bank risk, while variable for performance measured by *NII* is not statistically significant.

Lastly, model (7) estimates a regression of non-performing loans ratio (*NPL*) on a bank's corporate governance (*Audit, Risk* and *Bonus*). The results illustrate that a presence of an audit committee and management board bonus have no statistical relationship to bank riskiness. However, the presence of a risk committee has a statistically significant negative coefficient (-0.436^* , -2.102), which means that the presence of a risk committee decreases the non-performing loans ratio and this indicates that the bank is taking lower risks. The control variable for bank size has a significant negative coefficient (-0.493^* , -6.073), which means that a decrease in the bank size will increase the *NPL* ratio and therefore increase the bank risk. On the other hand, the control variable for performance (*ROA*) has a significant positive coefficient (0.420^* , 2.885) which indicates that an increase in bank performance leads to higher risks for the bank.

Summary

The empirical results show that the presence of a risk committee can significantly mitigate bank riskiness. To be more precise, when a risk committee has been established, the risk of a bank measured by capital adequacy and loan to deposit ratio is lower. In addition, when a risk committee is present, the non-performing loans ratio decreases and therefore lowers the bank risk. In other words the presence of a risk committee has a positive influence on monitoring the risks and helps to identify the risks and thus improves the risk management of a bank. Furthermore, the presence of an audit committee lowers the loan to deposit ratio, thus the bank risk is lower. This indicates that banks with audit committees have superior internal control (Zhou & Chen, 2004) and, together with the risk committee, they improve the risk management of a bank. These results prove hypotheses (6) and (10) plus they are also consistent with (Collier & Zaman, 2005; Ellul & Yerramilli 2011; Hutchison & Tao 2012) together with (Zhou & Chen, 2004). The ownership variable illustrates that, if the share of ownership of the largest shareholder increases, the provision to total loans ratio increases. This can be explained by the presumption that powerful owners have a greater ability to monitor a bank's managers than is the case with dispersed ownership and this results in managers having less incentives to take higher risks. Put differently, higher ownership concentration leads to better risk management and therefore this empirical result supports hypothesis (9) and is consistent with the presented results of Riewsathirathorn et al. (2011). The managerial bonus paid to management board members shows no influence on the risk of a bank. These results shows inconsistency with the literature, since Bechmann and Raabale (2010) argue that incentive-based compensation does lead to excessive risk-taking.

As written above, the possible explanation lies in large differences in the size of the bonuses paid out to managers in the Czech Republic and also that the financial crisis caused some banks to pay out a minimal number of bonuses after the crisis emerged. Thus, hypothesis (12) cannot be rejected or accepted, due to the limitations and variability in the collected data. Interestingly, bank size increases the provisions to loan ratio and decreases the non-performing loans ratio, which means that the larger the bank is, the lower the risk is. Therefore hypothesis (3) is confirmed by the empirical evidence. The explanation could be that larger banks have a better ability to diversify risk from their investment. They also have additional capital to improve the monitoring of risk, hence having a better risk management (Yung, 2009).

CONCLUSION

There are many different opinions on the main causes of the recent global financial crisis. However, one of the main reasons was in general the poor corporate governance. Weaknesses were seen in board composition, especially in the lack of experience of board members, in the levels of board independency and also the roles of audit and risk committees were seen as insufficient. Moreover, an additional cause was seen in poor risk management, where corporate governance practices failed and where key principles of monitoring and managing risks had been neglected. Finally, the misuse of the compensation system was another reason. In particular, setting easy-to-meet targets and single year bonuses encouraged individuals to undertake excessive risks and resulted in the failure of many large financial institutions.

Nevertheless, the banks in the Czech Republic remained stable during the financial crisis and banks did not require financial support from the Czech National Bank nor from the government. The reasons for the stability of the Czech banking sector are in high levels of deposits, a less developed mortgage market and the fact that many banks are not members of the global financial groups. In order to examine corporate governance in the Czech banking sector, two objectives are formulated in the paper. The first objective is to show how banks in the Czech Republic use their corporate governance practices to support their performance and the second objective is to identify, which corporate governance mechanisms affect bank risk.

The paragraphs set out below answer the following research questions by summarizing the main findings of the analysis: (1) How does a bank's corporate governance affect its performance? and (2) How does a bank's corporate governance affect its riskiness?

The empirical results of the affect of a bank's corporate governance on its performance do not convince but they illustrate the importance of corporate governance on bank performance. The results for ownership concentration show that there is better performance for banks with higher concentration ownership. This is because concentrated ownership helps to mitigate agency conflicts between managers and shareholders. Controlling shareholders are motivated to monitor managers and therefore improve the bank's performance. Findings also show that bank size is

positively related to bank performance, which indicates that the larger the bank is the better performance it has. This can be explained by banks having more capital to improve their technology, information and management team, thus creating a potential for higher performance. Questionably, the number of independent supervisory board members does not affect bank performance. Hence, banks with more independent boards do not perform better than other firms, since for instance inside directors are better informed than independent directors and therefore have superior strategic planning and decision making ability or the fact that supervisory boards need independent directors who are not just independent of management but who are accountable to shareholders as well.

Nevertheless, most of the coefficients for the variables—educational level of supervisory board members, educational level of management board members, managerial payment in the form of bonus—were not statistically significant. As a result, it is not possible to provide confident conclusions on how these indicators affect bank performance. The possible explanations for the poor results for measuring the educational levels could be driven by the low relevance of the educational levels variable, since most of the managers have master degree education and therefore educational level variable lacked variation. In the case of managerial payment, the limitations could be in large differences in the levels of bonuses paid out to managers, since in the Czech Republic the 4 large banks—Ceska sporitelna, Ceskoslovenska obchodni banka, Komercni banka and Unicredit Bank Czech Republic have substantially higher bonuses than the smaller banks. The other possible reason could arise out of the recent global financial crisis, because as data indicated in some banks the bonuses paid out were minimal.

The paper concludes that corporate governance has a positive influence on bank risk. The presence of a risk committee leads to a lower bank risk. This is because the establishment of a risk committee improves monitoring of risks in bank's activities and its alignment with shareholders' interests. Therefore, the risk committee improves the risk management of a bank. The presence of an audit committee also lowers the bank's risk, since audit committees reinforce internal controls. In addition, they are associated with lower earnings management, and, together with risk committee, they have a positive influence on the risk management of a bank. Another result is that larger ownership concentration decreases bank risk. Powerful owners have a greater ability to monitor their managers as opposed to shareholders in a dispersed ownership structure. The result is that managers have fewer incentives to undertake higher risks. Next, bank size influences bank risk; larger banks have lower risks. This is explained by the fact that larger banks have a greater potential to diversify risks in their investments. Larger banks have additional capital to monitor risks, therefore they have superior risk management. The study shows that there is no statistically significant relationship between managerial bonuses paid to management board members and bank risk. Also the level of education of management board members shows non-relevant results.

The explanation for these unsatisfactory results are, as mentioned above, in the low variability of the measured indicator and in the limited data availability as well as in the large differences in the levels of bonuses paid out to managers by the banks. However, as the empirical evidence shows, the presence of audit and risk committees together with higher ownership concentration and larger banks, improve bank's risk management.

In conclusion, the master thesis attempts to add value to the studies on the Czech banking sector. In particular, it provides an insight for understanding which factors of corporate governance have an influence on bank performance and on bank risk. The corporate governance in the Czech Republic is still under development compared to other more advanced countries; however the banking sector in the recent years has made much progress to enhance its corporate governance. This is shown by banks adopting and implementing corporate governance principles and by having corporate governance institutions which are giving advice to companies on how to further reinforce their internal governance. Nevertheless, the topic of corporate governance deserves further attention, since the global financial crisis has shown that there are several weaknesses remaining in the corporate governance of banks.

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APPENDIXIES

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APPENDIX I

List of Abbreviations

Bank for International Settlements
Capital Adequacy ratio
Czech Bank association
Committee of European Banking Supervisors
Corporate Governance
Czech National Bank
Czech koruna
European Banking Authority
Economic and Financial Committee
Euro Interbank Offered Rate
European Union
Swiss Financial Market Supervisory Authority
Gross Domestic Product
International Finance Corporation
Loan To Deposit ratio
Management Board
Net Interest Income
Non-performing Loans ratio
Organization for Economic Co-operation and Development
Return On Assets
Return on Equity
Supervisory Board

APPENDIX II

Descriptive statistics



Figure 2. Individual cross-sectional graphs for ROE









Figure 5. Average value line for LTD





CA



Figure 7: Average value line for NPL



