Financial regulation and financial system architecture in Central Europe

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Abstract

At the beginning of the transition, advice to Central European countries with respect to how to set up their financial systems was based on models used in western economies. This paper analyzes the experiences to set up a financial system in Central Europe. The experience in the first transition years (1990–1996) with financial system architecture shows that changes are slow but that the Central European countries tend to catch up more quickly with the western ones in the case of their banking systems than with respect to their stock markets. © 2000 Elsevier Science B.V. All rights reserved.

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Keywords: Banking; Finance system architecture; Regulation; Transition

1. Introduction

This paper aims at analyzing the efforts to develop the financial system in Central Europe. Has advise from academics and multilateral institutions on financial system architecture been followed and what have been the results? How does the financial system of countries in Central and Eastern Europe compare to those of Western European ones? We focus on the structure of the financial system as the issue of financial sector reform is already dealt with to a

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great extent elsewhere in the literature (see Calvo and Kumar, 1993; Thorne, 1993; Caprio et al., 1994; Griffith-Jones and Drábek, 1995). The structure of the paper is as follows: As the frame of reference in the transition economies in general has been the situation in Western Europe and North America, we first review the practices and principles of financial system architecture in these economies. The purpose is to come to a basic conceptual framework of institutional arrangements in financial systems. Then, in Section 3, we investigate the arguments to construct a particular system. Section 4 gathers evidence on the experience in Central Europe during the early transition years (1990–1996). We focus on bank credit and the stock market as these are regarded as both crucial determinants and indicators in discussions about financial system architecture. A conclusion is in Section 5.

2. Financial system architecture

Financial intermediaries have emerged to help firms, consumer households and governments to finance their expenditure and to save or invest their liquid funds in a world that is full of market imperfections. Two main types of financial intermediation can be distinguished if it comes to the transformation of funds within the economy. Bank or indirect finance is the intermediation between surplus and deficit spending households. The financial intermediary is permanently in a position between the ultimate borrower and the ultimate lender. The intermediary issues (contingent) claims on himself and sells these to the borrower. At the same time, it holds (contingent) claims on lenders in return for (access to) funds. In market or direct finance, the financial intermediary takes no position at all between borrower and lender, or only for a very brief period. The claims issued by the deficit spending unit are bought by the ultimate borrowers. The financial intermediary brings together supply and demand for these claims and passes through or underwrites the securities. With bank finance, the intermediary acts as a delegated monitor. This is an efficient solution to free riding problems that arise in financial markets where the incentive structure to monitor the issuer of debt or equity is weak (Diamond, 1984). Fixed costs in monitoring are crucial to achieve economies of scale in gathering and processing information. It is much more efficient for one information specialist to screen and monitor a large number of firms than for a large number of individual lenders. The intermediary collects funds from the depositors/investors, promises them a fixed return and diversifies these funds along various projects. Thereby it reduces risk (as project returns are imperfectly correlated) and offers diversification to those from which it lends.

Hellwig (1991) argues that, from a pure theoretical perspective, it appears that bank finance is a superior means of financing. This results from the
information acquisition and procession potential of banks vis-à-vis financial markets. Banks are supposed to have better access to information about a firms’ behavior. Furthermore, they have the incentives and the ability to operate in order to maximize the present value of their stake in the firm. The financial intermediary may provide a mechanism of commitment in a long-term relationship, which is of importance if complete contracts cannot be written and enforced. However, Hellwig stresses the need for a more systematic analysis of the relationship between financing patterns and commitment mechanisms. Such an analysis is provided by Boot and Thakor (1997). In their theoretical analysis of financial system architecture, they predict that an optimal financial system will configure itself skewed toward bank financing if borrowers have relatively poor credit reputations and toward capital market financing if borrowers have relatively good credit reputations but can improve real decisions based on the information conveyed by market prices. Thus, implicitly, they appear to regard market finance superior to bank finance, as informational asymmetries in the former case are weaker than in the latter.

The empirical analysis of financial system architecture on a macro-level appears to lag behind the theoretical innovations that developed in financial intermediation theory in the 1980s and 1990s. The main studies in this field are undertaken by Raymond Goldsmith (1969, 1985). But note that much of the discussion in financial system architecture relates to Gerschenkron’s (1962) comments. Gerschenkron argued – based on the historical evidence of the UK, Russia, Germany and Italy – that bank prominence in economic development results from economic backwardness. When economic growth takes off, direct finance gradually replaces indirect finance. Therefore, there is a prominent role for financial markets in the financial sector of highly developed countries. A challenge to this view was provided by Mayer (1988). He pointed out that British, French, German, and Japanese firms rely primarily on bank loans as a source of external investment. Only in the US, the bond markets were of the same importance as bank finance. In all five countries, internal finance was much more important than external finance. Similar facts were also found by Corbett and Jenkinson (1994) over a longer time period: external finance is 31% in Japan, 19% in Germany, 9% in the US, and 3% in the US between 1970 and 1989; in general, more than half of this external finance comes from banks.

Three factors appear to be crucial in financial system architecture: financial markets, financial institutions, and financial regulation (see Bencivenga et al., 1995; Boot and Thakor, 1997; La Porta and López-de-Silanes, 1998; Levine, 1998; Rajan and Zingales, 1998). The basic differences between bank- and market-oriented systems in this respect are as follows (see Frankel and Montgomery, 1991; Steinherr and Huveneers, 1994; Allen and Gale, 1995, Davis, 1995). In market-oriented financial systems, financial markets are well developed and the financial industry is subject to fierce competition.
Institutional investors make up an important part of the financial system, in contrast to bank-oriented systems. Equity finance is important in market-oriented systems, where corporate control is enacted through stock. In bank-oriented systems, bank finance is prominent and corporate control is enacted through ‘voice’ (long-term relations, board representation, etc.). Financial regulation is much more liberal in market-oriented systems, where trust in the market mechanism prevails.

Given that only a small part of net investments actually is being financed through external means (see Mayer, 1998; Corbett and Jenkinson, 1994), why should one bother about the structure of the financial system? This is because there appears to be a symbiotic relationship between finance and growth, as there is a significant and positive association between financial and economic development (Goldsmith, 1969; King and Levine, 1993a,b,c; Demirgüç-Kunt and Levine, 1996; Levine and Zervos, 1998). However, these studies do not discriminate among various types of economies and seem to neglect Goldsmith’s (1969) observation that financial development largely occurs during the early stages of economic development when countries have low levels of income. Both stock market development and the level of banking development are positively and significantly associated with per capita GDP growth. Recent studies use endogenous growth theory to show why the level of financial development and economic growth are closely associated. This approach assumes that financial development helps to improve the efficiency of capital allocation. The transmission mechanisms involved depend upon the possibilities of choosing the most productive investments by improving the management of liquidity risks (Bencivenga and Smith, 1991; Bencivenga et al., 1995), by improved diversification of the investor’s portfolio (Saint-Paul, 1992), by improving the collection and procession of information about the efficiency of investment projects and entrepreneurs (Greenwood and Jovanovic, 1990; King and Levine, 1993bc), and by reducing the costs of external finance to firms (Demirgüç-Kunt and Maksimovic, 1996; Rajan and Zingales, 1998). Unfortunately, the causality between finance and growth is not clearcut (Mankiw, 1988; Gertler, 1993; Berthélemy and Varoudakis, 1996b). The legal environment (among which financial regulation) is a crucial factor – or even a precondition – for the sound development of banks and financial markets. La Porta et al. (1997) show that legal systems that rigorously protect creditors and enforce contracts encourage better functioning debt and equity markets than legal systems that are more lax in safeguarding creditors and enforcing contracts. Levine (1998) shows that there is a strong interaction between banking development and this legal environment. La Porta and López-de-Silanes (1998) find that a good legal environment is essential for large capital markets: Bad legal institutions result in high levels of ownership concentration, low availability of external equity financing, narrow equity markets and small debt markets.
Now, how can a bank- or a market-oriented financial system be of importance for economic development?¹ For financial markets, the most important transmission channel is their creation of liquidity. Furthermore, they are an outlet for enacting corporate governance. Liquid financial markets reduce investment risk and open the opportunity for diversification by investors. This is accompanied by enhanced access to firm finance. Financial markets stimulate information acquisition and help improve corporate governance, for example by allowing for takeovers (Shleifer and Vishny, 1997). A counterargument is that increased liquidity might encourage myopia with investors, which weakens their commitment and reduces their incentives to exert corporate control. In contrast, establishing long-term relationships is regarded as the comparative advantage of bank finance. As such, banks acquire information and exert corporate control. By providing indirect finance they enable savers to diversify risk while offering liquidity. The development of the real sector reduces the premium attached to external finance, basically through changes in borrower net worth and financial efficiency. This, in turn, stimulates further development (Sussman, 1995). Increasing returns to scale in financial production and external effects of finance on (expected) profitability are crucial. As a result, financial development may affect the real sector through the intermediation of savings towards investments, as it improves the allocation of capital and affects the savings rate (Pagano, 1993). The financial system develops in order to take care of agency and information problems, but it cannot solve them completely. It provides incentives to optimize the efforts by the manager/entrepreneur, the investment ratio, and the cost of capital (Boot and Thakor, 1997; Shleifer and Vishny, 1997). Note that there is no empirical evidence that one type of financial system architecture is superior to the other (e.g. Edwards and Fischer, 1994; Kaplan, 1994; Steinherr and Huveneers, 1994; Allen and Gale, 1995; Arestis and Demetriades, 1997b).

Table 1 presents the key statistics of the main elements of the structure of the financial system of a group of twelve western economies.² The 12 have been chosen because four of them (Germany, Japan, the UK, the US) are frequently regarded as archetypal financial systems; the others are chosen for their geographic proximity to the Central European countries. As to financial institutions, banks clearly dominate in countries as Austria, Belgium, Germany, Italy, and Switzerland. Elsewhere, institutional investors also configure an important part of the financial system. Italy, the Scandinavian countries and – surprisingly – the US have the lowest size of financial assets as a ratio of GDP in our

¹ Recent reviews are by Berthélemy and Varoudakis (1996a), Galetovic (1996) and Arestis and Demetriades (1997a).
² Austria, Belgium, Denmark, Finland, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the UK, and the US.
group of twelve countries. Bank claims on the private sector are highest in Switzerland, the UK, Japan, the Netherlands, Germany, and Austria. On average, bank credit to the private sector makes up almost 60% of total bank assets. As to financial markets, the highest stock market capitalization is in Switzerland, the UK, and the US, whereas bond markets are very well developed in Denmark, Germany, Sweden, Switzerland, and the UK. There is an enormous trade in bonds, especially government bonds, in Denmark (almost six times GDP), and in Italy and Sweden (almost four times GDP). In the UK, trade in stocks and bonds both equals GDP. Unfortunately, we lack accurate data on bond trade in the US. In the Netherlands, the UK, the US, and in Scandinavia, equity makes up a substantial part of gross fixed capital formation.

In Figs. 1 and 2, we plot per capita income (PPP, US$ 1995) against the financial assets of banks as a percentage of GDP and market capitalization as a percentage of GDP, respectively. Both figures illustrate that there is a slight but positive association between financial and economic development.

Figs. 1 and 2 confirm the pattern already discovered in Table 1, namely that there is a wide divergence in the financial development of the western economies. The assumption that western economies are homogeneous clearly does not apply to financial structure.

3. What financial system in the former centrally planned economies?

If economic history would allow us to speak of financial system architecture, it certainly seems applicable to the former centrally planned economies in the beginning of the 1990s. Note that the concept of financial system architecture
suggests there is some general plan or idea – put up by an architect – behind how the financial system should look like in the end. One can even imagine an artist’s impression of the future financial skyline. However, there is no general plan or idea behind the structure of the financial system in the countries we reported upon in Section 2. These financial systems are a complex set of institutions, procedures, practices and rules which determine how savings are collected and invested to create wealth. The previous section showed that economic theory did not come up with normative conclusions regarding a method to minimize agency costs in the imperfect world. History took the lead and produced two major groupings: the market-based systems in which

Fig. 1. Financial assets of banks as a percentage of GDP (vertical axis) and per capita GDP (horizontal axis) (Sources: IFC, IMF).

Fig. 2. Stock market capitalization as a percentage of GDP (vertical axis) and per capita GDP (horizontal axis) (Sources: FIBV, IFC).
securities markets play a dominant role in supplying industry with external finance, and which are notable for the separation between ownership and control, and credit- or bank-based systems, where banks are the main financing channel and the main partner in corporate management (see also OECD, 1995).

In transition economies, there appears to be a notion that one might overcome the costs of trial and error of gradually developing the national financial system and that these countries might be better off to install a particular type of financial system that is fit to their purposes, i.e. a financial system that enhances economic development. For example, Pohl and Claessens (1994) conclude that financial system reform in Eastern Europe should compress the historical development of financial systems. Smith and Walter (1993) regard the economic and financial configuration as a tabula rasa. These notions almost always are accompanied by advise on how to regulate the financial system and the private sector in general. But note that there are quite different views in the economic literature on the regulation of the financial system, especially with respect to its efficiency. The free banking school argues that government intervention undermines the market forces that make the financial system safe and stable. Here, financial regulation is unnecessary and even counterproductive. Free bankers assume there is nothing distinctive about money or banking that makes the financial sector an exception to the general rule that free trade is best (examples are White, 1984; Selgin, 1988; Dowd, 1993). Post-Keynesians (Kregel, 1975; Davidson, 1978; Dow, 1993) and also Stiglitz (1989) argue for extensive financial regulation. This results from the – in their opinion – special economic role of money and the uncertainty associated with it. The characteristics of money make the monetary and financial system a public good which can best be provided for by the government. In between is the view that there is a role for limited government intervention in the financial system. This is a much more eclectic approach. For example, Benston and Kaufman (1995) argue that most of the arguments to support special regulations for banks are not supported by either theory or empirical evidence. Kane (1977) and Boot and Thakor (1993) vividly show what may be behind these regulations, i.e. the power process of the political industry. Benston and Kaufman (1995) regard countering the negative externalities that result from the explicit or implicit government-guaranteed deposit insurance as the main reason for regulation. They argue that banks should be regulated prudentially and place emphasis on capital adequacy requirements for doing so.

Blommestein and Spencer (1994) sketch the environment and the priorities for financial sector reform. They find that the financial system, inherited from the system of central planning, is in quite a poor state. The banking system frequently is plagued by low capital, large stocks of non-performing loans to state enterprises, geographically and sectorally concentrated loan portfolios, small branch networks for other than savings banks, inexperienced staff and
management. Small- and large-value payment systems are incomplete and inefficient. Payments are frequently made on a cash or barter basis and firms use extensive networks of inter-enterprise credit. The equity and bond markets are either non-existent or extremely small and illiquid. Furthermore, many banks are highly specialized, and, despite the increasing number of banks, there is still limited competition among them. Financial markets are dominated by the banking sector; short-term money markets are still in their infancy, and medium- and long-term capital markets lack depth. Then, given that the process of transformation from central planning to a market system – and, especially, the privatization of state enterprises – will place tremendous demands on the financial system, what are the priorities for financial sector reform? 3 Given this background, how did academics and multilateral institutions (such as the European Bank for Reconstruction and Development, the European Union, the International Monetary Fund, the World Bank) advise governments in Central Europe? Given the diffuse consulting activities and the lack of transparency of the institutions, we have no evidence of the exact advises given. We have to concentrate on what were the main ideas behind the advise, as these – to some extent – were revealed in public.

There are two lines of reasoning. One centers on a small role for the banking sector and stresses the urge of developing efficient capital markets, the other suggests a leading role for the banking sector in the transitional stages. For example, McKinnon (1993) argues that banks should be prohibited from lending to privatized firms in the early stage of the transformation and should be allowed to make only fully collateralized short-term lending in later stages. Rostowski (1993) favors narrow banking, i.e. restrictions on the range of activities of banks together with a limited lender of last resort role of the monetary and financial authorities. Pohl et al. (1995) argue that the creation of capital markets is necessary to privatize state enterprises and to remove government controls over industry and commerce. The main argument for markets in this line of reasoning is that capital markets offer more scope for disciplining firm management than banks. Furthermore, capital markets may provide more financing to entrepreneurial firms as the existing banks will favor their relationships, i.e. the state owned enterprises, and will have little scope for financing new activities as they are put up with huge amounts of problem loans. Especially, the financial markets are a vehicle for foreign investment. Also, capital markets allow the public at large to participate in the privatization process and thereby increase their commitment towards the transition process.

However, there also are some arguments against a prominent role for banks. Especially in the Central and Eastern European context, it is difficult to value the equity of firms. If equities are a significant part of the banks’

\[3\] Bahra et al. (1997) analyse the genesis of financial sector reform in transition economies.
portfolio, some of the problems with transitional economies will become institutionalized within the banking sector. The use of bank staff in the management of enterprises takes away scarce human resources from the main core of bank business. Furthermore, there is little reason to expect bank staff to be any better at managing enterprises than the existing managers. The system of universal banking also seems to lead to cartelization in the financial sector and to inhibit the development of securities markets. As transitional economies are still put up with an unstable nature, the banks may become captive to their enterprises. This will hinder corporate governance. Another effect of this cartelization may be a reduction in the distribution of accumulated knowledge in project evaluation because of a tied nature in the projects undertaken. When firms are not tied to banks by equity bonds, there is more competition for good projects, which may result in more efficient intermediation. Privatization through public share offerings can also spur the development of capital markets, direct through the capitalization of the stock market and through higher equity valuations and trading liquidity, and indirect through increasing opportunities for portfolio diversification, accelerate the development of an institutional framework, and increase investor confidence (see Perotti and Van Oijen, 1997).

The second line of reasoning favours a central role for banks in the transition process. Brainard (1990) argues that reforms should begin with the commercial banking sector. Others argue reforms should be based on the principle of creating a bank-based system (Corbett and Mayer, 1991; Goodhart, 1994). Universal banking allows for representation on enterprise boards so that banks have greater control and confidence in long-term investment. Banks can monitor firms more closely and may influence the daily operations of the enterprise. They are thought to be put up with an ideal incentive structure as they are both lenders and owners of the enterprise. Universal banking overcomes some problems of fragmented ownership (e.g. free riding). But they will show little interest in holding equity as this is rather costly and the benefits are doubtful (Dittus, 1996). Some regard bank restructuring as crucial for the success of privatization (e.g. Rhyne et al., 1994), as banks are the creditors of the firms to be privatized. Banks may be important vehicles for privatization through active enterprise-level debt restructuring, and newly privatized firms need competent banking services to help them be productive.

The main argument against putting capital markets central in the transition process is that investors have only limited information about enterprises and that especially households still lack the capacity to incur the losses that may accompany equity investments. Indeed, for a large part of population, access to safe and sound SLs probably would increase welfare much more than a stock exchange. Institutional investors, which may have a major governance role in stock markets in western economies, are either in their infancy or non-existing. Capital markets are much more in need of an elaborated legal system
than banks to provide for the credible operation of a private sector in the economy so that disputes can be resolved, contracts safely entered into, corruption proscribed, violators prosecuted, financial information relied upon, and government claims collected by a taxation system that is enforced honestly. As the legal infrastructure is also still in its infancy and as its enforcement is at best doubtful, it seems unwise to put all efforts in developing capital markets.

The analysis of these ideas on how to achieve an efficient financial system architecture suggests that the Central European transition economies generally were recommended to put up a safe and sound banking system prior to the development of a fully-fledged stock exchange. However, capital markets were to be developed relatively quickly too as they in general were regarded as complements – rather than substitutes – to the banking sector by the multilateral financial institutions (see Calvo and Kumar, 1993; EBRD, 1994; Anderson et al., 1996; World Bank, 1995). Furthermore, all countries allowed for universal banking. Only in some cases (notably Hungary), prudential regulations restricted bank holdings of some assets, particularly equity. In practice, we saw much fragmentation of the state and commercial banks along the lines of previous departments of the monobanks. Stock exchanges were established in all Central European economies in the 1990s. The next section goes into the experience with financial system architecture, especially the experiences with the development of the stock exchange and with the extension of bank credit in Central Europe.

4. Experiences with financial system architecture in Central Europe

4.1. Financial system

In this section, we focus on the practice of financial system architecture, not on policy. Not the artist’s impression, but the face value of the financial system in the first few years of transition is of our concern, as the actual behavior of the financial sector in the Central European economies and the actual financial structure is of our concern. As such, we mainly focus on two constituents of the financial system. First is bank credit, second is the stock market. These two are selected as they are regarded as the pillars of financial and economic development (see Bencivenga et al., 1995; Gorton and Winton, 1998; Levine and Zervos, 1998). But first we give a broad impression of the status of the financial system in Central Europe and compare this with the situation of the countries analyzed in section two. It must be pointed out beforehand that data availability and data reliability is still a major issue in Central Europe. Therefore, caution is warranted when deriving conclusions from the empirical analysis in this section.
Table 2 presents the key statistics of the main elements of the structure of the financial system of eleven Central European economies in 1995. These countries are selected by using a geographic criterion to decide which countries belong to Central Europe, where Europe reaches from Iceland in the west to the Ural mountains in the east. The banking system (we left out institutional investors here, as we lack accurate data) is largest in the Czech Republic. Elsewhere, with the exception of the Slovak Republic and Slovenia, deposit money banks’ combined assets hardly mount to half the GDP-level. The size of bank credit to the private sector is highest in the Czech Republic (64% of GDP in 1995). In Bulgaria, Croatia, the Slovak Republic and Slovenia, it is between 20% and 30% of GDP. Elsewhere in Central Europe, it is less than 15%. In the Czech Republic, stock market capitalization (data on bond market capitalization were not available) mounts to 35% of GDP. In the Slovak Republic and in Hungary, it is between 5% and 10%. Elsewhere, the size of the stock market is less than 5% of GDP. Trade in stocks and bonds in relation to GDP is highest in the Czech and Slovak republics and in Poland and Slovenia. Elsewhere, the value of trade in stocks and bonds is less than 2% of GDP.

In Figs. 3 and 4 we plot per capita income (PPP, US$ 1995) against the financial assets of banks as a percentage of GDP and market capitalization as a percentage of GDP, respectively. In both cases, the Czech Republic is the outlier due to the relatively large per capita income and financial size (i.e. both bank credit and stock market capitalization). Fig. 3 suggests a positive

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Financial assets of deposit money bank assets (% of GDP)</td>
<td>54.8</td>
<td>30.0</td>
</tr>
<tr>
<td>2. Bank claims on the private sector (% of GDP)</td>
<td>22.9</td>
<td>15.9</td>
</tr>
<tr>
<td>3. Market capitalization of the stock market (% of GDP)</td>
<td>5.5</td>
<td>10.0</td>
</tr>
<tr>
<td>4. Trade in the stock market (% of GDP; excl. Latvia)</td>
<td>1.9</td>
<td>2.6</td>
</tr>
<tr>
<td>5. Trade in the bond market (% of GDP)</td>
<td>2.8</td>
<td>2.1</td>
</tr>
</tbody>
</table>


*See footnote 4.

*Unweighted average of the 11 countries.

*Excludes Bulgaria, Croatia, Estonia, Latvia, Romania.

Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia.

Financial assets of institutional investors as a per cent of GDP were 24.0 in the Czech Republic in 1994. They were 4.5% of GDP in Hungary in 1995 and 1.6% in Poland (source: OECD, 1997). Information about institutional investors in the other Central European countries is only available on a incidental and anecdotal basis and therefore left out.
The association between bank assets and per capita income, whereas such an association cannot be derived from Fig. 4: Fig. 4 indicates that the Central European stock markets are small, regardless of per capita income. Table 2 and Figs. 3 and 4 show that there is substantial variation among the transition economies with respect to the key indicators of the financial system.

If we compare the Central European countries with the western ones, it turns out that there are still very large differences. Stock market capitalization of the Central European economies is 10% of that of the twelve western economies in 1995. Trade in the stock markets is only 5% of that in the western economies, whereas trade in the bond markets is less than 2%. In the banking markets there are sizeable differences too, but they are not as large as those in the stock and bond markets. The size of deposit money bank assets in relation to GDP in the eleven Central European countries on average is one third of that in the twelve western economies in 1995. Bank credit to the private sector...
is one fifth of the average level that prevails in western economies. But note that the variation amongst the Central European countries is not much higher than that of the western countries dealt with in Section 2. In all, the financial sectors in the transition economies are not developed as far as those in the western economies. However, the diversity of financial systems in the two groups is quite similar.

4.2. Bank credit

In all Central European countries, banks were already in place before the political transformation. The breaking up of the monobank into a multibank system had been undertaken in some countries even before the transformation, e.g. in Hungary and Poland. As all countries put large efforts in the restructuring and development of their banking system, it is interesting to see how this has translated into the size of the banking sector during the transition period. Fig. 5 gives the development of the size of the volume of bank assets in relation to GDP. Note that we could not find all data for all countries during the years under consideration. Nevertheless, Fig. 5 can be used to derive some important observations. It shows that there is no general tendency with respect to the development of the size of the banking sector in Central Europe during the first seven years of the transition. In five countries (Estonia, Hungary, Latvia, Lithuania, Romania) the ratio between bank assets and GDP fell. In the other six countries, there is an increase in this ratio (note that it shows wide swings in Bulgaria). Fig. 6 gives the development of the amount of bank credit extended to the private sector in relation to GDP during the transition period. It too

![Figure 5](image-url)
shows that there is no general tendency with respect to the development of private bank credit as a percentage of GDP in Central Europe. In five countries (Bulgaria, Croatia, Czech Republic, Poland, Slovenia), bank credit to the private sector rose in relation to GDP. In Estonia and in the Slovak Republic, it appears to stabilize. In the other countries, bank credit to the private sector fell as a percentage of GDP.

When we combine Figs. 5 and 6, we find that bank assets and bank credit to the private sector both rose in Bulgaria, Croatia, the Czech Republic, Poland, and Slovenia. They both fell in Hungary, Latvia, Lithuania, and Romania. In Estonia and the Slovak Republic bank credit to the private sector is stable, but in Estonia total bank assets fell markedly, whereas they increased a little bit in the Slovak Republic. Thus we have a diffuse picture as regards the relative importance of the banking sector with respect to financing the transition.

Fig. 7 indicates whether or not the efforts to reform the banking sector have resulted in a de facto move of banks in the direction of the private sector, i.e. it shows the relation between bank credit to the private sector and total bank assets. As such, we abstract from non-balance sheet items and from invisible' financial services such as financial advise and payment services. In Fig. 7, we show this relation for the first and last year for which we have data available during the period 1990–1996. Between brackets are the first year of observation of the relation between bank credit to the private sector and the overall size of bank assets and, after the dot, the last year of observation for this relation. Fig. 7 reveals that for two of the eleven countries, bank credit to the private sector as a percentage of total bank assets was reduced. This reduction was substantial in Romania (−70%) as well as in Hungary (−27%). For the other nine countries, we find an increase in the share of bank credit to the private sector in total bank assets. In Poland this share quadruples, in Bulgaria it doubles.
Estonia also witnessed a substantial increase, whereas in the Czech and Slovak republics and in Latvia there is only a very modest increase (2%). In Lithuania the share of private credit in total bank assets rose with 7%, in Croatia with 20%. For the countries in Fig. 7, the average share of private credit in total assets was 42.0 in the first year, and 40.9% in the last year (-2.6%). This reduction is very much influenced by the case of Romania, when we exclude this country, it is 36.4 and 42.0, respectively (+15.4%).

From Figs. 5–7 we conclude that although in five of the 11 countries bank credit to the private sector fell, bank credit to the private sector increased as a percentage of total bank assets in nine countries. Only in two countries there is a relative reduction in bank credit to the private sector in the banks’ overall claims, namely Hungary and Romania. As such, it appears that the direction of the aims of the reforms of the banking sector – set out in Section 3 – is right’ in the period under consideration, with the exception of Hungary and Romania. Note that we abstract from risk and from the quality of the loan portfolio (see below and Gorton and Winton, 1998). Of course, one can imagine that larger increases in bank credit to the private sector would have been preferred, but that is quite another matter. It also is a matter that has been severely obstructed by the bad loans of the banks, most of which stem from the economic transition itself, rather than from the pre-transition era (Buch, 1996; Gorton and Winton, 1998). The health of the banking sector is crucial with respect to bank credit and the financial system itself. Table 3 gives the relative size of problem loans on banks’ balance sheets. These data were gathered from a large number of different sources and it is – once again – not clear whether they are
truly accurate. Furthermore, Table 3 presents the years in which the banking system experienced a major banking crisis and it also gives a recent indication of the average quality of the credit rating of commercial banks in Central Europe, as measured by Moody’s Investors Service. Table 3 suggests that in most countries, the bad loans problem has become worse during the start of the transition period and tends to be somewhat less severe in the last few years. The exceptions are Slovenia, Croatia, Estonia, and Romania (for the last country, however, we doubt the quality and accuracy of the data employed by the national bank). In particular, a steep increase in the bad loans problem appears to have been the case in the Czech and Slovak republics, Hungary, and Poland. These countries experienced major banking crises around 1993; some countries with a much lower per capita income were put up with such crises a few years later. Table 3 also reveals that, on average, the credit rating of banks in Central Europe is speculative grade.

The Czech Republic, Estonia, Hungary, Poland, and Slovenia have succeeded most in taking decisive action to reduce the bad loans problem. But note that the bad loans still make up a very substantial part of the overall bank portfolio (cf. in Western European countries, bad debts of 1–3% of the overall credit portfolio are quite common and bad debts of more than 5% of bank credit are regarded as a severe problem for the bank(s) involved). The fact that

Table 3

<table>
<thead>
<tr>
<th>Problems loans as a percentage of banks’ total assets</th>
<th>Average rating 3/97</th>
<th>Major bank crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>40</td>
<td>1996</td>
</tr>
<tr>
<td>Croatia</td>
<td>14 12 8</td>
<td>D</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>3 19 22 39 35</td>
<td>D</td>
</tr>
<tr>
<td>Estonia</td>
<td>7 4 4 3</td>
<td>1992</td>
</tr>
<tr>
<td>Hungary</td>
<td>4 11 21 43 30 22 16</td>
<td>D–D+</td>
</tr>
<tr>
<td>Latvia</td>
<td>30</td>
<td>1995</td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
<td>1995</td>
</tr>
<tr>
<td>Poland</td>
<td>17 27 31 29 21 16</td>
<td>D</td>
</tr>
<tr>
<td>Romania</td>
<td>14 6 5 4 7</td>
<td>E+</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>3 19</td>
<td>D</td>
</tr>
<tr>
<td>Slovenia</td>
<td>14 11 5</td>
<td>D+</td>
</tr>
</tbody>
</table>


a Ratings range from A (highest) to E (lowest), coverage of banking systems is not complete.
c Concerns percentage of credits overdue.
banks' credit ratings are speculative grade must be regarded as an important warning in this respect. Bahra et al. (1997) discuss various ways in which the banks' bad loans problem can be dealt with. Simple write-offs, workout departments, rescheduling, the transfer of the bad loans to a government sponsored institution, bank recapitalization, enterprise restructuring, debt–equity swaps, debt socialization, and, of course, combinations of these forms are put in practice. The whereabouts of these policies will not be further elaborated upon as this is not the central focus of this paper.

Table 4 gives the background of banking supervision in the transition economies (with the exception of Croatia) at year-end 1996 and gives the vision of the EBRD with respect to progress in transition for financial institutions. In general, the overall picture is strikingly similar. All countries allow for universal banking, though there are some restrictions in this respect in Bulgaria and Hungary. In most countries, the central bank is responsible for the prudential supervision of the banking system. The capital requirements in Hungary differ for different types of banks, and they are relatively high in the Czech and Slovak republics and in Hungary. All countries have implemented the Basle based capital adequacy requirements and try to implement the core principles for effective banking supervision (see Basle Committee on Banking Supervision, 1997), but their enforcement is somewhat dubious. Banks have to make provisions for bad debts. All countries limit concentration risk with banks and allow to some extent for participations in the non-banking sector. Deposit insurance schemes are either in place or being set up, apart from Latvia. The amount of deposits insured is always limited (cf. within the EU the limit is at least Ecu 20,000 or circa $ 23,000). In all, it turns out that the legal bank supervision framework is rather homogeneous and is directed at the framework that exists within the EU (see also Buch, 1997). However, the enforcement of this framework is somewhat doubtful. Furthermore, it must be pointed out that adhering to the Basle capital adequacy and bank supervision guidelines does not free a country from severe banking crises (see IMF, 1998). The last two rows of Table 4 illustrate the progress in transition countries with respect to banking reform and interest rate liberalization and with respect to securities markets and non-bank financial intermediaries. They reveal that on a scale with four classes the Central European countries on average qualify somewhat higher with respect to bank reform than with respect to reforming financial markets.

It appears that no real general trend can be observed with respect to bank credit in the Central European countries in the first seven years of the transition. In some countries, it showed an increase in relation to GDP, elsewhere it fell. The same applies to bank claims on the private sector. However, when we investigate bank credit to the private sector in relation to total bank assets, it turned out that banks' involvement in the private sector rose in the whole of Central Europe, with the exception of Hungary and Romania. Furthermore,
<table>
<thead>
<tr>
<th>Supervisora</th>
<th>BUL</th>
<th>CRO</th>
<th>CZR</th>
<th>EST</th>
<th>HUN</th>
<th>LAT</th>
<th>LIT</th>
<th>POL</th>
<th>ROM</th>
<th>SLK</th>
<th>SLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital requirement ($ mn)</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
<td>SA + CB</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
<td>CB</td>
</tr>
<tr>
<td>Capital adequacy (%)</td>
<td>5.5</td>
<td>3</td>
<td>15</td>
<td>5.5</td>
<td>0.1–15</td>
<td>5.5</td>
<td>5.5</td>
<td>6</td>
<td>6,2</td>
<td>14,4</td>
<td>4.1</td>
</tr>
<tr>
<td>Large credit exposures</td>
<td>8</td>
<td>20% of capital</td>
<td>8</td>
<td>25% of own funds</td>
<td>25% of capital</td>
<td>25% of capital</td>
<td>25% of own funds</td>
<td>25% of capital</td>
<td>25% of own funds</td>
<td>25% of capital</td>
<td>25% of capital</td>
</tr>
<tr>
<td>Total non-bank participations</td>
<td>N.A.</td>
<td>70% of capital</td>
<td>25% of capital</td>
<td>N.A.</td>
<td>51% of capital</td>
<td>60% of own funds</td>
<td>10% of capital</td>
<td>25% of capital</td>
<td>20% of own funds</td>
<td>25% of capital</td>
<td>N.A.</td>
</tr>
<tr>
<td>Deposit insurance</td>
<td>Under consideration</td>
<td>$ 11,700</td>
<td>$ 2900</td>
<td>In preparation</td>
<td>$ 4900</td>
<td>None</td>
<td>$ 12,500</td>
<td>$ 3400</td>
<td>Being set up</td>
<td>$ 2500</td>
<td>N.A.</td>
</tr>
<tr>
<td>Reserves/provisions for bad debts</td>
<td>1.25% loans; according to risk categories</td>
<td>Provisions for different risk categories</td>
<td>1% loans; provisions for different risk categories</td>
<td>Yes</td>
<td>1.25% loans; provisions for different risk categories</td>
<td>According to risk categories</td>
<td>Yes</td>
<td>Provisions for different risk categories</td>
<td>2% loans; provisions for different risk categories</td>
<td>N.A.</td>
<td></td>
</tr>
<tr>
<td>Reform</td>
<td>Banking</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Markets</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Bank for International Settlements, Handbook on Central Banks of Central and Eastern Europe; EBRD; OECD.

a CB = Central Bank; SA = Supervisory Authority (other than central bank).
we found an increase in bad loans in the starting years of the transition, but this was brought to a halt – and even brought down – later on. Bank regulation is quite homogeneous and is in line with the general recommendations of the Basle Committee.

4.3. Stock market

The development of stock markets in Central Europe has taken quite different paths (see Pohl et al., 1995). Some countries emphasized the rapid transfer of ownership from the state to private citizens (e.g. Czech and Slovak republics). Elsewhere, e.g. Poland, the creation of a capital market infrastructure and a gradual privatization were seen as an integrated process. Figs. 8 and 9 and Table 5 show the genesis of the stock market in the Central European countries. Fig. 8 gives stock market capitalization in relation to GDP. In Bulgaria, Croatia, Estonia, Romania, and Slovenia, market capitalization did not increase in the years under consideration. Elsewhere it rose substantially, especially in the Czech Republic, Hungary, and Lithuania. In the Czech and Slovak republics, Hungary, and Poland, stock market capitalization was 10% of GDP or more in 1996. Fig. 9 reveals that the trade in stock of the transition economies is still rather poor and is only clearly improving in Hungary, and in the Czech and Slovak republics. Various countries suffered from drawbacks because of major stock market crises. Table 5 shows the number of listings on the stock exchange. It reveals a quite similar pattern as Fig. 8. Listings tend to

Fig. 8. Stock market capitalization as a percentage of GDP, 1991–1996 (Source: IFC).
increase gradually, with the exception of Lithuania, and the Czech and Slovak republics, which all three encountered huge privatizations in the period under consideration. Though we lack data on equity issued on the stock exchanges in relation to investment, the small size of almost all of them reveals that the stock market cannot be regarded as an important additional source of external finance for the business sector, apart from some countries, where it is (or has been) an important outlet for the privatization of state-owned enterprises (see Perotti and Van Oijen, 1997). Frydman et al. (1998a) find that privatization of state enterprises in the Czech Republic, Hungary, and Poland significantly

Table 5
Number of firms listed at the stock exchanges

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>16</td>
<td>26</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croatia</td>
<td>29</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>1024</td>
<td>1635</td>
<td>1588</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>21</td>
<td>23</td>
<td>28</td>
<td>40</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>Latvia</td>
<td>17</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>13</td>
<td>351</td>
<td>460</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>9</td>
<td>16</td>
<td>22</td>
<td>44</td>
<td>65</td>
<td>83</td>
</tr>
<tr>
<td>Romania</td>
<td></td>
<td>7</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slovak Rep.</td>
<td>18</td>
<td>18</td>
<td>816</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>16</td>
<td>25</td>
<td>17</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: IFC, 1997 Emerging Stock Markets Factbook.*
improves their performance. This confirms the findings of Megginson et al. (1994) for privatizations in eighteen countries. Privatization especially appears to improve revenues. Frydman et al. (1998b) attribute the differences to different risk attitudes and to different degrees of accountability of the persons in control in state and in private firms. This seems to result from incentive effects (see also Shleifer and Vishny, 1997). Note, however, that privatized firms to a large extent are financed with internal funds too.

Fig. 10 shows the turnover ratio (i.e. the relationship between trade in equity and market capitalization of the stock exchange) of the Central European stock exchanges in the first and in the last year for which we have information in the period 1991–1996. The turnover ratio can be regarded as a measure of market liquidity. Fig. 10 reveals that in most exchanges market liquidity rose. Exceptions are Bulgaria, Croatia, Lithuania, and Slovenia, countries for which only few observations were available. On average, turnover in the first year of observation was 21%, and in the last year it had risen to 33% (+57%). This mainly results from the steep increases in the Czech and Slovak republics and in Poland (cf. in the twelve western economies in Section 2, turnover on average was more than 60% in 1995).

This brief survey of the stock markets of the Central European countries indicates that their development in general is very slow. Furthermore, the stock market is still very illiquid. In the remainder of this section, we investigate the argument, put forward in Section 3, that the development of stock markets is key in attracting foreign direct investment (see, among others, Pohl et al., 1995; Perotti and Van Oijen, 1997). Fig. 11 relates per capita income to per capita FDI. The amount of FDI is highest in Hungary (cumulative FDI-inflows
1989–1996 $ 1,288 per capita). In the Czech Republic it mounts to $ 642 per capita, Estonia ranks third with $ 459 and Slovenia ranks fourth with $ 366. FDI in Poland is $ 128 per capita and clearly lags behind (EBRD, 1997). Fig. 11 reveals that there is only a very slight positive association between per capita income and FDI. Fig. 12 relates stock market capitalization to FDI (both as a percentage of GDP; FDI measured as cumulative FDI-inflows 1989–1996). It shows again that in Hungary FDI is relatively high (31% of GDP); the other outlier – due to the large stock market capitalization – is the Czech Republic. Fig. 12 also reveals that there is no positive association between the size of the stock market and FDI. The development of stock markets, so far, seems not to have induced much FDI. The country that witnessed the largest capital inflows in the period under consideration, namely Hungary, only has a very modest stock market.

Fig. 11. Per capita income (horizontal axis) and per capita foreign direct investment (vertical axis) in US dollars (Sources: EBRD, IFC).

Fig. 12. Stock market capitalization as a percentage of GDP (horizontal axis) and foreign direct investment as a percentage of GDP (vertical axis) (Sources: EBRD, IFC).
The observations in this subsection reveal that the economic role of the stock market in the Central European countries is still very limited, with the exception perhaps of the Czech Republic. Both as an instrument for financing the economy and as instrument for (foreign) investments, the stock market at present offers little opportunity in and for Central Europe.

5. Conclusion

The financial system in Central Europe is still under construction. This paper showed the immense differences between western financial systems and those in Central Europe. The review of the western financial systems revealed that there is much dispersion in the structure of the financial system in these countries as regards both size and composition. We also reviewed the arguments for and against putting up a financial structure skewed towards either bank or market domination. Both types have their advantages and disadvantages. However, economic theory does not come up with conclusions regarding a method to minimize agency costs in the imperfect real world. Neither does it provide a clear-cut rationale for government intervention in the financial system. Furthermore, empirical studies also have failed to point out the superiority of a particular type of financial system to all other systems. Nevertheless, academics and multilateral financial institutions used the arguments and played an important advising role in the construction of the financial system in Central Europe. However, as transparency lacks with respect to their recommendations, we only have indirect sources that reveal how they may have advised Central European countries on financial system architecture. In general, it appears that setting up a safe and sound universal banking system was given priority. But capital markets were to be developed relatively quickly too. It is somewhat reassuring that the advise more or less regards banks and markets as complements, whereas the bulk of the economic literature on financial intermediation sees them as substitutes.

The empirical evidence on the financial sector in Central Europe is still much too meager to derive conclusions about the wisdom of the advise given. The financial sector is characterized by wide divergence as well as by much turbulence, as is revealed by the large number of banking crises. As always with social and economic change, there is path dependency and the developments are characterized by irreversibilities. The differences in the emerging skyline of the financial sector in Central Europe are – as in the more established ones in the west – mainly based on differences in culture, tradition, and geography. We found that the evidence in general tends to show that the direction of the transition develops along the lines of the ideas behind the original advise, both with respect to bank credit and stock markets: Banks are assumed to increase lending to the private sector; stock markets are assumed to offer both more
finance and (foreign) investment opportunities. Although bank credit in general and bank credit to the private sector did not clearly increase in relation to GDP in Central Europe, bank claims on the private sector rose in nine of the eleven countries under consideration. The only exceptions were Hungary and Romania. The stock markets in Central Europe still are small and lack liquidity. In the first years of the transition, they perform no financing role whatsoever for the private sector. Furthermore, we found that with respect to our indicators of the development of a financial system, the Central European economies tend to catch up more quickly in the case of the banking sector than in the case of the stock market. However, with respect to almost all indicators and for most of the countries, we find that changes in the financial structure are very slow. It turns out that there is only a weak positive association between the size of the banking sector and per capita income, whereas such an association is absent for the size of the stock market and per capita income. Also, there is no positive association between the size of the stock market and FDI-inflows. We found that the banking sector in most countries is still weak and is vulnerable to shocks, largely due to the substantial amount of bad loans in their portfolios. This remains a threat for a well-functioning financial system. The small and underdeveloped stock markets appear not yet to improve economic performance. On the other hand, it is very unlikely that huge risks for the well-being of the financial system will originate from these stock markets. This may be regarded as a blessing in disguise.

Acknowledgements

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