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Institutional Changes in Financial Systems of Poland and the Czech Republic

Abstract

Over the past 23 years the financial sectors in both Poland and the Czech Republic have changed beyond recognition. The process of transformation was a tough and challenging task in both countries. There were significant differences in the initial conditions, as well as approaches to the transformation process, in Poland and the Czech Republic. It seems that according to the classification of Knell and Srholec (2005), the two countries represent different types of capitalism. In this article we try to demonstrate that the organization and development level of the financial systems in these seemingly similar countries are different as well. The primary objective of the study is to compare the path of development and today's performance of the financial systems in Poland and in the Czech Republic.

1. Introduction

At the end of the 1980s and the outset of the 1990s, transition economies embarked on a path towards democracy and a market economy. The reform packages comprised macroeconomic stabilization, liberalization, and the building of institutional underpinnings of a market economy. The financial

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systems had to be built almost from scratch, as under central planning they served as mechanisms for recording authorities' decisions. It seems that the development of financial systems followed an overall pattern of economic transformation. The most important reforms included: building a two-tier banking system with distinct functions for a central bank and commercial banks, lifting sectorial restrictions on specialized banks, permitting privately owned banks, allowing foreign banks and joint ventures, liberalizing licensing policy for many banking activities, and adjusting legal and supervisory systems (see Reininger et al. 2001). Initially, the banking sectors in transition countries were very weak and faced many problems, such as undercapitalization, bad loans, a shortage of long-term funds, inexperienced staff, legal loopholes, and a lack of risk management.

Although all transition countries had similar goals – to build stable and healthy financial systems – the results they obtained varied. They reflected the institutional diversity as well as the plethora of disparate models of capitalism. Initial conditions in these economies and the reform packages they introduced on their path to a market economy resulted in a different organization as well as regulation of their markets.

The aim of this study is to compare the development of financial markets of two countries representing different types of capitalism according to the Knell and Srholec (2005) classification, namely Poland and the Czech Republic. The research thesis states that as a consequence of differences in initial conditions, as well as in approaches to the transformation process, the organization and development level of the financial systems in these countries are different. This is a descriptive study, in which we describe and compare the changes in the financial systems of these countries, concerning both the process of transformation and today's performance of the two systems.

2. Literature

2.1. Economic transformation in the Central and Eastern European countries

The process of economic transformation in Central and Eastern European countries has been often described in the scientific literature (e.g. Belka (2001, pp. 217-234), Colombo and Stanca (2006), Kowalewski and Rybinski (2011, pp. 634-657), Kowalski (2009), Myant (2007, pp. 431-450), Reininger et al. (2001)).

Many economists try to answer why the countries that have undergone the transition in Central and Eastern Europe (CEE) differ in so many dimensions. The early study of Reininger et al. (2001) compares the financial systems in Poland, the Czech Republic and Hungary. All the countries experienced banking crises in the initial stage of transformation (because of bad loans of commercial banks, an inadequate licensing policy, lack of capital and banking skills, a recessionary environment, and political intervention). This forced recapitalization of banks was quite quick and not costly in Poland and Hungary, while in the Czech Republic it was more expensive and protracted. Privatization appeared quickly in Hungary and in the Czech Republic, but not in Poland. The countries were successful in establishing capital markets, but the strategy of Poland and Hungary was better than that of the Czech Republic. The progress of Poland and Hungary was due to their focus on an infrastructure and regulatory framework, which was not the leading priority for the Czech Republic.

Kowalski (2009) compares the economic transformation in Poland and Hungary, the Czech Republic, the Slovak Republic, Lithuania, and the Ukraine. It seems that Poland performed very well in comparison with these other countries and improved its position. It was, for instance, the first country to exceed the pre-transition level of the GDP and the only country that has survived the 2008 crisis without a recession. Kowalewski and Rybinski (2011, pp. 634-657) state that the success of the Polish transformation is often improperly attributed to the high quality of government. The authors underline that it is not the quality of government, but rather the quality of financial supervision that could be a model for other countries. According to the Global Competitiveness Ranking, the Czech Republic achieved the best position and was the only country from this group recognized as an innovation-driven economy. The rest of the countries (except for Ukraine) were classified as in transition between an efficiency-driven economy and an innovation-driven economy. Kowalski (2009) points out that, on the one hand, Poland had a strong tradition of social self-organization and other pathways of social capital development, but on the other hand it had also very bad initial conditions (stagnation and structural characteristics). Belka (2001, pp. 217-234) mentions five reasons for the successful transformation in Poland: the shock therapy of 1990, measured institution building, pragmatism, a social contract, and a pro-European orientation.

2.2.Importance of financial market institutions

After decades of socialism, all transition countries were left with a lack of institutions necessary for the proper functioning of a market economy, in particular a developed financial system. Widely understood, institutions are vital for successful transition from a centrally planned economy to a market economy. According to North (1990), such institutions are "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social or economic". The definition of institution is very broad and not embraces only formal institutions such as financial markets or banking supervision institutions, but also informal institutions such as commonly accepted but unwritten laws, rules of behavior on the market, relations between market agents, etc. Well-developed formal and informal institutions are the prerequisites for successful transition from a command economy to a market economy; therefore, at the beginning of the transformation process, transition economies had to develop a rudimentary infrastructure for their financial systems.

2.3. Two modes of coordination

Hall and Soskice (2001) presented the idea of distinguishing between two models of organizing a capitalistic as well as a democratic political economy: the Coordinated Market Economy (CME) and Liberal Market Economy (LME).

The authors describe the Coordinated Market Economy as one which emphasizes long-term returns on investment. Such an economy might be characterized by firms that have close and long-lasting relations with banks and business associations, focus on vocational training to achieve firm or industry specific competencies, and cooperate to facilitate the setting of standards or new technology transfer. Moreover, in a coordinated market economy there is an extensive social security system, trade union density is high, and long-term employment contracts are common. The authors show that such countries as the Scandinavian countries, Germany or Austria are included in the group of CME countries.

On the flip side, the Liberal Market Economy may be perceived as having short-term investment horizons based on stock market financing. It may be characterized by deregulated labor markets in which it is easy to hire and fire employees, weak trade unions, training systems that provide more general than

specific education, and strong antitrust legislation. These limit cooperation between firms and cause transfers of technology through labor mobility and licensing. The United States, the United Kingdom and Ireland might be listed as examples of LMEs.

According to the Knell and Srholec study, Poland developed a Liberal Market Economy capitalism with a so-called coordination index amounting to -1.8, while the Czech Republic adopted Coordinated Market Economy capitalism with a coordination index equal to 4.4. This indicates that the Czech Republic has a leading position among the CME group of economies, while Poland seems to be one of the lowest on the list of liberal market economies.

The varieties of capitalism developed in Poland and the Czech Republic seem to be reflected in the development, organization and functioning of their financial markets.

3. A comparison of Poland and the Czech Republic

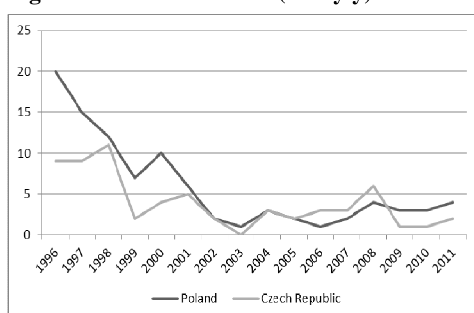
3.1. The situation before transformation

The financial mechanisms of a command economy are different from those in market economies. At the beginning of the transformation process in all transition countries, the banking sector was not making any independent credit decisions. Credit allocation was performed at the central level and was driven by non-economic factors. There was neither risk-management, banking supervision, nor an interbank market. Countries were functioning without stock exchanges and over-the-counter markets and, as a result, without financial institutions such as brokerages or investment funds. Enterprises had no access to financing other than subsidies and loans rationed by the state. The currency of these countries was neither internally nor externally convertible. In many transition countries it was even forbidden to possess foreign exchange. All transition countries suffered from an insufficient number of specialists in finance, which deepened the problems occurring during the initial period of transformation, particularly the problem of bad loans.

All the transition countries had to create financial systems from scratch, but they started this process with different initial endowments; what differentiated these countries the most was their macroeconomic situation. The year before the transformations began, inflation in Czechoslovakia was moderate, while Poland suffered from very high inflation that changed into

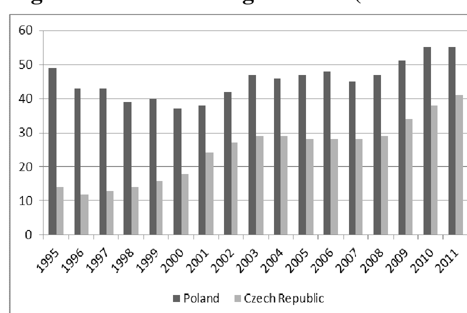
hyperinflation (see Figure 1). The high inflation in Poland resulted from a fiscal deficit equal to 7.4% of GDP. There was no capital market, so the only possibility to cover the fiscal deficit was debt monetization. Additionally, Poland was burdened with foreign debt (> 44% of GDP), while in Czechoslovakia the foreign debt amount was relatively low (International Monetary Fund 2000) - see Figure 2. On the other hand, although Czechoslovakia had a very good macroeconomic situation during the transformation process, it faced challenges of a different nature: on 1 January 1993, it split into the Czech Republic and Slovakia.

Figure 1. Rate of inflation (CPI y/y)



Source: Prepared by authors based on IMF data.

Figure 2. Government gross debt (% of GDP)



Source: Prepared by authors based on IMF data.

3.2. Development of financial markets

Development of the financial system in both Poland and the Czech Republic required a modern banking sector, institutional independence of the central bank, and a capital market. The most significant role in the creation of an effective financial market was played by reforms in the banking sector. Although development of non-banking financial systems, capital markets, the insurance sector and other spheres of the financial market were also very important, they were outweighed by the significance of the banking sector. As seen in Table 1, the share of banking sector assets accounts for 70% of financial system assets in Poland, 84% in the Czech Republic and 69% in the euro area, which indicates the dominating role of the banking sector in all of these regions. This ratio is gradually declining due to the growing significance of other financial institutions (e.g. pension, insurance and investment funds), but still it remains very high.

The first step in the banking sector reform process was the shift from a one-tier banking system to a two-tier system (separation of the central bank

and the commercial banks). The next phase was the redirection of banks' business objectives from financing the needs of state-owned enterprises to profit maximization, accompanied by the privatization of state-owned commercial banks. During the early phase of transition (1992-1996) banking crises appeared, and thus recapitalization programs were introduced. Aside from common trends in the banking sector reforms, the experiences in this area of each transition country were different. Some of them took a gradualist approach while others decided to adopt radical reforms.

At the beginning of the transformation process, Czechoslovakia had a one-tier banking system, with the central bank playing the additional role of a commercial bank. Together with the Czechoslovak State Bank (SBCS), there were also other specialized banks: the Czechoslovak Trade Bank (in charge of administering foreign payments operations in the corporate sector); the Investment Bank (dealing with long-term investment loans); the Trade Finance Bank (performing operations with foreign entities for small private clients) and the Czech and Slovak Savings banks (responsible for serving the general public).

Czechoslovakia started its banking sector reforms a few months before the fall of the communist regime and adopted a new Law on the State Bank on 1 January 1990. The State Bank was then divided into a central bank and two commercial banks: Commercial Bank Prague and Credit Bank Bratislava. The new law also enabled the creation of private banks, and as a consequence competition was introduced into the Czechoslovak commercial bank system. The first years were not easy for the new banks, since many of them got into trouble because of bad loans resulting from a lack of experience in risk management and lack of adequate information about clients, as well as political pressures. In order to mitigate these problems, the regulation and supervision of the sector was progressively tightened.

In Poland the goals of banking sector reforms included creation of a competitive and effective banking system and enabling the banks to allocate capital based on risk assessment. The steps undertaken included gradual removal of administrative controls, the central bank's withdrawal from refinancing of banks, the split of NBP into a central bank and nine regional commercial banks, as well as liberalization of new banks' entry into the market. Unfortunately the postponing of macroeconomic stabilization hampered the development of the financial sector; as long as the currency was depreciating, the development of a financial system was not possible. Only after the stabilization programs were introduced did the financial markets start to develop and deepen. Privatization of banks was crucial for the development of the financial system in Poland. They were freed from political pressures. The competition on the market increased and it was necessary to create an adequate legal framework. Regulations

protecting creditors were established relatively fast, but the process of execution of those laws was more complicated and difficult to enforce. A cautious approach was successively adopted, but efficient supervision over the creation of a financial market was a long-term process. Its initial vulnerability and inefficiency led to a deepening of the problem of bad loans.

The countries applied various solutions to this problem. The majority decided to provide financial help to banks burdened with bad loans. Concerning the recapitalization programs, Poland succeeded in stabilizing its banking system, whereas the Czech Republic had continuous difficulties. The success of the Polish program is attributable to its design, but also to the small size of the Polish banking sector in relation to GDP. Reininger et al. (2001) demonstrate the fiscal costs of bank recapitalization programs and the year in which the main part of such programs was completed: for Poland it accounts for 1.6% of GDP and the year is 1996, whereas for the Czech Republic it is 8.9% of GDP and 1997. Yet according to Zoli (2001), the total restructuring cost of banks in the Czech Republic amounted to 25% of GDP, while in Poland those costs were less than 5% of GDP.

3.3. The level of financial intermediation

The Czech Republic appears to be financially more developed than Poland. Indices of financial intermediation, presented in Table 1, clearly support this thesis. Moreover, the Czech Republic financial system is perceived as safer than the Polish one.

Firstly, let us describe the level of monetization in the two countries, which is the most general of the analyzed measures. A low level of monetization usually characterizes countries with strongly restricted and undeveloped financial markets, and with informal (illegal) credit and deposit markets. Thus, the higher level of indices of monetization observed in the Czech Republic (a ratio of 73.8 of M2 to GDP and 75.3 of M3 to GDP in 2010)than in Poland (54.7 M2/GDP and 55.3 M3/GDP) demonstrates a higher level of financial development in the former country. Similarly, the Czech Republic has higher indices of financial system assets, bank loans and bank deposits. As a percentage of GDP, the Czech Republic's figures in 2010 were 136, 54.7 and 65.8 respectively, while Poland's figures were 118 for financial system assets, 49.2 for bank loans and 43.6 for bank deposits. Trade openness, measured as the sum of exports and imports to GDP, is also higher for the Czech Republic (136 in 2010) than for Poland (86 in 2010). This index seems to show that the Czech Republic is relatively more integrated with other economies. Moreover, the level

of financial openness, calculated as the ratio of total assets and liabilities of the international net position to GDP, is higher for the Czech Republic, measuring 187 in 2010, while for Poland it was 142. The Czech Republic might be also characterized by a higher level of investment to GDP and higher level of gross national savings to GDP (22.6 for investment and 22.1 for savings in the Czech Republic, compared with to 20.8 and 16.3 respectively for Poland. Figure 3 and Figure 4 show that these characteristics have been higher for the Czech Republic since the 1990s, but the difference between these two countries is much lower now than at the beginning of the transformation process. It is also worth noting that the level of stock market capitalization in Poland is higher than in the Czech Republic, which will be discussed in the next section in more detail. This indicates the greater importance of the Polish stock exchange, which is by far the largest and the most developed market in the region.

Table 1. Structural features of the Polish, Czech Republic and Euro area economies, 2010

	Poland	Czech Republic	Euro Area
OECD employment protection legislation index*[a]	2.19	1.99	2.44
Trade union density*[b]	15.6	17.4	27.2
Average inflation 2004-2010 (%)	2.9	2.5	2.0
Share of investment in the GDP	20.8	22.6	19.2
Trade openness[c]	86	136	80
Financial openness[d]	142	187	377
Banking sector concentration (share of assets held by the 5 largest banks)	44.2	62.0	44.7
Financial system assets/GDP	118	136	494
Banking system/financial system assets	70	84	69
Bank loans/GDP	49.2	54.7	120.5
Bank deposits/GDP	43.6	65.8	85.4
M2/GDP	54.7	73.8	91.6
M3/GDP	55.3	75.3	103.9
Stock market capitalisation/GDP	38.7	22	54,5
Financial assets of households/GDP**	62	77	201

*2008, **2006,

[a] The OECD employment protection legislation index measures the restrictiveness of producers concerning employee dismissals and hiring on temporary and permanent contracts. It ranges from 0 to 6; the lower the index, the fewer labour market rigidities

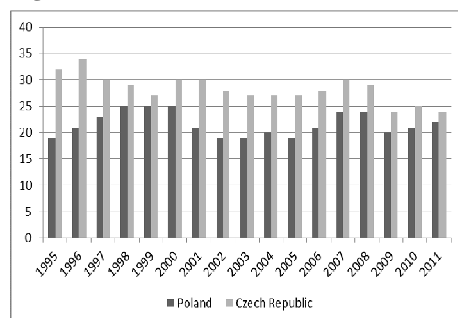
[b] Trade union density is calculated as the percentage of employees who are trade union members in the overall number of persons employed

[c] Trade openness is computed as the ratio of the sum of exports and imports of goods and services to the GDP,

[d] Financial openness is computed as the ratio of the sum of assets and liabilities of the international net position to the GDP.

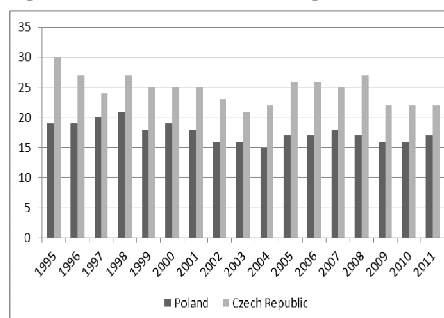
Source: Demchuk, Łyziak, Przystupa, Sznajderska, Wróbel (2012).

Figure 3. Total investment (% of GDP)



Source: Prepared by authors based on IMF data.

Figure 4. Gross national savings (% ofGDP)



Source: Prepared by authors based on IMF data.

The other key indicator is the level of financial assets held by households in relation to GDP. Financial assets of households include (according to OECD definition) currency and deposits, securities, loans, shares and other equity, net equity in life insurance reserves, pension funds, prepayments of premiums and reserves against outstanding claims, and other accounts receivable. So the growing number of household financial assets, observed in both the Czech Republic and Poland, indicates a more wealthy society and a growing level of financial development. The ratio of financial assets of households to GDP is higher in the Czech Republic than in Poland, confirming the thesis outlined at the beginning of this section.

An increasing percentage of the banking sector is controlled by foreign capital in most transition countries (Weill 2003, pp. 569-592). Both in Poland and in the Czech Republic, the banking sector is dominated by foreign investors (for instance 33 out of 41 banks in the Czech Republic were majority owned by foreign investors in 2010). On the one hand this might make these banks less dependent on the economic situation in Poland or in the Czech Republic, but on the other hand this effect is mitigated by the excess liquidity[1] in these countries (thus, we could expect outflow rather than inflow of capital) Moreover, any technological innovations in the banking system may be quite easily and quickly transmitted to the analyzed countries.

Another contrast is the fact that in the Czech Republic, a low share of foreign currency-denominated credits is observed, whereas in Poland this share is relatively high (24.5% for companies and 36.9% for households in 2010).

[1] Usually transition economies experience high capital inflows due to opening of the market and privatization, as well as the central bank's interventions to protect the domestic currency (the prices are too low in comparison to money stock) (Ganley 2002).

Therefore, the foreign exchange risk in Poland is relatively high, whereas in the Czech Republic it is relatively low.

As far as the level of competition is concerned, it appears higher in Poland than in the Czech Republic. It might be shown that the level of competition is negatively related to the level of concentration. There are certain indicators that might be applied to measure the level of concentration, such as the Herfindahl-Hirschman Index (HHI) or the CR_5, CR_{10}, CR_{15} indexes, which measure the market share of the 5, 10 and 15 largest banks. In Table 1 we present the CR_5 index, which is higher for the Czech Republic than for Poland, indicating a lower level of competition in the Czech Republic banking sector.

Trade union density is computed as the percentage of employees who are trade union members in the overall number of people in employment. This index is higher in the Czech Republic than in Poland. This is in line with the Knell and Srholec classification, where the Czech Republic is a coordinated market economy with strong trade unions, while Poland seems to be liberal market economy with weak trade unions. But in contrast, the OECD employment protection legislation index, which measures the restrictiveness of dismissal and hiring procedures, is lower for the Czech Republic than for Poland, which denotes smaller labor market rigidities and higher price elasticity in the Czech Republic. However, the differences between both the trade union density index and the OECD employment protection legislation index in Poland and the Czech Republic are not very significant, so the differences concerning the labor market and price rigidities seem to be negligible.

Both the Czech Republic and Poland still lag financially behind the euro area countries. The relevant indices presented in Table 1 show the leading position of the euro area.

3.4. Capital markets

The stock exchange stimulates an increase of competition and encourages innovation and the development of new technologies. The capital market is a prerequisite for economic development since it stimulates savings as well as trading and improves risk management. Moreover, informative stock prices provide signals to investors and managers. Many studies have proven that a link exists between financial development and faster economic growth. According to Bekaert, Harvey and Lunblad (2001, pp. 465-504), financial liberalization of emerging markets increases economic growth by up to 2 percentage points annually.

At the beginning of the transformation process, stock markets were not unknown to the transition economies. The Warsaw Stock Exchange was established in 1817 and the Prague Stock Exchange was opened in 1871. They did not function under the socialist period, but they emerged in 1991 in Poland and 1993 in the Czech Republic. At first, the Warsaw Stock Exchange was mainly used for voluntary initial public offerings (IPOs), while the Prague Stock Exchange conducted a mandatory listing of shares of mass-privatized companies. Therefore the Warsaw Stock Exchange started with a small number of listed companies and the Prague Stock Exchange was characterized by a large number of stocks, but as the latter bourse developed, the number of shareholders decreased significantly. According to Glaeser, Johnson, and Shleifer (2001, pp. 853-899), prior to the 1994 reforms the Czech stock market was five times larger than the Polish market (expressed as a percentage of GDP). Moreover, Poland and the Czech Republic used different approaches towards securities regulation. Once the Warsaw Stock Exchange was created, the Polish Government introduced restrictive investor protection regimes and established an independent Securities Commission responsible for supervision of securities markets. In the Czech Republic the same task was delegated to an office in the Ministry of Finance. The existence of the independent Securities Commission in Poland increased investor confidence and induced capital market development. In contrast, the lack of prudent regulations in the Czech Republic undermined investor confidence and resulted in slower development of the financial system. By 1998, the Czech market had doubled in value from 1994, while the Polish market grew sevenfold in the same period. In 1998 the Czech Securities Commission was established in order to provide much higher capital market transparency and investor protection (Claessens, Djankov, Klingebiel 2000).

Figure 5 presents the number of companies listed on the Prague Stock Exchange and Warsaw Stock Exchange in 1991-2011. The nature of the Czech voucher privatization process is visible in this figure. Companies involved in the voucher privatization were listed on the Prague Stock Exchange but were later delisted, either voluntarily or due to illiquidity and/or other problems. The total number of companies listed on the Warsaw Stock Exchange proves that the approach to capital market development in Poland was completely different; only voluntary initial public offerings were conducted there. The number of listed companies in Poland increased gradually between 1991-2001. A number of delistings have taken place since 2001, but many Initial Public Offerings have also been registered. In 2011 the Prague exchange had 26 listed companies, while the Warsaw bourse had 426.

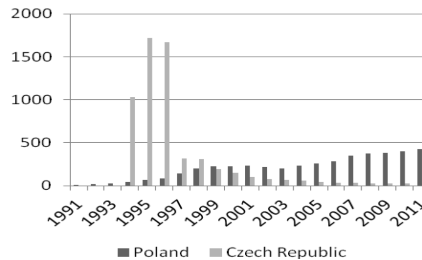
Countries with a stable economy, prudent laws and strong disclosure requirements usually have larger stock markets as measured in market

capitalization as a share of GDP. Figure 6 and Figure 7 present market capitalization of the Warsaw and Prague Stock Exchanges in absolute terms (in billions of euros) and as a percentage of GDP, respectively. The analysis of market capitalization to GDP ratio during 2001-2011 shows that market capitalization expressed as a percentage of GDP in 2001 was equal to 13% in the Czech Republic and 14% in Poland, while in 2011 it accounted for 19% in the Czech Republic and 29% in Poland. The highest values were recorded in 2007 for both the Czech Republic (36%) and Poland (46%). Thus the impact of the global financial crisis on market capitalization is evident, as the share of both markets in GDP for 2008 was equal to 19%. In terms of market capitalization absolute values, in 2001 it was equal to 9 billion EUR in the Czech Republic and 29.52 billion EUR in Poland, while in 2011 it accounted for 29.2 and 107.48 billion EUR for the Czech Republic and Poland respectively. From 2001 to 2011 the market capitalization in the Czech Republic increased by 224%, while in Poland it increased by 264%. In 2011 market capitalization in Poland was almost 3.7 times higher than market capitalization in the Czech Republic.

Market turnover is the value of trading in a stock exchange. Presented as a percentage of market capitalization, it measures market liquidity. Low market turnover to market capitalization ratio shows that a market is illiquid. Markets in transition economies are less liquid than those in developed countries. For instance, the market turnover ratio was above 167 percent in Germany in 2011 (market capitalization: 912.42 billion EUR; turnover: 1,525.572 billion EUR) which is much higher than in Poland or the Czech Republic.

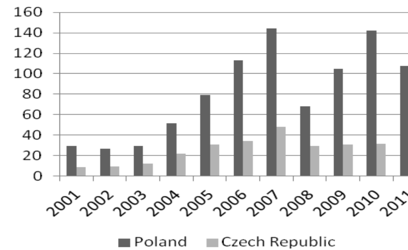
Figure 8 presents the liquidity (measured as a market turnover-to-market capitalization ratio) of the Warsaw and Prague Stock Exchanges in 2006-2011. Turnover represented 87% of market capitalization in the Prague exchange and 39% in the Warsaw exchange in 2006, while in 2011 it represented 52% of market capitalization in the Prague exchange and 58% of market capitalization in the Warsaw exchange.

Figure 5. Warsaw Stock Exchange and Prague Stock Exchange - number of listed companies



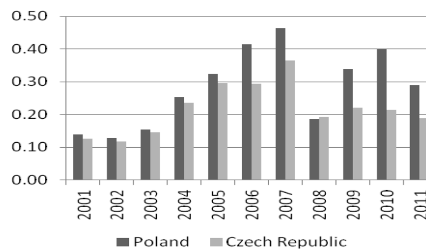
Source: Prepared by authors based on data from PSE Factbook 2011 and Warsaw Stock Exchange.

Figure 6. Market capitalization (Billions of euro)



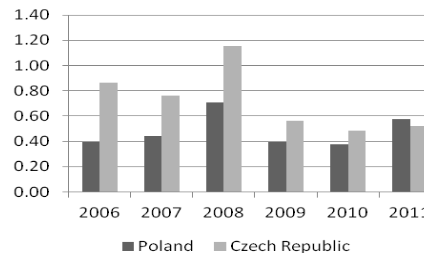
Source: Prepared by authors based on Eurostat data.

Figure 7. Market capitalization (% of GDP)



Source: Prepared by authors based on Eurostat data.

Figure 8. Market Turnover (% of market capitalization)



Source: Prepared by authors based on Eurostat data.

3.5. Financial market supervision

In centrally planned economies there was no need to build supervision units, especially like those that function today in the market economies. In Poland in 1989 the new legal acts enabled the creation of a new banking system with the central bank and commercial banks. From 1989 to 1997, the central bank was responsible for banking supervision. But due to concerns that the supervisory institutions would be the continuation of state control as in the socialist period, creating the supervision process took much longer than the setting up and developing of new banks. This situation led to the creation of

inappropriate practices as far as the banks' operation is concerned. This was one of the main reasons for the significant problems in the banking sector in 1992-1993. In light of these difficulties, the Bank Guarantee Fund was founded in 1994. Together with the development of the banking system, the rules of operating the banking sector were changing. Both the scope of banking services and the openness toward new customers were becoming wider (compare with Daniluk and Niemierka, 2005). The Commission of Banking Supervision was created in 1998, and since then banking supervision has been independent of the central bank and the government. Previously the central bank governor was designated as the head of the Commission and the executive body had been separated from the central bank (it was called the General Inspectorate of Banking Supervision). In subsequent years, Polish supervision was adjusted to the requirements of the European Union and the banking sector underwent consolidation: the number of commercial banks decreased from 83 in 1998 to 59 in 2003 and the number of cooperative banks decreased from 1189 in 1998 to 606 in 2002. On 19 September 2006 the Financial Supervision Authority (FSA) was formed. This led to consolidation of the supervisory bodies in Poland. The Polish FSA took over the tasks of the Insurance and Pension Funds Supervisory Commission and the Securities and Exchange Commission. Next, in January 2008, the new supervision authority took over the powers of the Commission for Banking Supervision and the General Inspectorate of Banking Supervision. Finally, Poland had joined the group of countries with integrated financial supervision.

As with Poland, Czechoslovakia had no supervision in financial markets at the beginning of the 1990s, but it emerged over time as a four-tier system: the Czech National Bank since 1990 has supervised banks; the Czech Securities Commission since 1998 has controlled the capital market; the Ministry of Finance since 1994 has supervised insurance and pension funds while the Office for Supervision of Credit Unions since 1997 has overseen credit unions. In 2006, the Czech National Bank took over all supervisory responsibilities. As far as recent legal developments are concerned, most of the recent legislation consisted in transposing EU directives into Czech laws. The Czech National Bank is still gaining experience in the new fields of its supervision.

3.6. Response to the financial crisis

The deterioration in the United States of the subprime mortgage market in mid-2007 brought about a serious crisis influencing financial institutions across the globe. Since financial markets play a critical role in the propagation of

shocks, it can be assumed that the level of financial market development influences the country's response to financial shocks. In order to verify this hypothesis, a comparison will be made between the response of Polish and Czech financial markets to the subprime mortgage and liquidity crisis. An analysis of these responses will be performed with the use of the Polish and Czech stock indices (the WIG for Poland and the PX for the Czech Republic, which are both the indices of major stocks traded on the Warsaw Stock Exchange and the Prague Stock Exchange respectively), as well as the one-week money market interest rates – WIBOR and PRIBOR. Figures 9 and 10 present the changes of WIG and PX indices (daily data) over the period 2006-2012. Both indices follow very similar paths. This statement applies particularly to the financial crunch period following the US subprime mortgage crisis.

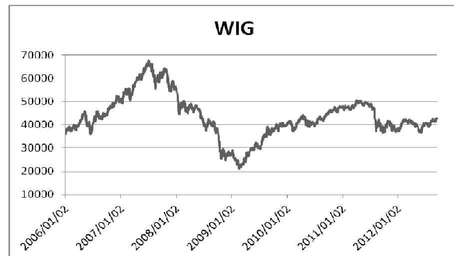
Both the WIG Index and the PX Index reached their peaks in October 2007, while the lowest crisis-based levels were reached in February 2009. In addition to the timing of responses to the financial crisis, the strength of these responses is of crucial importance for the cross-country comparisons. In order to allow for more precise comparisons of WIG and PX movements (analysis of response strength) during the tranquil period, their month-to-month changes are presented in Figure 11. In accordance with the conclusions for the timing of the financial markets' response to the crisis, the relative changes of the indices followed similar paths for Poland and the Czech Republic. The sharpest relative slump in the values of the WIG and PX indices was recorded in October 2008 (0.79 for WIG and 0.72 for PX).

From the timing as well as the month-to-month changes of the WIG and PX indices, it can be inferred that the responses of both the Polish and Czech financial markets to the US subprime mortgage crisis occurred almost simultaneously and the magnitude of these responses was comparable.

We also have compared one-week interbank interest rates. As presented in Figure 12, the interest rate movements in Poland and in the Czech Republic were very similar during the crisis. Due to the crisis of confidence between retail banks, the money market faced liquidity problems. Only short-term transactions were conducted. The central banks in both Poland and the Czech Republic introduced some special programs to provide liquidity. The Czech National Bank introduced extraordinary liquidity, providing repo operations with two-week and three-month maturities, but there was no need to support foreign currency refinancing (Babicky 2011, pp. 171-179). The National Bank of Poland created a so-called Confidence Package, introducing repo transactions with a maturity of up to six months, swaps broadening the range of assets that could be used as collateral in operations with the NBP, early redemption of 10-year

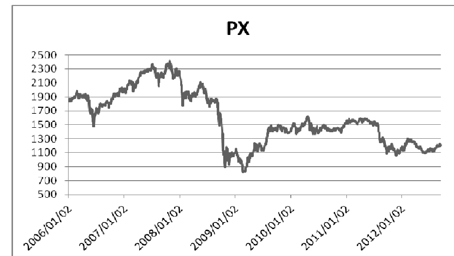
NBP bonds and reduction of the reserve requirement ratio (Demchuk et al. 2012). These programs, combined with lower interest rates, restored the balance.

Figure 9. WIG Index (daily data)



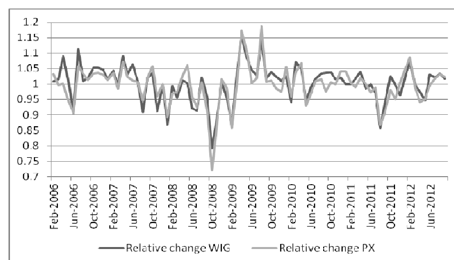
Source: Prepared by authors basing on http://stooq.pl/ data.

Figure 10. PX Index (daily data)



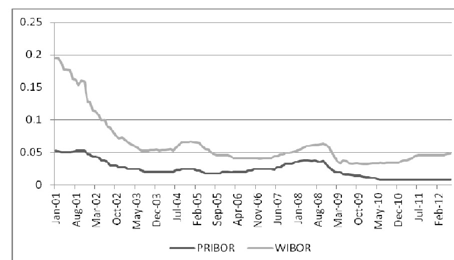
Source: Prepared by authors basing on http://stooq.pl/ data.

Figure 11. WIG Index and PX Index relative changes (monthly data)



Source: Prepared by authors basing on http://stooq.pl/ data.

Figure 12. WIBOR and PRIBOR 1 week interest rates (monthly data)



Source: Prepared by authors basing on data from the central banks of Poland and the Czech Republic.

4. Conclusions

In the last two decades, Central and Eastern European countries experienced fundamental changes in their political and economic spheres. They went through a dual transition process from communist rule towards democracy and from a centrally planned economy to a market economy, and these changes led to fundamental transformations in almost every aspect of each country's economic, political and social life.

The comparison of progress in building financial markets in Poland and the Czech Republic leads us to the conclusion that both countries managed to build stable and rather healthy financial systems after a difficult and turbulent

transition process. These systems are dominated by the banking sectors, which, in turn, are strongly controlled by foreign banking groups. The financial systems in the two countries are less mature than in the developed countries and the Czech Republic financial system seems to be more developed than the Polish one. This is probably due to better initial conditions in the Czech Republic than in Poland, as well as the decisions concerning the way in which the systems should be operating, controlled, and monitored. Nevertheless, most likely in both countries some of the costs of the stabilization and consolidation of the system could have been mitigated by earlier privatization, a better legal framework and supervision, as well as proper risk estimation.

Although the financial system in Poland could be perceived as less developed than in the Czech Republic, the Polish stock exchange is by far the largest and the most developed market in the region and its successful development was due to prudent laws and regulations, in contrast to the Czech Republic. The other advantage of the Polish financial system is its relatively high level of competition, which could eventually lead to a higher level of financial development.

Moreover, it seems that although there are differences in the development level of financial markets in Poland and the Czech Republic, they did not significantly influence the countries' responses to the global financial crisis.

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Streszczenie

ZMIANY INSTYTUCJONALNE W SYSTEMACH FINANSOWYCH POLSKI I CZECH

Przez ostatnie 23 lata systemy finansowe w Polsce i w Czechach zmieniły się nie do poznania. Proces transformacji był ciężkim i trudnym zadaniem w obu krajach. Pomiędzy krajami istniały znaczące różnice w warunkach początkowych jak i podejściu do procesu transformacji. Zgodnie z klasyfikacją Knell i Srholec (2005) kraje te reprezentują różne typy kapitalizmu. W artykule staramy się pokazać, że organizacja i poziom rozwoju systemów finansowych w tych z pozoru podobnych krajach są również istotnie różne. Głównym celem pracy jest porównanie ścieżek rozwoju i obecnego funkcjonowania systemów finansowych w Polsce i w Czechach.