

# Contents

<i>List of Tables</i>	ix
<i>List of Figures</i>	xii
<i>List of Abbreviations</i>	xv
<i>Acknowledgements</i>	xvii
<i>Notes on the Contributors</i>	xviii
Introduction	xx
<b>1 The Financial and Banking Sectors in Transition Countries</b>	<b>1</b>
<i>Lumír Kulhánek, Stanislav Polouček and Daniel Stavárek</i>	
1.1 Financial sectors and intermediation in transition countries	1
1.2 Comparison of financial sector structures	10
1.3 Development and restructuring of banking sectors in the CEC	17
1.4 Conclusion	27
<b>2 The Czech Banking System in the 1990s: Regulation and Supervision</b>	<b>31</b>
<i>Roman Matoušek</i>	
2.1 The role and place of banking regulation and supervision	33
2.2 Banking regulation and supervision – legislative framework	35
2.3 Entry into and exit from the banking sector	38
2.4 Deposit insurance scheme	41
2.5 The institutional framework of supervision and regulation	43
2.6 Conclusion	46
<b>3 Concentration of Banking Sectors</b>	<b>49</b>
<i>Stanislav Polouček</i>	
3.1 Concentration and economic theory	49
3.2 The concept and measurement of concentration	56

3.3	Concentration in the banking sectors of the Czech Republic, Poland and Slovakia	61
3.4	Conclusion	68
<b>4</b>	<b>Efficiency and Profitability in the Banking Sector</b>	<b>74</b>
	<i>Daniel Stavárek and Stanislav Polouček</i>	
4.1	The theoretical framework of efficiency	75
4.2	Cross-country analysis of relative efficiency	86
4.3	Privatization and banking sector profitability	105
4.4	Risk and profitability of banks in CEC	113
4.5	Relationship between efficiency and profitability	126
4.6	Conclusion	128
	Appendix	130
<b>5</b>	<b>Costs of Macroeconomic Instability in Accession Countries</b>	<b>136</b>
	<i>Jan Frait, Luboš Komárek and Martin Melecký</i>	
5.1	Overview of features of the transition process in the ACC	136
5.2	Facts on financial instability	140
5.3	An empirical analysis of potential costs associated with macroeconomic instability	146
5.4	Conclusion	154
	Appendix	156
<b>6</b>	<b>Exchange Rate and Monetary Developments in Accession Countries</b>	<b>169</b>
	<i>Jan Frait and Luboš Komárek</i>	
6.1	Overview of discussions on the introduction of the euro	169
6.2	Nominal and real convergence	171
6.3	Exchange rate developments in six accession countries	175
6.4	Inflation targets and price-level convergence	181
6.5	Exchange rate regimes and the speed of euro adoption	188
6.6	Exchange rate strategies of accession countries	198
6.7	Conclusion	206
	<i>Index</i>	211

# 1

## The Financial and Banking Sectors in Transition Countries

*Lumír Kulhánek, Stanislav Polouček and Daniel Stavárek*

Ideas and scenarios for economic reforms led to the transformation of a centrally planned economy into a market economy in Central European countries (CEC). Privatization, liberalization of prices, liberalization of foreign trade, and liberalization of capital movement were among the main pillars of transformation. The fulfilment of the transformation task was impossible without substantial changes in the banking sector. This chapter gives a brief overview of the development of the financial and banking sectors in the Czech Republic, the Slovak Republic, Hungary and Poland. In the first part, the key features of the financial sectors in these transition countries are identified. Then, by applying indicators of capital market and bank development, a comparison of the financial sector's structure will be made. The third part will deal with the restructuring of the banking sector in transition economies.

### **1.1 Financial sectors and intermediation in transition countries**

In developed as well as in transition countries, the financial sector is very important for capital allocation, financial intermediation, transformation of savings into investments, risk sharing and risk diversification. Well-developed financial markets and bank activities also improve productivity and significantly affect economic growth.<sup>1</sup> Therefore, the analysis of the financial sector and its role in financial intermediation has long been a favourite topic of economic research. In addition, the relation between banking intermediation and intermediation performed by financial markets is becoming increasingly noticeable. None the less, the views of economists and financial experts are not uniform on how important banks and capital markets should be.

Deregulation, globalization, and changes in the economic as well as the political and social environment have seriously influenced financial intermediation development. If we take into account progress in information technologies, we can see that the function of an intermediary can be performed with the same effectiveness by banks or by many other financial institutions. Financial markets can also effectively perform most of these intermediation functions. As there are broad positive feedback effects between financial and economic development, it is likewise essential to analyse in detail the characteristics of the financial sector in transition economies in Central Europe, and its further development. Among a great number of aspects, it is essential to draw attention to its initial level of development, for empirical literature also confirms that initial levels of financial development are good predictors of subsequent economic growth.<sup>2</sup>

Financial sectors and banking systems in CEC have undergone fundamental changes since the beginning of the transition process about thirteen years ago. All four countries belong to the group of transition economies which evolved from centrally planned to market economies. Under central planning, the financial system was more or less a book-keeping mechanism for recording the decisions of the planning bureau for allocation of resources. There were no financial markets, and banking sectors were formed almost entirely by so-called monobanks. Upon transition, the following key reforms were implemented:

- monobanks were abolished and two-tier banking systems with the central bank and commercial banks were introduced;
- sectoral restrictions on specialized banks were relaxed;
- the licensing policy for most kinds of banking business was liberalized;
- privately owned banks were admitted and the privatization of the state-owned banks was initiated;
- foreign banks and joint ventures were granted access; and
- the legal framework and supervisory system were introduced and adjusted.

The banking sectors in the CEC had also been restructured, recapitalized and privatized during the 1990s, and capital markets had been established. Thus, conditions had been established in the CEC for financial intermediation and a full development of functions of the financial intermediaries.

At present, there are already financial sectors in these countries, which can be characterized by overall financial stability, and they show

a positive trend in most of the sector's segments. Our observation of the financial sector stability of the CEC is confirmed not only by research carried out in the ECB (Caviglia *et al.*, 2002), but also by the reports of the Financial Sector Assessment Programmes conducted by the International Monetary Fund and the World Bank. However, financial sectors in most of the CEC are still relatively small in comparison to the economic activity, size and depth of financial sectors in developed countries. Up to now they had not been fully developed in terms of market segments or instruments. One can assume that these will eventually increase in depth and efficiency. The overview of the current state is presented in this chapter.

To assess the level of development of the financial sector in the CEC, several frequently applied measures of size and performance allow a comparison with advanced economy benchmarks. None the less, for the purposes of the international comparison of banks' activities and the operation of capital markets, economists do not use one ideal cross-country measure of how well banks operate. They have not been able to measure accurately the financial services of the banking sector for a broad cross-section of countries. Therefore, they use, along with Goldsmith (1969) or McKinnon (1973), measures of the overall size of the banking sector to proxy for financial depth. For the introductory comparison of the depth of bank intermediation we can apply, as in Rousseau and Wachtel (2000) or King and Levine (1993a, 1993b), the ratio of broad money (M2) to GDP<sup>3</sup> and banking assets to GDP.

As noted by King and Levine (1993a), however, the ratio of broad money to GDP as a financial depth indicator does not measure whether the liabilities are those of banks, the central bank, or other financial intermediaries; nor does this financial depth indicator measure or identify where the financial system allocates capital. Thus we also use bank assets, bank loans and bank deposits as other indicators.

For measuring stock market development, we use three indicators – one measure of stock market size, and two measures of stock market liquidity. Stock market capitalization measures the size of the stock market and equals the value of listed domestic shares on domestic exchanges divided by GDP. Although large markets do not necessarily function effectively and taxes may distort incentives to be listed on the exchange, as is accentuated by Levine and Zervos (1998), numerous observers use stock market capitalization as an indicator of stock market development. The indicator is applied in section 1.2 when comparing the structure of the financial sector and its development in particular countries, where the indicators of bank deposits, stock market

capitalization and corporate bonds are used. The World Bank observes these indicators too, and applies them in its statistics of World Development Indicators.

For comparing liquidity, we use two related measures of market liquidity – the turnover ratio and the value traded. The turnover ratio equals the value of the trades of domestic shares on domestic exchanges divided by the value of listed domestic shares. It measures the volume of domestic stocks traded on domestic exchanges relative to the size of the market. A large stock market is not necessarily a liquid market – a large but inactive market will have large capitalization but a small turnover ratio. The measure of value traded equals the value of the trades of domestic shares on domestic exchanges divided by GDP. It measures trading volume as a share of national output, and should therefore positively reflect liquidity on an economy-wide basis. The value traded may be significantly different from the turnover ratio. While value traded captures trading relative to the size of the economy, turnover ratio measures trading relative to the size of the stock market. Thus a small, liquid capital market will have a high turnover ratio, but a small value traded.

The indicator M2/GDP as a common indicator of bank development (depth of bank intermediation) amounts to almost 70 per cent in the euro area (Wagner and Iakova, 2001, p. 50). In the CEC, the level of financial intermediation, measured by this indicator,<sup>4</sup> is considerably different (Table 1.1).

Even after more than a decade of transition and bank restructuring, this ratio in Hungary and Poland is still under 50 per cent. In Poland, the ratio of M2 to GDP had distinctively increased from 35.2 per cent in 1996 and in the year 2001 had achieved levels comparable with Hungary, at around 46 per cent. On the other hand, in Hungary, the ratio of M2 to GDP had dropped slightly in the period studied. However, Czechoslovakia entered transition with a very high ratio of M2 to GDP, and this was reflected in high ratios when it split into the Czech Republic and the Slovak Republic (74.4 per cent and 70.5 per cent in 2001, respectively).

*Table 1.1* Broad money (M2) in CEC (% of GDP, 1996–2001)

	1996	1997	1998	1999	2000	2001
Czech Republic	68.8	70.1	67.6	70.9	72.1	74.4
Hungary	48.1	46.5	45.6	46.7	45.3	46.8
Poland	35.2	37.3	39.9	42.8	43.0	46.3
Slovak Republic	68.8	66.1	63.0	64.6	68.5	70.5

*Source: Stability and Structure of Financial Systems in CEC5 (2002).*

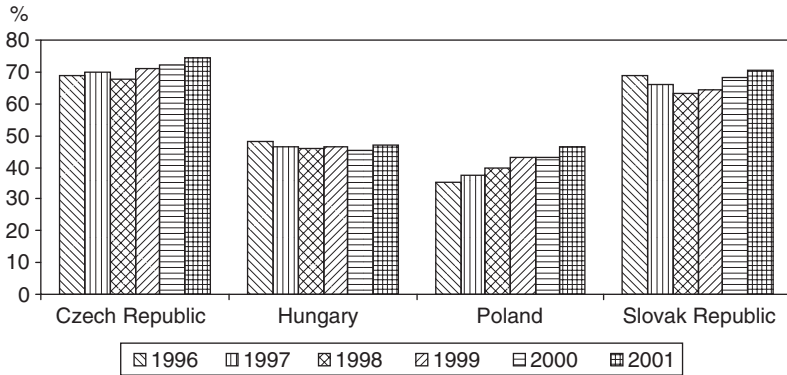


Figure 1.1 Broad money (M2) in CEC (% of GDP, 1996–2001)

Source: Authors' calculations.

As is evident from Figure 1.1 and Table 1.1, the higher ratio of broad money to GDP in the Czech Republic as against other CEC is still slightly increasing. In the Slovak Republic, the M2/GDP ratio decreased until 1998, but started increasing in 1999, and now approximates the value in the Czech Republic.

The low ratio of broad money to GDP indicates a low monetary depth of the economy in Hungary and Poland. It stems not only from the low initial level of this indicator at the beginning of the transformation but also from many other factors. In our opinion, inflation, which was relatively high and more volatile during the 1990s, played a crucial role. The high inflation expectations and those pertaining to the development of the exchange rate also influenced the M2/GDP ratio very greatly. In this connection, Wagner and Iakova (2001, p. 50) also mention many other factors: the relatively recent restructuring and consolidation of the banking sector; the large and growing share of multinational corporations in the domestic economies, with recourse to direct borrowing from abroad; the risk of lending to the consumer sector and to small and medium enterprises; the tendency of domestic firms to finance themselves from retained earnings; and the stabilization and restructuring during transition, which temporarily depressed income and savings. When observing the indicator of M2/GDP and its application in international comparisons, it is necessary to take into consideration the fact that a higher M2/GDP ratio does not have to correspond to a higher quality of financial intermediation in the relevant country.

Banking assets to GDP is another common indicator of the depth of bank intermediation and size of the banking sector. This ratio and its

development are highly diversified across the CEC. In 1996 the ratio of banking assets to GDP ranged from as low as 50.9 per cent in Poland to well above 115 per cent in the Slovak Republic and in the Czech Republic (Table 1.2). In the Czech Republic this ratio reached 129 per cent at the end of 2001 while decreasing to 96.3 per cent in Slovakia. In Hungary this ratio stagnated at a level of 66 to 69.7 per cent (Figure 1.2), while in Poland it was still growing. In 2001 Poland reached a level comparable with Hungary with a ratio of 66.3 per cent.

The ratio of banking assets to GDP confirms that the levels of financial intermediation in CEC are relatively low. These banking sectors are currently still small relative to economic activity. In Poland and Hungary the ratio of banking assets to GDP amounts to about one-quarter of the corresponding level for the euro area in 2001, where the bank assets amounted to about 265 per cent of GDP in 2001 (Caviglia *et al.*, 2002, p. 18). Only the Czech Republic and, to a lesser degree, the Slovak Republic stand out as the CEC with the largest banking systems. The high ratio in these two countries is partially a consequence of an already existent significant banking system under the former centrally planned regime.<sup>5</sup>

Table 1.2 Banking assets in CEC (% of GDP, 1996–2001)

	1996	1997	1998	1999	2000	2001
2001						
Czech Republic	115.4	125.0	122.0	122.8	127.2	129.0
Hungary	66.0	69.7	68.8	68.6	68.2	68.3
Poland	50.9	53.3	57.7	59.2	62.8	66.3
Slovak Republic	118.2	113.2	106.6	94.4	95.5	96.3

Source: *Stability and Structure of Financial Systems in CEC5* (2002).

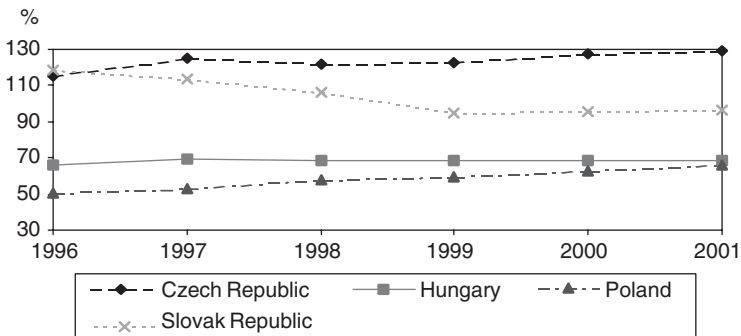


Figure 1.2 Banking assets in CEC (in % of GDP, 1996–2001)

Source: Authors' calculations.

Comparing the development of banking assets to GDP ratio in the CEC in the second half of the 1990s, we can see that the development of this indicator in the CEC corresponds to a great extent to the development of the preceding indicator – broad money (M2) to GDP. However, the higher ratio of banking assets to GDP is not evidence of a healthier banking system.

The low share of domestic credit in GDP or relatively low loans to the GDP ratio could also illustrate the limited level of banking intermediation in the CEC. Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available. The ratio of loans to GDP (the value of loans made by commercial banks and other banks that accept deposits to the private sector divided by GDP) has better information capability in comparison with the domestic credit to GDP ratio and other traditional financial depth indicators. The reason is that it does not take into account credits issued by the central bank and because it considers only credits granted to the private sector, not credits granted to governments.

In the Czech Republic, the country with the largest banking sector measured by the ratio of domestic credit to GDP, this indicator amounts to only about 60 per cent of GDP compared with 135 per cent of GDP in the euro area.<sup>6</sup> The ratio of loans to GDP as compared to the domestic credit ratio was substantially lower in the Czech Republic in 2001, and reached only 36.9 per cent. It was even lower in other CEC in comparison with the Czech Republic. This development is illustrated in Figure 1.3 and Table 1.3.

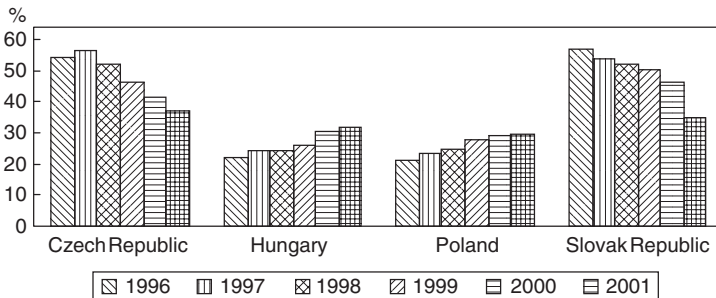


Figure 1.3 Loans in CEC (in % of GDP, 1996–2001)

Source: Authors' calculations.

*Table 1.3* Loans in CEC (% of GDP, 1996–2001)

	1996	1997	1998	1999	2000	2001
Czech Republic	54.3	56.7	52.3	46.5	41.5	36.9
Hungary	22.1	24.3	24.2	26.0	30.4	31.8
Poland	21.2	23.2	24.8	27.8	29.1	29.6
Slovak Republic	56.8	53.9	52.1	50.2	46.3	34.8

*Source: Stability and Structure of Financial Systems in CEC5 (2002).*

Both the Czech Republic and Slovakia had a noticeably higher level of this indicator in the first half of the 1990s, when it considerably exceeded the level in Hungary and Poland. However, the share of loans to GDP had slumped since the year 1996 in the Czech Republic and Slovakia. On the other hand, during the growth of this share in Hungary and Poland the level of indicators came noticeably together in all CEC until the year 2001, ranging from nearly 30 to 37 per cent.

There are many reasons for the low levels of bank intermediation in transition countries. All CEC experienced a sharp economic downturn upon transition, with output falling to between 10 and 25 per cent in the first few years. These stern recessions led to massive bad-debt problems in the corporate sector (Begg and Portes, 1993) and extensive reductions of its bank loans portfolio (see Anderson and Kegels, 1998, among others).

The low level of intermediation is also detected on the liabilities side. It is reflected in a low ratio of deposits to GDP. The development of this indicator in the CEC is analysed simultaneously with the analysis of the structure of the financial sector's funds in Section 1.2.

Capital markets in the CEC comprise both stock markets and markets for debt securities denominated in local currency. A complex comparison of the capital markets' development requires application of indicators of size, liquidity and volatility of capital markets. The indicator of integration with world capital markets is also often used, because application of a variety of measures provides a richer picture of the state, the structure and the development of the capital markets. In this section, we shall use only some indicators. As liquidity of equity markets in the CEC is limited, we shall focus in particular on liquidity of equity markets in these countries.

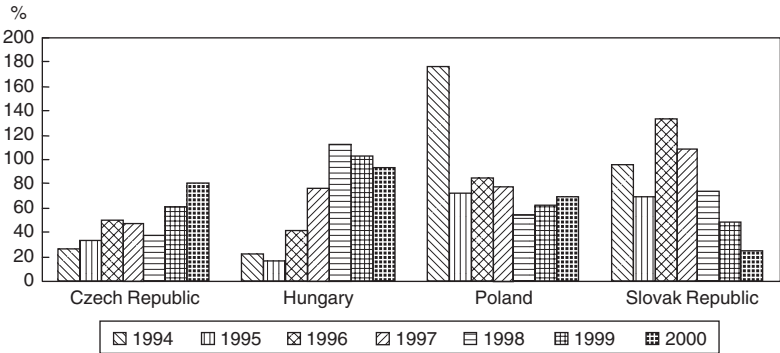
Their capital markets have had a relatively short history of development, as their establishment required enterprise restructuring, privatization<sup>7</sup> and the establishment of an appropriate legal and regulatory framework, including corporate governance and shareholder protection.

In terms of market capitalization, stock markets initially developed most rapidly in countries where mass privatization schemes via vouchers were initiated, most notably in the Czech Republic and Slovakia. Market infrastructure and regulation were often put in place after the establishment of a rudimentary market. In Poland and Hungary, new listings gradually entered the equity market; infrastructure and an extensive regulatory framework were mostly set up first. This approach proved to be more successful, resulting in higher liquidity and better performance of stock indices in Hungary and Poland. We shall now assess the size of equity markets and also corporate bonds markets in connection with the comparison of the total structure of the financial sector in the CEC.

Unlike the developed economies, capital markets in the CEC are little used as a source of finance. The ranking of the CEC by the total capitalization of their stock markets differs when measured in absolute or relative terms. Poland had the highest total market capitalization in absolute terms (29 billion EUR at the end of 2001, and 31.4 billion USD at the end of 2000), while Hungary clearly exhibited the highest total market capitalization in relation to GDP, with 25.9 per cent at the end of 2000 (Schardax and Reininger, 2001, p. 45). But compared with the equity markets of advanced economies, even the Hungarian equity market is still small in relation to the size of the economy. Among developed countries, only Austria is an exception in this respect, where equity market capitalization amounted to only 16 per cent of GDP (see Figure 1.7 in Section 1.2).

As stated above, the market turnover ratio measures the volume of domestic equities traded on domestic exchanges relative to the size of the market. In developed countries, a high turnover ratio is often used as an indicator of low transaction costs. For transition economies an important fact is that big stock markets are not necessarily liquid markets. This is apparent from Figure 1.4 with the stock markets in the Czech Republic and the Slovak Republic.

The market capitalization of debt securities largely emulated the absolute size of the economy at the end of 2000 (see Figure 1.5 for selected developed countries and Figure 1.6 for CEC). Similarly to stock market capitalization, debt market capitalization in CEC is much lower than in developed countries. The absolute values of bonds at the end of 2000 were USD (billions) 17.95 for Poland, 9.5 for Hungary, 7.4 and 2.5 for the Czech Republic and Slovakia, respectively. In measuring market capitalization of debt securities relative to GDP, the Hungarian market for debt securities was the largest, followed by the Czech Republic and Poland.



*Figure 1.4* Market turnover in % of market capitalization in CEC (1994–2000)

*Source:* Authors' calculations based on World Bank, World Development Indicators, 2001.

Capitalization of both stock and bond markets relative to GDP was only a fraction in the advanced economies. In addition, given the relatively low levels of GDP per capita of CEC, market capitalization is low. The conclusion by Caviglia *et al.* (2002, p. 21) – that in an international context, only the capital markets of Poland and, to a lesser extent, of the Czech Republic and Hungary, played some role – can be, from that perspective, fully accepted.

## 1.2 Comparison of financial sector structures

The characteristics of financial systems in CEC indicate that they have developed towards bank-based systems – as in Germany or Austria – rather than the market-based systems of the UK or the USA. The analysis we carried out of the structure of the financial sector in CEC confirms this.

There are several different classifications of financial systems used in economic theory. But two basic models are often mentioned: The B-system and the M-system (Allen and Gale, 2000, pp. 1–9), and a combination of both, which is typical in most countries. This differentiation is not new. Gerschenkron (1962) had already sought to explain a perceived relation between the differences in the pattern of economic development between the UK and the continental European economies and the differences between bank-based and market-based financial systems. Since then, a large body of theoretical and empirical research has analysed how financial goals are achieved in a market-based system, and how they are achieved in a system where banks and other financial intermediaries play a major role.

The predominant standing of banks is typical of the B-system, which is based on the fact that companies obtain external resources above all from banks, particularly in such financial markets where banks and their daughter investment companies are the main investors in stocks and bonds. In such a case a financial market is only a supplement to banks granting credits, as well as banks as the main source of investments, which come from deposits of individual and household savings. The M-system is based on the market – households and individuals not only invest directly in stocks and bonds on the capital market, but they also invest more and more in securities through non-bank intermediaries (pension funds, investment funds and so on).

A basic description of a financial sector can thus be based on indicators that reflect the standing and significance of its fundamental segments: financial markets and financial intermediaries. A chosen indicator is usually expressed as a relative magnitude depending on GDP or a similar value, such as comparing different countries using size as the indicator.

An indicator related to the banking sector is usually used to indicate the role of financial intermediaries, for instance, the amount of credits granted by banks, the amount of bank deposits, or the amount of bank assets. In this section, just as in many other research papers, we will be using bank deposits related to GDP.

As an indicator of the financial markets' significance, various indicators of stock markets and bond markets are combined. For instance, the amount of corporate securities and market capitalization of the stock market, especially the amount of corporate bonds, reflects exactly how important financial markets are for intermediation. This approach is used in this analysis as well.

Thus the total sources of the financial sectors and the structure of the financial sectors will be analysed by means of an indicator made up of bank deposits, stock market capitalization and outstanding values of corporate bonds.

From the point of view of absolute size, financial sectors show substantial differences, particularly in developed countries and in transition countries. Figures 1.5 and 1.6 show the size of bank deposits, stock market capitalization and outstanding values of corporate bonds in selected developed and transition countries. It is understandable that in relation to the amount of funds in financial sectors (that is as to the total size of bank deposits, shares and bonds), large countries reached the highest values among developed countries as well as among CEC (Poland), while small countries reached the lowest values (Ireland, Greece, Austria). Since the values for the USA, Japan and the UK noticeably

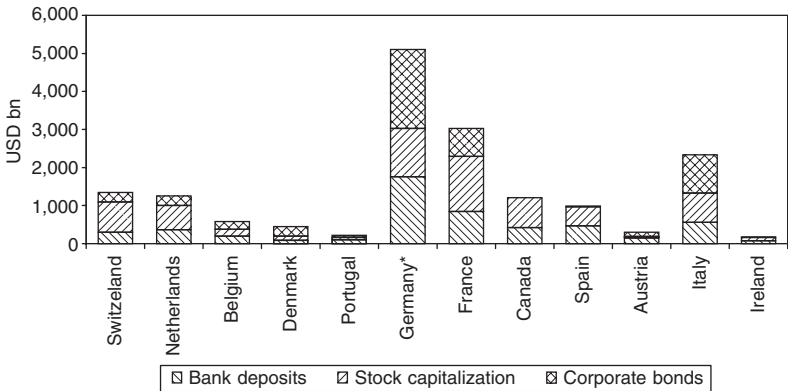


Figure 1.5 Funds of financial sectors in selected developed countries (USD bn, 2000)

\* 1999

Source: Authors' calculations based on World Bank, World Development Indicators, 2001.

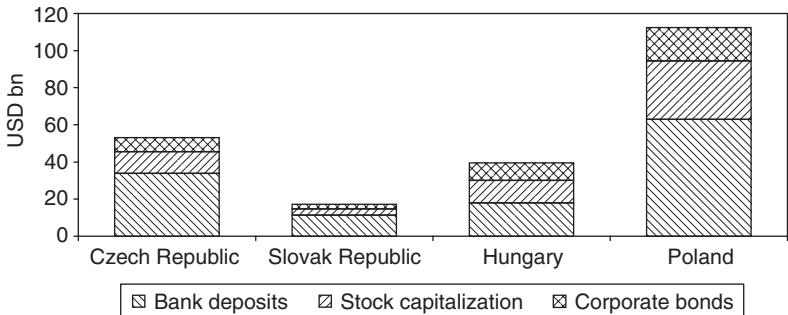


Figure 1.6 Funds of financial sectors in CEC (USD bn, 2000)

Source: Authors' calculations based on World Bank, World Development Indicators, 2001.

exceed the values not only of small European countries but also of other large developed economies (Germany, France and Italy), they are not included in Figure 1.5.

Generally, there is a relatively underdeveloped financial sector as well as a low level of financial intermediation in transition countries. A comparison of funds in financial sectors of developed countries as well as transition countries allows us to come to the clear conclusion that financial sectors in transition countries (measured by size) are far behind those of developed countries. There is a lower efficiency of financial and

banking intermediation in CEC, too. Efficiency of banking intermediation is comprehensively analysed in Chapter 4, Section 4.2.

In comparing the size of financial sectors, it is essential to consider the size of the country's economy and to measure quantitatively the size of the financial sectors relative to the GDP ratio. Figures 1.7 and 1.8, which depict the size of financial sectors as a share of GDP in selected developed and transition countries respectively, confirm that the size of the financial sector is related to the level of economic development of the country.

In developed countries, the share of the financial sector's funds in GDP ranges from 130 to 400 per cent, except Switzerland (not reported

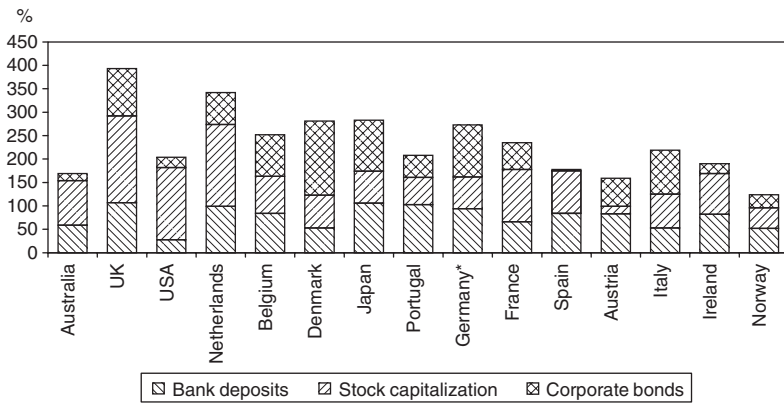


Figure 1.7 Size of financial sectors in selected developed countries (% of GDP, 2000)

\* 1999

Source: Authors' calculations based on World Bank, World Development Indicators, 2001.

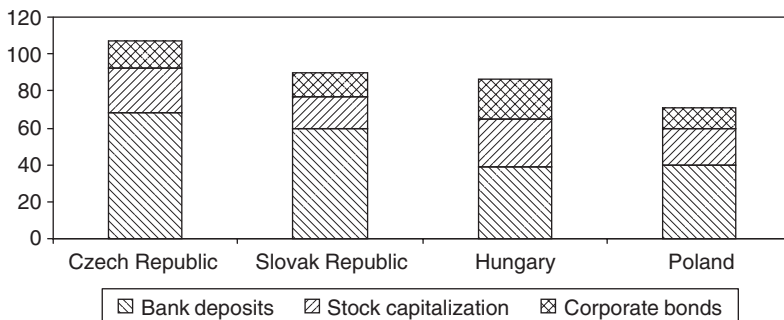


Figure 1.8 Size of financial sectors in CEC (% of GDP, 2000)

Source: Authors' calculations.

in Figure 1.7 since it exceeds 550 per cent [126 + 330 + 102 per cent]). Among transition countries only the Czech Republic has reached an indicator higher than 1.0, and there are indicators higher than 0.8 in only two other countries (Slovakia and Hungary), illustrating that all the CEC, with the exception of Poland, represent the transition countries with the largest financial sector.

Comparison of data in Figure 1.9 and in Figure 1.10 confirm that in the CEC, relatively more funds are reallocated by the banking sector than by capital markets. With the exception of Hungary, Lithuania and Estonia, the share of the banking sector in all the other countries

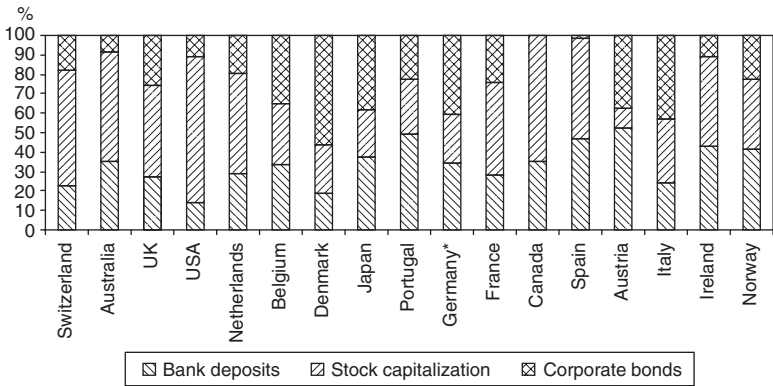


Figure 1.9 Structure of financial sectors in selected developed countries (% , 2000) \* 1999

Source: Authors' calculations.

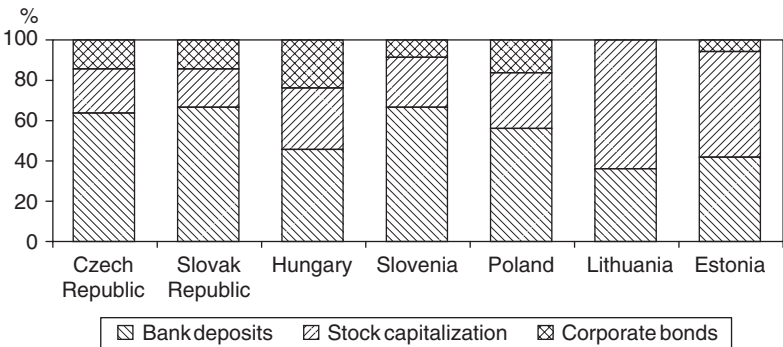


Figure 1.10 Structure of financial sectors in selected transition countries (% , 2000)

Source: Authors' calculations.

is higher than 50 per cent. In the case of the Ukraine, Moldova and Lithuania, the high share of the financial market is a result of voucher privatization. Although banking sectors in transition countries are relatively small, they dominate the financial sector because of the other segments of the financial sectors (capital markets) are even less developed.

Capital markets evidently play a much more important role in developed countries. They do so even in countries where the financial system is based on the banking sector (Germany) and where financial systems are considered to be B-systems (Allen and Gale, 2000, Chs 1 and 3). The corporate bonds market is quite developed in Denmark, Italy and also in Austria. The market for corporate bonds is relatively narrow in transition countries. In the Czech Republic, the bond market is one of the most developed segments of the capital market, but corporate bonds comprise only around one quarter of it. In some transition countries, the market for corporate bonds does not exist at all – companies do not obtain funds in this market.

Financial sectors have recorded relatively important changes in some countries in recent times. Data imply that many more changes take place in developed countries (see Figure 1.11), while in transition countries, serious changes or explicit trend changes are rather the exception (Figure 1.12).

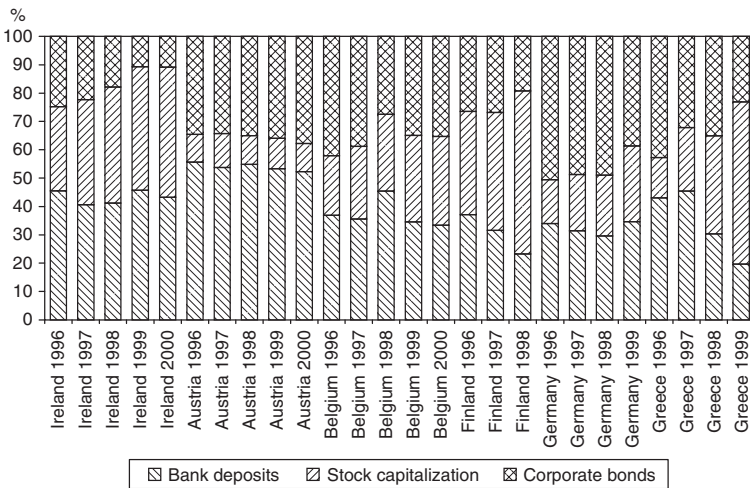


Figure 1.11 Development of the financial sector's structure in selected developed countries (%), 1996–2000

Source: Authors' calculations.

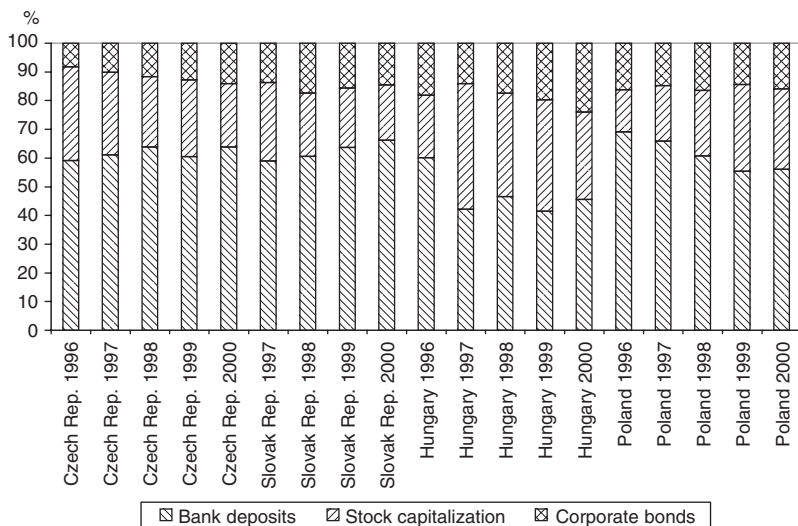


Figure 1.12 Development of the financial sector's structure in CEC (% , 1996–2000)

Source: Authors' calculations.

In developed countries, for instance in Finland and Greece, a serious change in the structure of the financial sector is apparent. In Finland, companies and households boldly invested in the capital market after the banking crisis at the beginning of the 1990s, which was followed by the loss of confidence in the sector. Securities issued in Finland grew very rapidly, especially in 1995–99. Therefore, the financial system in Finland is unambiguously the M-system (Figure 1.11). In most developed countries, the financial system stays relatively diversified, especially in comparison with the CEC, where changes in the structure of the financial sector are rather exceptional, with a lasting high share of banking intermediation. Possibly, only in the case of Poland (and Slovenia, not displayed in the figure) can we record a more permanent decrease of bank intermediation to the detriment of financial markets.

In the CEC, the structure of the financial sector is usually considered not to be well developed. In particular, a point to be criticized is the low share of financial markets in financial intermediation. The fact is that during recent years there has been a general trend towards strengthening market systems and growing financial markets to the detriment of the banking sector. But this trend has not been supported by clear conclusions or economic theory statements declaring which financial

system is more effective – whether the B-system or the M-system. Is the current trend toward market-based systems desirable? (Allen and Gale, 2000, Ch. 1). The answer is not unambiguous, in particular if we take into account that countries with a higher share of the banking sector in the economy (as, for instance, Japan or Germany) reached a higher growth in their GDP, as Freixas and Rochet (1998, pp. 7–8) report. Nowadays, numerous empirical research studies point to the fact that it is irrelevant whether the financial sector of a country is bank-based or market-based in influencing long-term economic growth. Most countries are still looking for a suitable, ‘tailor-made’ financial system. There is a huge variety of financial systems among countries. For the time being, the only certainty is that an optimal, healthy and effective financial sector needs a well-balanced structure that must rely on both the developed banking sector and the working financial market. Countries with underdeveloped banking and financial sectors, low level of financial intermediation and illiquid financial markets may have problems with effective resource allocation, effective level of savings and investments, effective intermediation and therefore, stability of economic growth.

A comparison of transition and developed countries confirms that financial sectors in transition countries are still relatively narrow and also depend on banking intermediation. In addition, there are enormous differences in the relative size of financial sectors among transition countries, as well as in the structure of their financial sectors. In recent years (1996–2000) we have not seen any serious changes in the financial sectors of transition countries with regard to their structure.

### **1.3 Development and restructuring of banking sectors in the CEC**

The term ‘restructuring of the banking sector’ can be understood from either a broader or narrower point of view. The broader definition covers radical and significant changes which affect all banks in the sector and consequently influence the whole economy. Changes in ownership structure, implementations of new forms of banking business, concentration or changes of the banks’ role in the economy are the main aspects. This chapter focuses on the broader formulation of the restructuring process.<sup>8</sup> We will emphasize the total number of operating banks, their dispersion to specific groups according to their size, changes in ownership structure and concentration of the banking sector characterized by market shares or mergers and acquisitions.

All CEC banking sectors have gone through several disruptions and developmental periods of crucial importance, which have gradually created their new shape and structure. The establishment of two-tier banking systems based on market principles characterized the first stage. In this period, a completely new legal and institutional framework had to be established.

In the former Czechoslovakia, the two-tier banking system came into effect in January 1990. The following period (1990–93) was distinct in that the banking market opened up with the establishment of many new small banks supplied with domestic capital. The quick growth of banking institutions was caused by demand factors because of the gap between supply and demand of banking products. Gradually, this development reflected the improvement of a regulatory framework, creating new operational guidelines and principles for banks' prudential behaviour.

The significant decline in the growth of a number of banks started at the end of 1993, caused above all by a more restrictive licence policy of the Czech National Bank (ČNB). Step-by-step capital requirements as well as other requirements for granting a bank licence were in effect tightened up. This meant that there were – according to the ČNB – too many banks in the Czech Republic and the ČNB even refrained from granting licences to strong foreign banks. The recommendation of the ČNB was to obtain a share or to merge with already licensed banks. But buying mostly non-transparent banks with NPLs appeared to be very risky. That is one of the reasons why foreign investors entered the banking sector in the Czech Republic only at the end of the 1990s.

Escalation of small banks' problems that resulted in failures of many of them (Hölscher, 2000) worsened the situation of the whole banking sector. Even the largest banks could not avoid immediate problems and the crisis of credibility afflicted the entire Czech banking system (Polouček, 1999, p. 188, and ch. 5). The ČNB's Department of Banking Supervision acknowledged accountability for some problems in the banking sector during these years; on the other hand, however, the Central Bank did not accept responsibility. Table 1.4 illustrates the growth and decline in the number of banks<sup>9</sup> in the Czech Republic during this period.

In the period 1997–99, the Czech banking system confronted a serious crisis caused by a sluggish restructuring of companies, a slack regulation regime, growing bank debts and deep losses in the largest banks. The concentration of the banking sector is the most notable feature of this developmental stage (Chapter 3 deals with the concentration of banking

*Table 1.4* Number of banks by group in the Czech Republic (1990–2001)

	<i>1.1.90</i>	<i>31.12.90</i>	<i>31.12.91</i>	<i>31.12.92</i>	<i>31.12.93</i>	<i>31.12.94</i>	<i>31.12.95</i>	<i>31.12.96</i>	<i>31.12.97</i>	<i>31.12.98</i>	<i>31.12.99</i>	<i>31.12.00</i>	<i>31.12.01</i>
Banks, total	5	9	24	37	52	55	55	53	50	45	42	40	38
of which:													
Large banks	5	5	6	6	5	5	5	5	5	5	5	4	3
Medium-sized banks					2	5	10	9	13	12	12	11	10
Small banks*		4	18	27	32	30	24	19	13	12	9	8	8
Foreign bank branches				3	7	8	10	9	9	10	10	10	10
Building societies				1	5	6	6	6	6	6	6	6	6
Under conservatorship				0	1	1	0	5	4	0	0	1	1
Banks without licences				0	0	1	4	6	10	18	21	23	25

\* Until 1992 including foreign banks.

Source: ČNB.

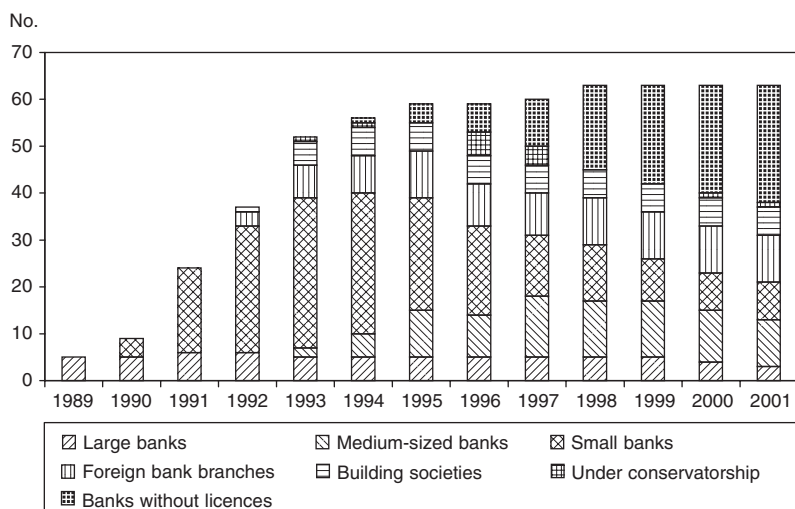


Figure 1.13 Number of banks (Czech Republic, 1989–2001)

Source: Authors' calculations.

sectors in transition countries). The main sources of concentration can be identified by the gradual decrease of the total number of small banks since 1995, the progress of medium-sized banks, privatization, mergers and acquisitions.

The development of the number of banks is portrayed in Figure 1.13 in the years 1989–2001 in the Czech Republic, confirming not only the fast-growing number of banks at the beginning of the 1990s but also the growing number of banks without licence as well as banks under conservatorship.

As outlined above, there have been shifts in the total number of active banks in the Czech Republic since 1990. The sharp decline in the number of small banks is associated with the revoking of their licences because of poor performance as well as the increase in the number of foreign banks, which gradually formed part of the group of medium-sized banks. Out of the 63 banking licences granted since 1989, a total of 23 had been terminated, 17 of them due to poor financial conditions and non-compliance with rules of prudence initiated by the ČNB's Department of Banking Supervision and also at the request of the banks themselves. Seven banking licences had been terminated because of sales and mergers, and one bank failed to start operating within the mandatory deadline. Some licences were terminated because of poor

performance from 1999 until 2001, and others as a result of mergers and acquisitions.

The growth in the number of banks in the Czech Republic and in the other CEC since 1996 is illustrated in Table 1.5, and the growth in the number of commercial banks in Table 1.6 and Figure 1.14. These tables take into account a particular method of indicating the number of financial institutions of the banking sector in the CEC.<sup>10</sup>

It is apparent from the data in Tables 1.5 and 1.6 that both the number of regular and commercial banks has gradually decreased in the CEC. The number of entities operating as commercial banks in the Czech Republic and in the Slovak Republic declined considerably in the period studied. In Hungary, the number of commercial banks increased until 1997, afterwards it began to drop. Since cooperative banks and credit unions were categorized as banks in Poland and Hungary, there was a large decrease in numbers in these countries. To a great extent this was due to their declining assets compared to the commercial banks.<sup>11</sup>

As is apparent from Table 1.7, the decline in the number of commercial banks in CEC decelerated towards the end of the 1990s both

Table 1.5 Number of banks in CEC (1996–2001)

	1996	1997	1998	1999	2000	2001	Index 2001/1996
Czech Republic	53	50	45	42	40	38	71.7
Hungary	289	289	282	256	238	231	79.9
Poland	1475	1378	1272	858	754	713	48.3
Slovakia	29	29	27	25	23	21	72.4
Total CEC	1846	1746	1626	1181	1055	1003	54.3

Source: Authors' calculations based on data of national banks of CEC.

Table 1.6 Number of commercial banks in CEC (1996–2001)

	1996	1997	1998	1999	2000	2001	Index 2001/1996
Czech Republic	53	50	45	42	40	38	71.7
Hungary	42	46	45	44	43	42	100.0
Poland	81	83	83	77	74	71	87.7
Slovakia	29	29	27	25	23	21	72.4
Total CEC	205	208	200	188	180	172	83.9

Source: Authors' calculations based on data of national banks of CEC.

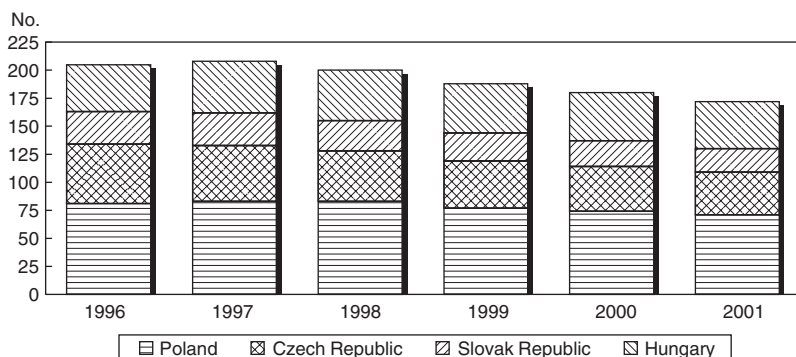


Figure 1.14 Number of commercial banks in CEC (1996–2001)

Source: Authors' calculations.

Table 1.7 Changes in numbers of commercial banks in CEC (1996–2001)

	1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%
Czech Republic	-3	-5.7	-5	-10.0	-3	-6.7	-2	-4.8	-2	-5.0
Hungary	4	9.5	-1	-2.2	-1	-2.2	-1	-2.3	-1	-2.3
Poland	2	2.5	0	0.0	-6	-7.2	-3	-3.9	-3	-4.1
Slovakia	0	0.0	-2	-6.9	-2	-7.4	-2	-8.0	-2	-8.7
CEC	3	1.5	-8	-3.8	-12	-6.0	-8	-4.3	-8	-4.4

Source: Authors' calculations.

absolutely and relatively – measured as a percentage of the entire number of commercial banks. This fact resulted in increasing concentration in the banking sector of the CEC (see Chapter 3) and is manifested in the increasing average volume of assets per commercial bank.

The declining number and the development of assets of commercial banks (Figure 1.15) brought about changes in bank grading according to size and logically led to the growth of the average volume of assets per one bank in each of the CEC.

The Czech Republic showed the highest average size of assets of one active bank (Table 1.8 and Figure 1.16). Since 1996, the indicator rose by 47.2 per cent.

The most dynamic development was manifested in Poland, where the average size of assets of one active bank increased twofold and came close to approximately 80 per cent of the Czech level in the same period.

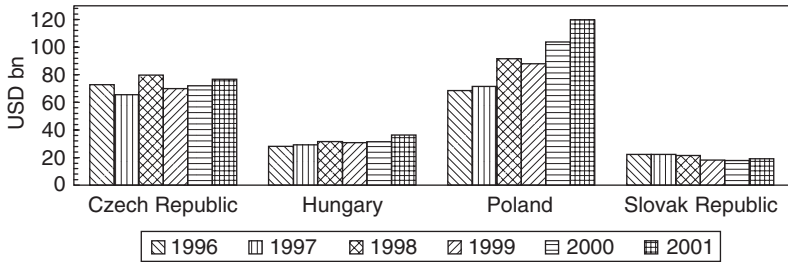


Figure 1.15 Assets of commercial banks in CEC (USD bn, 1996–2001)

Source: Authors' calculations.

Table 1.8 Average assets per commercial bank in CEC (USD mn, 1996–2001)

	1996	1997	1998	1999	2000	2001	Index 2001/1996
Czech Republic	1 373.1	1 309.7	1 773.2	1 663.8	1 800.8	2 021.1	147.2
Hungary	635.9	603.8	665.9	663.0	688.9	812.2	127.7
Poland	807.0	823.0	1 055.5	1 092.7	1 345.1	1 610.7	199.6
Slovakia	774.7	770.2	798.9	728.5	777.1	915.0	118.1
CEC	913.7	884.1	1 094.7	1 071.3	1 217.0	1 421.4	155.6

Source: Authors' calculations.

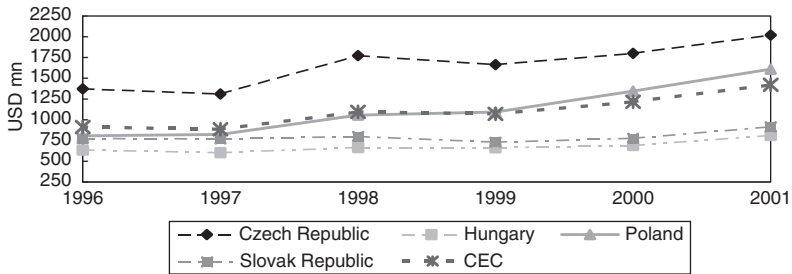


Figure 1.16 Average assets per commercial bank in CEC (USD mn, 1996–2001)

Source: Authors' calculations.

The Polish banking sector differs somewhat from its Czech counterpart, not only because the Polish economy is noticeably larger, but also because there are more banks in its banking system. As data and further analysis confirm, it has a considerably lower concentration in its banking sector (see Chapter 3). In the Slovak Republic and Hungary, the indicator is much lower. Both countries demonstrate that the average

volume of assets per commercial bank is lower than the CEC average. The dynamics in the development of the above mentioned countries is also lower than that of the Czech Republic and Poland.

From the banking sector's point of view of the share of the different bank groups in total assets, there was, above all, an increasing share of medium-sized banks and a rapidly decreasing share of small banks. Concurrently, the share of foreign bank branches increased and the share of large banks decreased. The positive influence of foreign banks on the banking sector in all CEC is evident (see Chapter 4). Since the beginning of the 1990s, foreign banks have been bringing in new products, services, know-how and management procedures of a higher quality, not to mention invested capital. In the Czech Republic, foreign banks also started an expansion in the retail banking market only a few years ago, which corresponds to shifts in the banking sector's market shares. Above all, the share of large banks decreased. Detail segmentation is shown in Table 1.9.

Privatization was the crucial factor affecting the ownership structure during the transformation process. Foreign strategic investors (foreign banks) became the new owners of the largest Czech banks which were formerly state-owned. This hugely strengthened representation of foreign capital to the detriment of state claims. The rate of increase in capital in Czech-owned as well as foreign-owned banks, along with failures of small banks supplied only with Czech capital, also determined the ownership structure of the Czech banking sector.

Linking all the developments mentioned above, the growing number of investors from European Union countries was accompanied by an

*Table 1.9* Share of bank groups in the banking sector's total assets in the Czech Republic (%), 1994–2001)

	1994	1995	1996	1997	1998	1999	2000	2001
Large banks	73.7	70.0	68.1	66.6	66.2	65.0	61.9	58.6
Medium-sized banks	9.1	14.7	12.6	16.4	16.9	17.4	19.6	21.4
Small banks	12.3	8.2	6.9	3.1	3.2	1.7	2.0	2.3
Foreign bank branches	4.0	6.0	6.4	7.8	9.5	11.4	11.1	12.0
Building societies	0.6	1.1	2.0	3.0	4.2	4.5	4.8	5.7
Banks under conservatorship	0.3	0.0	4.0	3.1	0.0	0.0	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ČNB.

Table 1.10 Ownership structure of the Czech banking sector (% , 1994–2001)

	1994	1995	1996	1997	1998	1999	2000	2001
State, municipalities	29.1	31.5	31.0	20.3	25.1	27.0	23.6	4.3
Czech private	48.3	45.7	44.9	50.2	36.2	24.7	21.9	25.7
USA	1.3	2.8	4.3	3.1	4.6	7.5	7.7	6.3
EU countries	13.1	13.3	15.1	22.1	28.6	37.3	43.5	58.1
Other foreign	8.2	6.7	4.7	4.3	5.5	3.5	3.3	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ČNB.

almost symmetrical decrease in Czech capital shares in the banking sector. This was quite a prominent development tendency. In spite of the continuing process of privatization, the share of the state and municipalities' ownership has remained, since 1997, almost at the same level. The implementation of privatization and the decrease of the government share in the banking sector also required the participation of the state in the pre-privatization capital increases of large banks. State shares plummeted dramatically after the privatization of Komerční banka in 2001. Tables 1.10 and 1.11 give detailed information.

A significant role of foreign capital in the Czech banking sector is also apparent in relation to the amount of capital. More than 50 per cent of capital under the control of foreign-owned banks as of 31 December 2000, and after the privatization of Komerční banka in 2001, the share rose even higher to 70 per cent.

The privatization of the Hungarian banking sector, which took place in the wake of the bank restructuring programmes between 1993 and 1994, was completed by the second half of the 1990s. Privatization was carried out in the form of open tenders, and one of the new responsibilities undertaken by the new owners was to reinforce further bank capital. As a result, today's foreign strategic owners hold some two-thirds of the Hungarian banking sector. The year 2001 witnessed only minor changes in the ownership structure of the banking system. Foreign ownership decreased by 3.6 percentage points to 63 per cent at the year end, whereas the share of state ownership through domestic equity holdings rose at the expense of credit institutions, enterprises and individuals.

In Poland, in December 2001, there were 71 commercial banks. The ownership structure had perceptibly changed in the course of the 1990s as a consequence of privatization of state-owned banks. In 1993, the state still owned, directly or indirectly, 29 banks, representing 80 per cent of the assets and 77 per cent of the capital of the banking sector in

*Table 1.11* Ownership structure of the three largest banks in the Czech Republic before and after privatization (%)

31. 12. 1997		ČSOB 31. 12. 1999		30. 6. 2002	
ČNB	26.5	KBC Bank NV	82.3	KBC Bank NV	81.5
Ministry of Finance	19.6	EBRD	7.5	EBRD	7.5
NPF	19.6	IFC	4.4	IFC	4.4
Others from the Czech Republic	8.5	Shareholders from the Czech Republic	4.5	Others	6.6
NBS	24.1	Shareholders from the Slovak Republic	1.4		
Others from the Slovak Republic	1.7				
Total	100.0	Total	100.0	Total	100.0
30. 6. 1999		ČS 31. 12. 2000		30. 6. 2002	
NPF	52.1	Erste Bank	52.6	Erste Bank	52.4
Česká pojišť'ovna	9.2	Česká pojišť'ovna	8.6	AVS	32.6
Municipalities	7.4	Municipalities	7.4	Municipalities	7.4
EBRD	5.9	EBRD	5.9	Česká pojišť'ovna	5.0
Others	25.4	Others – foreign	21.5	Others	3.0
		Others – domestic	4.0		
Total	100.0	Total	100.0	Total	100.0
30. 6. 1999		KB 31. 12. 2001		30. 6. 2002	
NPF	49.0	NPF	60.0	Société Générale	60.0
The Bank of NY	18.0	The Bank of NY	6.7	The Bank of NY	7.4
RIF	3.0	Chase Nominees	2.0	Others	32.6
Česká pojišť'ovna	3.0	Chase Ireland L.	1.6		
PIAS fund	2.0	Others	29.8		
Bank Austria	2.0				
Others	23.0				
Total	100.0	Total	100.0	Total	100.0

Source: Annual reports of ČSOB, ČS and KB.

Poland. On the other hand there were only seven banks controlled by the state at the end of the year 2001, representing 23.1 per cent and 12.5 per cent, respectively, of banking assets and total capital. Foreign strategic investors had acquired most of the capital in the largest Polish banks. Aside from commercial banks, cooperative banks are an important

element of the banking sector, however small, in asset terms. The privatization agenda has not been completed, however, with the largest retail bank PEKAO still government-owned. The government holds shares directly in three banks: two banks in the top 11 with respect to asset size, and one minor bank. As a result of previous government efforts, investors are diversified in respect of country of origin. The shares of different countries are fairly equal, with a slight domination of American and German banks (22 and 20 per cent of foreign capital, respectively). The variety of investors should protect the Polish market from excessive exposure to the country's problems. The important feature of the presence of foreign capital in Poland is the legal status of banks. Contrary to the situation in the Czech Republic, all the 45 foreign-owned banks except one are subsidiaries. This leads to capital being invested within the country and renders the banks subject to supervision by a Polish agency, thus giving some degree of reassurance in case of financial distress.

In the Slovak Republic, towards the end of 2001, state ownership, on the basis of registered capital, accounted for 36.7 per cent of the banking sector. The residual share is in private ownership, and foreign investors account for 60.6 per cent. As a consequence of privatization in the first half of the year 2002, the share in foreign capital increased to 82.8 per cent. From a territorial point of view, foreign capital includes capital from Luxembourg, Austria, the Czech Republic, Holland, Italy, the UK, the USA, and to a lesser extent also from Germany and France.

## **1.4 Conclusion**

Today's banking sector in transition countries, its structure and its development, have been notably influenced by the first years of transformation. Apparently, the development of the CEC banks is proceeding very quickly and their financial force and know-how are currently at an incomparably higher level than several years ago. Data from the EBRD *Transition Report* (cf. EBRD *Transition Report*, November 1999 and November 2001) confirm a noticeable progress, but also serious differences among transition countries. CEC are without any doubt among the best performers. Now the banking sectors of these countries have aligned themselves closely with the standards of smaller developed countries according to the number and structure of banking institutions and to the number of banking locations. Nevertheless, it is necessary to take into account that in most CEC, even the strongest and soundest banks are in international terms banks, and are not too unsound. Domestic banks still have to take many steps to approach the level of

banks in most advanced countries. At the same time the analysis presented confirms that the Czech Republic, Slovakia, Poland and Hungary have much in common (starting with their transition from centrally planned economies to market economies), but also many differences in their financial and banking sector development.

## Notes

1. See Levine (1997) for a literature review on the importance of financial development for economic growth. Recent relevant studies also include Beck *et al.* (2000a); for the Czech Republic see Kulhánek (2002), among others.
2. For example, Beck *et al.* (2000b) find that measures of the initial level of financial depth and stock market liquidity have independent causal effects on the subsequent rates of GDP growth and economic efficiency improvements.
3. To measure a bank's development Rousseau and Wachtel (2000) use M3/GDP. King and Levine (1993a, 1993b) use the total liquid liabilities of financial intermediaries (M3) divided by GDP and show that the bank's development helps explain economic growth in a sample of more than 80 countries.
4. For the Czech Republic: M2 = currency in circulation + CZK demand deposits + CZK time deposits + deposits bills of exchange and other bonds (01/98–12/00 incl. certificates of deposit) + foreign currency deposits. Hungary: M2 = sight and time (including savings) deposits in HUF and all foreign currencies. Poland: M2 = domestic money supply (cash in circulation excluding cash in foreign currencies and deposits of households and the corporate sector in domestic currency) + foreign currency deposits of households and the corporate sector. Slovak Republic: M2 = currency outside banks + demand deposits and saving deposits without statutory notice held by domestic non-banks (residents + non-residents, in SKK) exclude deposits of central and local government + time deposits and savings deposits at statutory notice including deposit certificates + deposits in foreign currencies held by residents with domestic banks exclude deposits of central and local government.
5. Caviglia *et al.* (2002) came to a similar conclusion. If another, much higher figure is given in statistics for the Czech Republic (Wagner and Iakova, 2001, Table 1), then the high ratio in the Czech Republic reflects, in part, incomplete consolidation of the aggregate balance sheets, with double-counting of interbank credits.
6. Own calculation for end of 2000 based on World Development Indicators, Series: Domestic credit provided by banking sector (per cent of GDP) (FS.AST.DOMS.GD.ZS) and ECB (2002b).
7. There is more about privatization in the banking sectors of CEC in Section 1.3 and Chapter 4, Section 4.3.
8. The narrower definition of the banking sector's restructuring is considered as specific changes of one individual bank or group of banks with similar characteristics. They mainly relate to the restructuring of credit portfolios and covering losses from non-performing loans by provisions and reserves.
9. The Department of Banking Supervision of the ČNB stated in its reports a division of banks into large and small banks, foreign banks, foreign banks

branches and specialized banks until 1999. Since 2000, the ČNB has also stated, besides large banks and small banks, a separate group of medium-sized banks. The cohesive criterion for banks' division into groups is the size of total balance. The group of large banks includes banks with total balance higher than CZK 100 billion, among medium-sized banks are ranked banks with total balance between CZK 15 and 100 billion.

10. In the Czech Republic, financial institutions ('banks') are entirely represented by institutions of 'commercial banks'. Pursuant to the Act on Banks, commercial banks in the Czech Republic have the only legal status of joint-stock companies. The Act on Banks does not provide for the establishment of cooperative banks. Credit unions are not part of the banking sector. In the Slovak Republic, 'banks' are identical as to content with 'banks' in the Czech Republic. 'Commercial banks', on the other hand, do not include branches of foreign banks. In Hungary, both commercial banks and specialized credit institutions, and 'cooperative banks' are classed as financial institutions ('banks'). Credit unions are not mentioned. In Poland, the components of the financial system are classified into 'banks' and 'credit unions'; both 'commercial banks' and 'cooperative banks' are classed as 'banks'.
11. In Hungary, assets of 255 cooperative banks amounted to USD 1,462 million, 1996, and assets of 42 commercial banks and specialized institutions to USD 26,708 million, that is 5.16 per cent as against 94.84 per cent. In Poland, in 1996, assets of 81 commercial banks, 1,394 cooperative banks and 168 credit unions amounted to USD 65,365.9 million, USD 3,171.7 million and USD 76.3 million, respectively. In 2001, they amounted to USD 114,357.3 million, USD 5,395.7 million and USD 445.8 million, respectively.

## References

- Allen, F. and Gale, D. *Comparing Financial Systems* (Cambridge, MA and London: The MIT Press, 2000).
- Anderson, R. and Kegels, Ch. *Transition Banking – The Financial Development of Central and Eastern Europe* (Oxford: The Clarendon Press, 1998).
- Beck, T., Levine, R. and Loayza, N. 'Finance and the Sources of Growth', *Journal of Financial Economics*, LVIII, 1–2 (2000a), 261–300.
- Beck, T., Levine, R. and Loayza, N. 'Financial Intermediation and Growth: Causality and Causes', *Journal of Monetary Economics*, XLVI, 1 (2000b), 31–77.
- Begg, D. and Portes, R. 'Enterprise debt and economic transformation: financial restructuring in central and Eastern Europe', in Mayer, C. and Vives, X. (eds), *Capital Markets and Financial Intermediation* (London: Cambridge University Press, 1993).
- Caviglia, G., Krause, G. and Thimann, Ch. 'Key features of the financial sectors in EU accession countries', in *Financial Sectors in EU Accession Countries* (Frankfurt: ECB, 2002).
- European Central Bank (2002a). *Financial Sectors in EU Accession Countries* (Frankfurt: ECB, 2002, <http://www.ecb.int/pub/pdf/financialsectorseuaccession.pdf>).
- European Central Bank (2002b). *Monthly Bulletin*, 7 (2002b).

- Freixas, X. and Rochet, J.Ch. *Microeconomics of Banking* (Cambridge, MA and London, UK: MIT Press, 1998).
- Gerschenkron, A. *Economic backwardness in Historical Perspective – A Book of Essays* (Cambridge, MA: Harvard University Press, 1962).
- Goldsmith, R.W. *Financial Structure and Development* (New Haven, CT: Yale University Press, 1969).
- Hölscher, J. (ed.), *Financial Turbulence and Capital Markets in Transition Countries* (London: Macmillan, 2000).
- King, R.G. and Levine, R. 'Finance and Growth: Schumpeter Might Be Right', *Quarterly Journal of Economics*, 108, 3 (1993a), 717–38.
- King, R.G. and Levine, R. 'Finance, Entrepreneurship, and Growth', *Journal of Monetary Economics*, 32, 3 (1993b), 513–42.
- Kulhánek, L. 'Financial Markets and the Gross Domestic Product in the Czech Republic and in the EU Countries', in *Transition Countries Joining the European Union* (Karviná, Canakkale: Silesian University, Canakkale Onsekiz Mart University 2002).
- Levine, R. 'Financial Development and Economic Growth: Views and Agenda', *Journal of Economic Literature*, 35 (1997), 688–726.
- Levine, R. and Zevros, S. 'Stock Markets, Banks, and Economic Growth', *American Economic Review*, 88, 3 (1998), 537–58.
- McKinnon, R.I. *Money and Capital in Economic Development* (Washington, DC: Brookings Institution, 1973).
- Polouček, S. *České bankovníctví na přelomu tisíciletí* (Ostrava: Ethics, 1999).
- Rousseau, P.L. and Wachtel, P. 'Financial Intermediation and Economic Performance: Historical Evidence from Five Industrial Countries', *Journal of Money, Credit, and Banking*, 30, 4 (1998), 657–78.
- Rousseau, P.L. and Wachtel, P. 'Equity Markets and Growth: Cross Country Evidence on Timing and Outcomes, 1980–1995', *Journal of Business and Finance*, 24 (2000), 1933–57.
- Schardax, F. and Reininger, T. 'The Financial Sector in Five Central and Eastern European Countries: An Overview', *Focus on Transition*, 1 (2001), 30–64.
- Stability and Structure of Financial Systems in CEC5*. Background document for the CEC5 Governors' meeting (Warsaw: NBP, 2002).
- Wagner, N. and Iakova, D. 'Financial Sector Evolution in the Central European Economies: Challenges in Supporting Macroeconomic Stability and Sustainable Growth' (*IMF Working Paper*, 141, 2001).
- International Financial Statistics. International Monetary Fund, *Statistical Yearbook*, 2000.
- Central banks' web pages, Commercial banks' web pages.

# Index

Note: 'n.' after a page reference indicates the number of a note on that page.

- ABN AMRO 107
- absolute concentration of banking sectors 57
- acquisitions *see* mergers and acquisitions
- Act on Banks (Czech Republic) 29 n. 10
- Agrobank 71 n. 8, 114
- Albania 44
- Allied Irish Bank 107
- allocative efficiency 76, 77
- Argentina
  - currency crisis 144, 145, 167 n. 5
  - NPLs 112
- asset quality in banks 111–12
- Australia
  - concentration of banking sector 69
  - structure of financial sector 13, 14
- Austria
  - banking sector: capitalization 114; deposit insurance scheme 42; efficiency 96; NPLs 111; privatization 107; profitability 110; supervision 43, 44
  - equity market capitalization 9
  - investment in CEC 27
  - optimal currency area 195, 197
  - structure of financial sector 10, 11, 12, 13, 14, 15
- BA/CA 107
- balance of payments 143, 158
- Balassa–Samuelson (BS) effect 184–7
- Banca Commerciale Italiana/Intesa 107
- Banco Commercial Portugues 107
- Banco di Napoli 111
- Banka Slovakia 108
- Bank Austria Creditanstalt 107
- Bank Austria Creditanstalt Czech Republic 63
- bank deposits
  - intermediation depth 3, 8
  - structure of financial sector 11–16
- Bankgesellschaft Berlin 107
- Bank Handlowy 132 n. 10
- Banking Act (Czech Republic) 36–7, 41
- Banking Act (Hungary) 37
- banking assets 3, 5–7
- banking sectors 1, 27–8
  - concentration, *see* concentration of banking sector
  - crises 144
  - development and restructuring 5, 17–27
  - efficiency *see* efficiency of banking sector
  - intermediation 1–3, 4–8
  - profitability *see* profitability of banking sector
  - regulation and supervision 31–3, 46–7: deposit insurance schemes 41–3; entry and exit 38–41; institutional framework 43–6; legislative framework 35–8; role and place 33–5
  - structure 10–17
- bank loans
  - Czech Republic 37–8
  - intermediation depth 3, 7–8
- Bank of England 46
- Bank Slaski 108
- Barings Bank 46
- Basel Committee on Banking Supervision 113
  - Czech Republic 335, 36
  - risk factors 116, 124
- Bayerische Landesbanken 107
- BCC model 81, 85–6, 127
- cross-country analysis 90–3, 97–100, 104, 130–1
- Belgium
  - banking sector: capitalization 114; deposit insurance scheme 42;

- Belgium – *continued*  
 efficiency 87, 93–6, 97,  
 98–105, 130; NPLs 112;  
 privatization 107; profitability  
 110; supervision 43, 44  
 optimal currency area 195, 197  
 structure of financial sector 12, 13,  
 14, 15
- bond markets 9–16
- Brazil 112
- B-systems (bank-based) 10–11,  
 15, 17
- Bulgaria  
 banking sector structure and  
 performance 69  
 exchange rates 139, 200; PEPs  
 204; segmentation of accession  
 countries 201–2, 205, 206
- Canada  
 concentration of  
 banking sector 69  
 deposit insurance scheme 42  
 optimal currency area 197  
 structure of financial sector 12, 14
- Capital Adequacy Directive 113
- capitalization of banks 113, 114, 115
- capital risk (QR) 116, 118–26, 128
- capture banks 35, 39
- CCR efficiency 84, 92
- CCR model 81–5, 86, 127
- cross-country analysis 90–3, 97,  
 99–100, 104, 130–1
- central banks  
 convergence, nominal and real  
 171  
 euro, introduction discussions  
 169–70  
 supervision 43–5  
*see also named central banks*
- central planning 2, 6
- Česká konsolidační agentura  
 (Consolidation Agency) 62, 129
- Česká národní banka (ČNB)  
 development and restructuring of  
 banking sector 18, 20  
 exchange rate appreciation 185  
 Herfindahl–Hirschman Index 70,  
 70 n. 4
- inflation targets and price-level  
 convergence 182
- regulation and supervision 46:  
 Department of Bank  
 Supervision 61; entry  
 and exit 39, 47 n. 4;  
 institutional framework  
 45; legislative framework  
 35–7; role and place  
 of 34
- Česká pojišť'ovna 64
- Česká spořitelna 32, 38  
 capitalization 114  
 concentration of banking sector  
 62, 71 n. 8, 71 n. 9  
 efficiency 132 n. 10  
 privatization 108, 109
- Československá obchodní banka  
 (ČSOB) 38  
 capitalization 114  
 concentration of banking sector  
 62, 64, 71 n. 8  
 privatization 114
- Chile 112, 167 n. 5
- CIB Bank 132 n. 10
- Citibank 105, 107
- CMEA 32
- Colombia 112
- commercial banks  
 Czech Republic 32: deposit  
 insurance schemes 41, 43;  
 entry and exit 38–40;  
 institutional framework 46;  
 regulation and supervision 34,  
 35, 36
- development and restructuring of  
 banking sector 21–4, 25–6
- efficiency 87–8
- competition  
 banking regulation and  
 supervision 34: Czech  
 Republic 38, 39  
 concentration of banking sectors  
 49–50, 52, 55–6, 61, 70  
 exchange rates 176, 179–80  
 macroeconomic instability,  
 costs of 139  
 profitability of banking sector 110,  
 127: privatization 106

- concentration of banking sectors  
 49, 68–70  
 concept 56–60  
 development and restructuring of  
 banking sector 18–20, 22  
 economic theory 49–56  
 measurement 56–60  
 profitability 127  
 transition economies 61–8
- concentration ratio 57, 58–9, 64
- confidentiality issues, banking  
 supervision 45
- Consolidation Agency (Česká  
 konsolidační agentura) 62, 129
- Consolidation Bank (Konsolidační  
 banka) 62, 63, 129
- consolidation banks 70–1 n. 7, 111
- consumer sector, risk of lending to 5
- convergence  
 interest rates 188  
 monetary policy challenges 187–8  
 nominal and real 171–5  
 price levels 181–6  
 real exchange rate as indicator  
 176–9
- cooperative banks 21, 26–7
- Copenhagen criteria  
 Balassa–Samuelson effect 185, 186  
 convergence, nominal and real  
 171, 172  
 inflation 184
- corporate bond markets 9–16
- corporate governance 8, 103
- Council for Mutual Economic  
 Assistance (CMEA) 32
- credibility issues, central bank 45
- credit  
 concentration of banking sector 55  
 intermediation 7
- Crédit Lyonnais 107, 111
- credit risk (CR) 117, 118–26, 128
- credit unions 21
- Croatia 69
- currency pressures, index of 167 n. 6
- current account  
 balance of payments 143, 158  
 financial crises 146–7, 148, 149  
 transition process 138
- Cyprus 199, 200, 201–2, 203
- Czech and Moravian Guarantee and  
 Development Bank 108
- Czech Central Bank 18
- Czech Export Bank 108
- Czech National Bank *see* Česká  
 národní banka
- Czech National Bank Act 34
- Czechoslovak State Bank 38
- Czech Republic  
 banking sector 31–3, 46–7: asset  
 quality 111, 112;  
 capitalization 113, 114, 115;  
 concentration 56, 61–4, 67,  
 68, 70, 70 n. 4; deposit  
 insurance scheme 41–3;  
 development and restructuring  
 18–23, 24–5, 26, 27; efficiency  
 93–6, 97, 98–105, 128, 130;  
 entry and exit 38–41;  
 institutional framework 43–6;  
 legislative framework 35–8;  
 privatization 106, 107, 108,  
 109, 129; profitability 106,  
 110, 111; risk factors 113–15,  
 116, 117, 119–26; role and  
 place of regulation and  
 supervision 33–5; structure  
 and performance 69
- convergence, nominal and real  
 173–5
- exchange rates 140, 141–2, 176,  
 177–9: history 199, 200; PEPs  
 203; segmentation of accession  
 countries 201–2, 205
- inflation targets and price-level  
 convergence 182–3
- interest rates 189
- intermediation 4–5, 6, 7–8, 9–10
- macroeconomic instability, costs of:  
 balance of payments 143;  
 economic growth 144, 154;  
 exchange market pressure index  
 145; exchange rates 140,  
 141–2; investment 151–2;  
 transition process 139
- optimal currency area theory and  
 eurozone accession 193, 195–8
- structure of financial sector 12, 13,  
 14, 15, 16

- DARER 141, 163–6
- data envelopment analysis (DEA) 78, 80–1
- BCC model 85–6
- CCR model 81–5
- cross-country analysis of efficiency 86, 90, 98
- free disposal hull approach 132 n. 4
- Debt Overvaluation Index (DO\_(CPI)) 141, 142, 157
- debt securities 9
- deindustrialization 181
- Denmark
- banking supervision 43, 44
- concentration of banking sector 68
- structure of financial sector 12, 13, 14, 15
- Deposit Insurance Fund (Czech Republic) 42–3
- deposit insurance schemes 35, 36, 41–3
- Deutsche Bank 107
- Deutsche Bundesbank 47 n. 6
- dispersal ratio 57
- distribution free approach 79
- double-speed economy 180–1
- East Asian currency crisis 144, 145
- economic growth 144, 159
- concentration of banking sector 55
- convergence, nominal and real 172–3
- financial sectors' impact on 1, 2
- macroeconomic instability 144, 148–9, 150, 152–4, 159, 162: transition process 138
- size of financial sectors 13
- efficiency of banking sector 74–5, 128–9
- cross-country analysis 86–7: empirical findings 90–105; methodology and selection of variables 87–90
- efficiency scores 130–1
- and profitability, relationship between 126–8
- theoretical framework: data envelopment analysis 80–6; measurement of efficiency 77–80; types of efficiency 75–7
- efficient structure hypothesis 51
- electronic banking 56
- entry to banking sector
- concentration of sector 54, 70
- regulation 38–41
- ErsteBank 105, 107
- Erste Bank Sparkassen 71 n. 9
- Estonia
- convergence, nominal and real 173–5
- exchange rates 156, 157, 177–9: history 200; PEPs 203; segmentation of accession countries 201–2, 203
- inflation targets and price-level convergence 183
- interest rates 189
- macroeconomic instability, costs of: balance of payments 143, 158; economic growth 159, 162; exchange market pressure index 160; exchange rates 156, 157; investment 161; transition process 139
- structure and performance of banking sector 69–70
- structure of financial sector 14
- euro 206–7
- convergence, nominal and real 171
- exchange rate strategies of accession countries 198–206
- interest rates 188
- introduction, discussions on 169–71
- speed of adoption 188–98
- European Central Bank (ECB)
- convergence, nominal and real 171
- inflation targets 183
- stability of financial sectors 3
- supervision and regulation 43
- European Commission 60, 171
- European Court of First Instance 60

- European Monetary Union (EMU)  
 convergence, nominal and real 171  
 euro, introduction 170  
 exchange rate regimes and speed of euro adoption 188–90, 197, 198  
 inflation targets and price-level convergence 183, 184
- European Union  
 accession countries 206–7:  
 convergence, nominal and real 171–5; exchange rate regimes and speed of euro adoption 188–90; exchange rate strategies 200–6; inflation targets and price-level convergence 182–4, 186; transition process 139; *see also named countries*  
 banking sectors 105: efficiency 87, 90; entry and exit 40, 47 n. 2  
 Directives 35–6, 37, 42, 46  
 investment in CEC 24–5  
 liberalization 32  
 exchange market pressure index (EMPI) 145–6, 160  
 Exchange Rate Mechanism (ERM), crisis 144, 145  
 Exchange Rate Mechanism 2 (ERM2) 170  
 exchange rate regimes and speed of euro adoption 190  
 exchange rate strategies of accession countries 198–9  
 inflation targets and price-level convergence 183, 184  
 PEPs 205–6  
 exchange rate risk (ERR) 117, 118–26, 128  
 exchange rates 206–7  
 alternative regimes, pros and cons of 190–2  
 Balassa–Samuelson effect 184–7  
 as convergence indicator 174–5, 176–9  
 DARER 141, 163–6  
 devaluation 146, 176  
 development 140–1, 156, 175–81  
 double-speed economy and deindustrialization 180–1  
 euro adoption, speed of 188–98  
 and external competitiveness 179–80  
 financial crises 149  
 history, common features of 199–200  
 intermediation 5  
 optimal currency area and eurozone accession 192–8  
 overvaluation 141–3, 157, 163–6  
 PEPs 205–6  
 price-level convergence 184  
 segmentation of accession countries 200–5  
 strategies of accession countries 198–206  
 transition process 137, 139
- exit  
 from banking sector 38–41  
 double-speed economy 180
- Federal Banking Supervisory Office (Germany) 47 n. 6  
 financial crises 136–7, 144–55  
 financial depth 3, 4–8  
 Financial Sector Assessment Programmes 3
- Finland  
 banking sector: capitalization 114; concentration 61, 68; deposit insurance scheme 42; efficiency 87, 93–6, 97, 98–105, 128, 130; NPLs 112; profitability 110; supervision 43, 44, 46  
 structure of financial sector 15, 16  
 fiscal deficit 138  
 foreign banks  
 competitive pressures 47 n. 2  
 concentration of banking sector 56  
 development and restructuring of banking sector 18, 24, 25, 27  
 efficiency 96, 97, 103–5, 128–9  
 entry and exit 39  
 privatization 107–8

- foreign debt 139
- foreign investment  
 development and restructuring of  
 banking sector 24–5, 26, 27  
 profitability of banking sector 106
- former Soviet Union 31
- France  
 banking sector: asset quality 111,  
 112; capitalization 114;  
 concentration 69; deposit  
 insurance scheme 42; optimal  
 currency area 195, 197;  
 privatization 106; profitability  
 110; supervision 43, 44  
 investment in CEC 27  
 structure of financial sector 12,  
 13, 14
- free disposal hull (FDH) method 79
- frontier efficiency 78, 79–80
- cross-country analysis 91–2, 98  
 DEA 81
- GE Capital 107
- Germany  
 banking sector: banking model 36;  
 capitalization 114;  
 concentration 69; deposit  
 insurance scheme 42; NPLs  
 111; privatization 107;  
 profitability 110; supervision  
 43, 44  
 and Czech Republic, links between  
 193, 195, 196  
 investment in CEC 27  
 optimal currency area 195, 197  
 price-level convergence 182  
 structure of financial sector 10, 12,  
 13, 14, 15, 17
- Glass–Steagall Act (USA) 70 n. 2
- globalization, effects on banking  
 sector  
 concentration 56, 61  
 profitability 110
- Greece  
 concentration of banking sector 68  
 structure of financial sector 11, 15,  
 16  
 supervision of banking sector 43,  
 44
- Herfindahl–Hirschman Index (HHI)  
 57, 59–60, 68, 70  
 Czech Republic 62–3, 64, 65, 70  
 Poland 67, 68  
 Slovakia 64, 65, 66
- Hodrick–Prescott (HP) filter 141, 165
- Hong Kong 69, 112
- hospital banks 70–1 n. 7, 111
- Hungary  
 banking sector: Banking Act 37;  
 development and restructuring  
 21–2, 23–4, 25, 31, 32;  
 efficiency 93–6, 97, 98–105,  
 128, 130–1; structure and  
 performance 69; supervision  
 44, 46  
 convergence, nominal and real  
 173–5  
 exchange rates 177–9: history  
 199, 200; PEPs 204, 206;  
 segmentation of accession  
 countries 201–2; speed of euro  
 adoption 190  
 inflation targets and price-level  
 convergence 182, 183  
 interest rates 189  
 intermediation 4–5, 6, 7–8, 9–10  
 macroeconomic instability, costs of:  
 balance of payments 143, 158;  
 economic growth 159, 162;  
 exchange market pressure index  
 160; investment 161;  
 transition process 139, 156, 157  
 structure of financial sector 12, 13,  
 14, 16
- HVB 105
- Hypobank 107
- HypoVereinsbank CZ 63
- income levels 5
- India 112
- Indonesia 112
- inflation  
 banking sector: development 32;  
 regulation and supervision 45  
 exchange rates 176, 177, 178: and  
 Balassa–Samuelson effect 184;  
 and speed of euro adoption  
 191, 192, 193

- inflation – *continued*  
 financial crises 149  
 intermediation 5  
 and price-level convergence 181–8  
 transition process 138, 139
- information technology  
 concentration of banking sector 56  
 intermediation 2
- ING 107
- integration with world  
 capital markets 8
- interest rate risk (IRR) 117, 118–26, 128
- interest rates  
 banking regulation and supervision 33–4, 45  
 concentration of banking sectors 53  
 and convergence 187–8, 189  
 exchange rate regimes and speed of euro adoption 191, 192  
 financial crises 149, 150
- intermediation 1–10
- intermediation approach to banking  
 efficiency 87, 88, 127–8  
 cross-country analysis 89, 90–7, 98–100, 101, 104–5, 130–1
- International Monetary Fund (IMF) 3, 40, 43
- Investiční a poštovní banka (IPB) 64, 108, 114
- Investiční Banka 38, 71 n. 8
- investment and macroeconomic instability 146–52, 155, 161
- Ireland  
 banking sector: capitalization 114; NPLs 112; privatization 107; profitability 110; supervision 43, 44  
 optimal currency area 195, 197  
 structure of financial sector 11, 12, 13, 14, 15
- Italy  
 banking sector: asset quality 111, 112; capitalization 114; deposit insurance scheme 42; privatization 106–7; profitability 110; supervision 43, 44
- investment in CEC 27  
 structure of financial sector 12, 13, 14, 15
- Japan  
 concentration of banking sector 69  
 deposit insurance scheme 42  
 structure of financial sector 11–12, 13, 14, 17
- KBC 107, 108
- Komerční banka 38  
 capitalization 114  
 concentration of banking sector 62, 71 n. 8, 71 n. 9  
 efficiency 132 n. 10  
 privatization 25, 108, 109
- Konsolidacní banka (Consolidation Bank) 62, 63, 129
- Korea 112
- Latvia  
 exchange rates 139: history 200; PEPs 203; segmentation of accession countries 201–2  
 structure and performance of banking sector 69
- legal framework  
 concentration of banking sector 54  
 Czech banking sector 31, 35–8, 41  
 development and restructuring of banking sector 18  
 intermediation 8  
 viability of commercial banks 40, 41
- liquidity risk (LR) 117, 118–26, 128
- Lithuania  
 exchange rates 139: history 200; PEPs 203, 206; segmentation of accession countries 201–2  
 structure and performance of banking sector 69  
 structure of financial sector 14, 15
- Luxembourg 21, 43, 44
- M2 3, 4–5, 7
- Maastricht Treaty  
 Balassa–Samuelson effect 185, 186  
 banking sector regulation and supervision 43

- Maastricht Treaty – *continued*  
 convergence, nominal and real  
   171, 172  
 inflation targets and price-level  
   convergence 183, 184  
 macroeconomic instability, costs of  
   136, 154–66  
 balance of payments 143  
 economic growth 144  
 empirical analysis 146–54  
 exchange rates 139, 140–3  
 financial crises 144–6  
 transition process 136–9  
 Malaysia 112  
 Malta 199, 200, 201–2  
   PEPs 203  
 McFadden–Pepper Act (USA) 53,  
   70 n. 2  
 mergers and acquisitions 53, 60, 61  
   Czech Republic 63–4  
 Merger Task Force (MTF) 60  
 Mexico  
   NPLs 112  
   peso crisis 144, 145  
 Ministries of Finance  
   Czech Republic 39, 45–6  
   supervision 43, 44, 45–6  
 modern approach to banking  
   efficiency 87  
 Moldova 15  
 monetary policy  
   and banking supervision policy  
     33, 34, 35, 44–5  
   concentration of banking sectors  
     53  
   and convergence 187–8  
 monobanks, central planning 2, 31  
 moral hazard and deposit insurance  
   schemes 42, 43  
 M-systems (market-based) 10, 11,  
   16, 17  
 multinational corporations 5  
 Netherlands  
   banking sector: concentration 68;  
     deposit insurance scheme 42;  
     NPLs 111; privatization 107;  
     supervision 43, 44  
   investment in CEC 27  
   optimal currency area 197  
   structure of financial sector 12, 13,  
     14  
 new entry approach, banking sector  
   development 31  
 New Zealand 47 n. 5  
 non-parametric approaches, technical  
   efficiency measurement 78–9  
   *see also* data envelopment analysis  
 non-performing loans (NPLs)  
   development of banking sector 32  
   profitability of banking sector  
     111–12: privatization 106, 129  
   regulation and supervision of  
     banking sector 37  
   risk 116, 117, 125  
 Norway  
   deposit insurance scheme 42  
   NPLs 112  
   structure of financial sector 13, 14  
   supervision of banking sector 43,  
     44  
 Office for the Protection of  
   Competition (Czech Republic)  
   70 n. 4  
 operational approach to banking  
   efficiency 87–8, 127–8  
   cross-country analysis 89–93,  
     95–7, 99, 102, 105, 106, 130–1  
 operational efficiency 75–6, 97  
 operational risk 116  
 optimal currency area (OCA) theory  
   192–8  
 output *see* productivity  
 parametric approaches, technical  
   efficiency measurement 78–9  
 Pareto-efficiency 81  
 PEKAO 27  
 PKO Bank Polski 108  
 Pojišť'ovna Kooperativa 64  
 Poland  
   banking sector: asset quality 111,  
     112; capitalization 113, 115;  
     concentration 56, 66–8;  
     development and restructuring  
     21–3, 24, 25–7, 31; efficiency  
     93–6, 97, 98–105, 128, 131;

- Poland – *continued*  
 entry and exit 39;  
 privatization 106, 107, 108,  
 129; profitability 106, 110,  
 111; risk factors 113–15, 116,  
 119–26; structure and  
 performance 69; supervision  
 44  
 convergence, nominal and real  
 173–5  
 exchange rates 156, 157, 177–9:  
 history 199, 200; PEPs 204;  
 segmentation of accession  
 countries 201–2, 205  
 inflation targets and price-level  
 convergence 182, 183  
 interest rates 189  
 intermediation 4–5, 6, 7–8, 9–10  
 macroeconomic instability, costs of:  
 balance of payments 143, 158;  
 economic growth 159, 162;  
 exchange market pressure index  
 160; exchange rates 156, 157;  
 investment 161; transition  
 process 139  
 structure of financial sector 11–12,  
 13, 14, 16  
 Portugal  
 banking sector: capitalization 114;  
 NPLs 112; privatization 107;  
 profitability 110; supervision  
 43, 44  
 optimal currency area 196  
 structure of financial sector 12, 13,  
 14  
 Poštová banka 108  
 Pre-Accession Economic Programmes  
 (PEPs) 203–4, 205–6  
 price-level convergence 181  
 Balassa–Samuelson effect and real  
 exchange rate 184–7  
 via inflation differential 181–4  
 monetary policy challenges 187–8  
 privatization  
 and banking sector: concentration  
 63; development and  
 restructuring 24, 25, 27;  
 efficiency 103, 105;  
 profitability 105–12, 113, 129  
 intermediation 8, 9  
 structure of financial sector 15  
 production approach to banking  
 efficiency 87, 88  
 productivity 175  
 Balassa–Samuelson effect 185–6  
 convergence, nominal and real  
 172–4  
 financial sectors' impact on 1  
 transition phase 8  
 profitability of banking sector 74–5,  
 128–9  
 concentration of sector 52, 53, 54,  
 55, 56  
 and efficiency, relationship between  
 126–8  
 privatization 105–6, 109–11: asset  
 quality 111–12; capitalization  
 113; transition economies  
 106–9  
 risk 113–15: definition 115–17;  
 hypotheses and suppositions  
 118–26; multicorrelation and  
 multiregression analyses  
 118–26  
 Raiffeisenbank 105, 107  
 ratio analysis 77–8  
 regression analysis 81  
 regulatory framework  
 concentration of banking sectors  
 52, 53  
 Czech banking sector 31, 32–3,  
 46–7: deposit insurance scheme  
 41–3; entry and exit 38–41;  
 institutional framework 43–6;  
 legislative framework 35–8;  
 role and place 33–5  
 development and restructuring of  
 banking sector 18  
 intermediation 8, 9  
 rehabilitation approach, banking  
 sector development 31  
 relative concentration of banking  
 sectors 57  
 retained earnings, financing from 5  
 return on assets (ROA) 109–11  
 return on equity (ROE) 109–11, 126–7  
 risk factors 116, 118–19, 125–6

- risk  
 concentration of banking sectors 53–4  
 profitability of banking sectors 13–15, 128; definition 115–17; hypotheses and assumptions 118–26; multicorrelation and multiregression analyses 119–26
- Romania  
 banking supervision 44  
 exchange rates: history 200; PEPs 204; segmentation of accession countries 201–2, 205, 206  
 structure and performance of banking sector 69
- Russian currency crisis 144, 145
- savings 5
- scale efficiency 79, 85, 86  
 cross-country analysis 92–3, 97, 98, 105
- shareholder protection 8
- shocks  
 optimal currency area theory and eurozone accession 193, 195  
 transition process 138
- Silesian Bank 108
- Singapore 69
- Slovakia  
 banking sector: asset quality 111, 112; capitalization 113, 115; concentration 56, 64–6, 67, 68, 70; development and restructuring 21–2, 23–4, 27; efficiency 93–6, 97, 98–105, 128, 131; entry and exit 38; privatization 106, 107, 108, 129; profitability 106, 110–11; risk factors 113–15, 116, 117, 119–21, 122–6; structure and performance 69; supervision 44  
 convergence, nominal and real 173–5  
 exchange rates 156, 157, 177–9: history 199, 200; PEPs 204; segmentation of accession countries 201–2
- inflation targets and price-level convergence 183
- interest rates 189
- intermediation 4–5, 6, 7–8, 9–10
- macroeconomic instability, costs of: balance of payments 143, 158; economic growth 159; exchange market pressure index 160; exchange rates 156, 157; transition process 139
- structure of financial sector 12, 13, 14, 16
- Slovenia  
 convergence, nominal and real 173–5  
 exchange rates 156, 157, 177–9: history 199–200; PEPs 204; segmentation of accession countries 201–2, 205  
 inflation targets and price-level convergence 181, 183  
 interest rates 189  
 macroeconomic instability, costs of: balance of payments 143, 158; economic growth 159, 162; exchange market pressure index 160; exchange rates 156, 157; investment 161; transition process 139  
 structure and performance of banking sector 69  
 structure of financial sector 14, 16
- Slovenská sporiteľňa 66, 132 n. 10
- Société Générale  
 concentration of banking sector 71 n. 9  
 efficiency 132 n. 10  
 privatization 106, 107, 108
- Spain  
 banking sector: capitalization 114; deposit insurance scheme 42; NPLs 112; profitability 110; supervision 43, 44  
 structure of financial sector 12, 13, 14
- specialization, and monetary union 192
- state-owned enterprises (SOEs) 32

- stochastic factor analysis (SFA) 78, 79  
 stock market capitalization  
   intermediation 3–4, 9, 10  
   structure of financial sector 11–16  
 stock market liquidity 4, 8  
 stock markets  
   intermediation 3–4, 8–10  
   structure of financial sector 11–16  
 structure–conduct–performance (SCP)  
   hypothesis  
     concentration of banking sectors  
       49–50, 51, 52, 55, 56  
     efficiency and profitability in  
       banking 127  
 supervision, Czech banking sector  
   31, 32–3, 46–7  
   deposit insurance scheme 41–3  
   entry and exit 38–41  
   institutional framework 43–6  
   legislative framework 35–8  
   role and place 33–5  
 Sweden  
   banking supervision 43, 44  
   NPLs 112  
 Switzerland  
   banking supervision 43, 44  
   concentration of banking  
     sector 69  
   deposit insurance scheme 42  
   structure of financial sector 12,  
     13–14  
  
 Taiwan 112  
 takeovers *see* mergers and acquisitions  
 Tatrabanka 66  
 technical efficiency 76–7, 78  
   cross-country analysis 92, 98  
   DEA 84, 86  
 Thailand 112  
 thick frontier analysis (TFA) 79  
 Total Overvaluation Index (TO\_(CPI))  
   141, 142, 157  
 Trend Overvaluation Index  
   (TrO\_(CPI)) 141, 142, 157  
 Turkey  
   currency crisis 144  
   exchange rate: history 200; PEPs  
     204; segmentation of accession  
     countries 201–2, 205, 206  
   turnover ratio 4, 9, 10  
   two-tier banking systems  
     Czech Republic 31, 35  
     establishment 18, 32  
  
 Ukraine 15  
 undercapitalization of  
   banks 47 n. 3  
 Unicredito 107, 108  
 United Kingdom  
   banking supervision 43, 44, 46  
   concentration of banking  
     sector 69  
   investment in CEC 27  
   optimal currency area 197  
   structure of financial system 10,  
     11–12, 13, 14  
 United States of America  
   banking sector: concentration  
     52–3, 55, 69, 70,  
     70 n. 2; deposit  
     insurance scheme 42;  
     efficiency 127–8;  
     NPLs 112; privatization 107;  
     regulation 53, 70 n. 2  
   investment in CEC 25, 27  
   optimal currency area 197  
   structure of financial system 10,  
     11–12, 13, 14  
  
 value traded 4  
 variation coefficient 57  
 VDA Spaarbank 132 n. 9  
 Venezuela 112, 144  
 Volksbank 105, 107  
 Všeobecná úvěrová banka 38, 66  
  
 WBK 108  
 World Bank 3, 4  
 World Development Indicators 4  
  
 X-efficiency 75, 76–7, 79, 128  
  
 zero banks 39, 40  
 Živnostenská Banka 38

