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Article

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Practice makes perfect: A review of banking in Central and Eastern Europe

You always pass failure on the way to success

Mickey Rooney



Armin Riess



Rien Wagenvoort



Peter Zajc

1. Introduction

Planned economies produced many goods and services - such as cars, electricity, and machinery - that did not differ fundamentally from those available in market economies. Certainly, the quality and variety of these goods and services did not reach Western standards and there was an almost perennial mismatch between demand and supply, with an excess demand for many goods and an over-supply of others. Yet, there was a supply of cars, electricity, machinery, and the like. This cannot be said about banking services, or finance in general, as known in market economies. For sure, there were financial flows and payments. But to the extent that they accompanied investment, they largely followed real resources that had been allocated before under the central plan, which - in turn - saw no need for key banking functions such as transforming assets, managing risks, and processing information on and monitoring of borrowers.

In creating market-driven banking sectors, all Central and Eastern European accession countries (CEECs) (1) encountered similar problems, notably a substantial amount of bad loans inherited from the communist past and the accumulation of new non-performing loans in the early years of transition. The latter was due to a combination of factors, in particular an inevitable lack of expertise in commercial banking, continued lending of incumbent banks to enterprises from the communist past with a doubtful future in an open economy, imprudent or fraudulent lending by a rapidly growing number of new banks, and - last but not least - weak banking sector regulation and supervision.

To address these problems, all CEECs embarked on far-reaching banking sector restructuring and recapitalisation programmes. While the timing and specifics of these programmes differed from country to country, their outcome has been quite similar across the region. Key structural features of the banking sectors that emerged after restructuring and recapitalisation can be summarised as follows (2):

- In most countries, the number of banks declined due to consolidation or exit, mainly of domestically owned banks; banks overwhelmingly follow the universal banking model.
- The number of banks and bank branches relative to the size of the population does not suggest that the CEECs are "over-banked" (3).
- In all countries except Slovenia, foreign strategic investors now dominate the market.

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1) Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

2) See Table A.1, A.2 and A.3 in the Annex for details.

3) In fact, Table A.2 in the Annex shows that branch density in the CEECs is much lower than in the EU, suggesting that CEECs are "under-banked" compared to the EU. However, the EU benchmark could be misleading for two reasons. For one thing, there is scope for technological leapfrogging (Berglof and Bolton, 2002) and, thus, modern distribution channels for banking services, such as Automatic Teller Machines and internet banking, are likely to develop more rapidly in the CEECs than in countries where these technologies were introduced first. For another, CEECs do not have a long history of using traditional brick-and-mortar distribution channels and, thus, modern modes of delivering banking services have a better chance of becoming substitutes for rather than complements to traditional distribution channels (Meigas, 2001).

The banking sectors that emerged in accession countries of Central and Eastern Europe have similar structural features.

Overall, more than ten years into the transition, all CEECs have made major strides in setting up banking sectors that are guided by market forces. This is a major achievement given where these countries started. However, cognisant of what has been achieved, we will argue in this paper that CEEC banks continue to operate considerably below their potential: they provide less finance to the domestic economy than they could and their current profitability is too low to ensure the soundness of banking. There are, however, no grounds for bashing the banks. Their so far limited contribution to the development of CEEC economies indicates that while properly functioning banking sectors had to be created from scratch they could not be created over night, and with hindsight one has to acknowledge that even a decade has not been enough. Taking a forward looking perspective, our aim is also to identify key obstacles to a more thriving CEEC banking sector and to indicate what it takes to make the sector live up to its potential.

The remainder of this paper is structured as follows. Section 2 provides evidence for the hypothesis that CEEC banks underperform in terms of how much, to whom, and how profitably they lend. Since we consider the lack of profitability a threat to the soundness of banking, this section also reviews the current situation in this respect. The next two sections set out why things are as we find them and, more importantly, how they could be improved. Section 3 explains why (and why not) banks lend too little to the domestic economy and what needs to happen to make them do more. Section 4 examines why the profitability of banks has been disappointing and how it could be raised. Section 5 focuses on how to ensure the soundness of banks as and when they strive for more business and higher profits. Section 6 concludes.

Two final introductory remarks are appropriate. First, data on the CEEC banking sector inevitably have their limitations, but we find them reliable enough - in particular after eliminating outliers - to reveal the essence of banking in the region. Second, we are interested in insights that are relevant for the majority of CEECs and, thus, have used a broad brush, sketching how things have developed on average in the CEECs. Obviously, not all CEEC banking sectors, let alone individual banks, fit this picture and we thus point out striking country specifics as we go along (4). With these caveats duly emphasised, we proceed.

2. Bank lending - below its potential, not profitable enough, but currently sound

In this section, we sketch three interrelated weaknesses of CEEC banking, namely the low degree of bank intermediation, excess funds in the system, and the meagre profitability of banks. But we also illustrate how the soundness of the banking sector has increased in recent years.

Low degree of bank intermediation

To measure the depth of bank intermediation, a variety of indicators are available (5). One that is frequently used is the ratio of bank claims on the domestic economy to GDP (6). Figure 1 shows how

4) For specifics on the Czech, Hungarian and Slovenian banking sector, see Hájková et al., Várhegyi and Zajc, respectively (all in this volume).

5) The World Bank has recently compiled an extensive database on the structure and development of financial sectors in different countries. See Beck, Demirgüç-Kunt and Levine (2000).

6) Domestic bank claims include claims on the government, public authorities, non-financial enterprises (private and public), and non-bank financial institutions; claims on other banks are excluded; it is worth noting that in addition to loans, claims may include bank holdings of debt securities and equity.

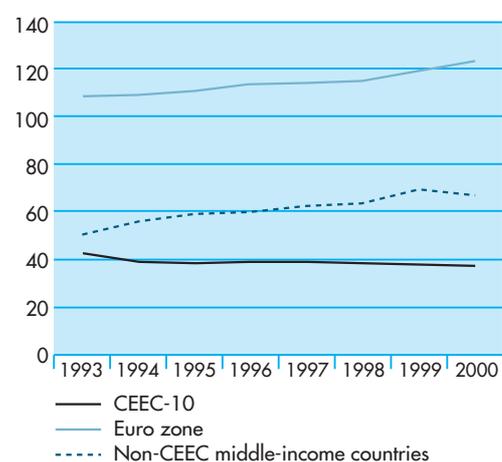
this indicator has evolved over time in three groups of countries, namely the euro zone, the CEECs, and a group of non-CEEC countries with a per capita income similar to that of the CEECs (7).

The contribution of bank finance to economic activity has remained surprisingly limited.

In the CEECs, domestic bank claims have virtually remained constant relative to GDP, with the ratio hovering around 40 percent since 1993. This suggests that CEEC banks have not taken on a more important role in the economy. By contrast, in other middle-income countries and in the euro zone, banks have become more important relative to economic activity. As a result, domestic bank claims (in percent of GDP) in other middle-income countries and the euro zone exceed claims in the CEECs by a factor of around 1.8 and 3, respectively. It is not surprising that the depth of bank intermediation is higher in more advanced countries of the euro zone. What is remarkable, however, is that the importance of banking in the CEECs has fallen further behind - both compared to the euro zone and other middle-income countries.

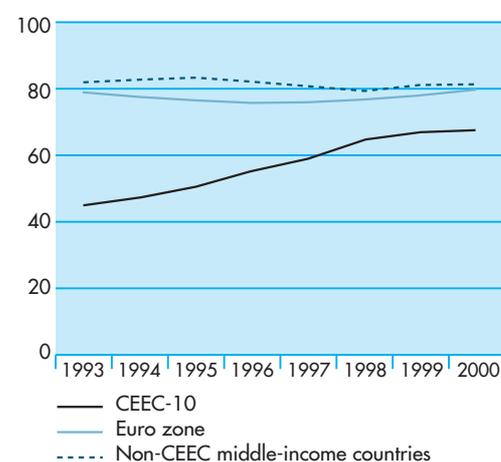
However, the situation in the CEECs is not as static as it appears at first glance. Figure 2 shows that CEEC banks have increased the share of funds channelled to the private sector (firms and households). In 1993, less than 50 percent of domestic bank claims consisted of private sector claims. By 2000, this share had gone up to almost 70 percent. It follows that during the period considered here, the ratio of bank claims on the private sector relative to GDP increased from about 20 to 28 percent. While this is encouraging, it does not necessarily mean that bank-intermediated finance has become more important for the private sector because, to a large extent, it reflects the increasing share of the private sector in economic activity resulting from a withdrawal of the state from commercial undertakings.

Figure 1. Domestic bank claims, in % of GDP



Source: IMF International Financial Statistics (IFS).

Figure 2. Claims on the private sector, in % of total



Source: IMF International Financial Statistics (IFS).

There are, of course, differences across countries. For instance, with a claims-to-GDP ratio of 60 percent in 2000, the Czech banking industry appears to be well ahead of the CEEC average even after a substantial decline in the ratio since 1997 on the back of several banking sector crises. This

7) The last country group comprises Argentina, Brazil, Greece, Korea, Mexico, Peru, Portugal, South Africa, Thailand and Turkey.

Box 1. Measuring financial depth

Alternative indicators

Bank claims on domestic borrowers include claims on the government, public authorities, non-financial enterprises (private and public), and non-bank financial institutions; excluded are claims on other banks.

Other indicators of financial depth essentially confirm that the CEEC banking markets remain underdeveloped. Frequently used indicators include the ratio of broad money to GDP. In 2000, broad money relative to GDP in the CEECs stood at about two-thirds of the euro zone average of 65 percent. However, compared to other middle-income countries, the CEECs were not lagging behind.

Limitations of the claims-to-GDP ratio

Although the indicator shown in Figure 1 gives an idea about the development of banking, some of its limitations should be mentioned. First, the indicator relates a stock variable (bank claims) to a flow variable (GDP). An alternative way to gauge the role of banks in an economy would be to compare the flow of bank finance to a measure of economic activity such as GDP or corporate investment. However, the data needed for this approach are difficult to compile on a coherent basis for the group of countries considered here. But there are indications that CEEC banks have lost ground in the area of corporate finance. For instance, Schardax and Reininger (2001) have pointed out that *new net lending* (i.e. the change in the stock of credit to the corporate sector) relative to gross fixed capital investment has fallen in the 1990s in Poland, the Czech Republic, Hungary and in Slovenia.

Second, even for countries at a similar stage of economic development, the indicator varies considerably and changes markedly over time. In France, for example, bank claims relative to GDP amount to only two-thirds of those in Germany, where the ratio stood at 150 percent in 2000. What is more, the ratio for Germany increased by 50 percentage points during the 1990s. Obviously, it would not be convincing to argue that in recent years banking in Germany developed that rapidly and that Germany's banking sector is considerably more advanced than the French banking industry.

Finally, the indicator does not account for the quality of bank claims. At the beginning of transition, CEEC banks inherited a large portfolio of loans to ailing state-owned companies, the government, and other public authorities. Inherited non-performing public sector loans have now been largely written-off or transferred to consolidation agencies and, as a result, the quality of banks' loan portfolios has improved. It follows that although the bank claims-to-GDP ratio has not changed - on average - in the CEECs, bank claims are likely to have a stronger link to the real sphere of the economy than ten years ago.

contrasts sharply with the experience in Poland and Slovenia, for example, where the level of bank intermediation has increased steadily albeit from a low level. Noteworthy are also trends in Hungary, a country that is widely perceived as being at the forefront of creating a private, market-driven banking sector. Interestingly enough, the mobilisation and allocation of funds of the Hungarian banking sector has lost in importance and is below the CEEC average.

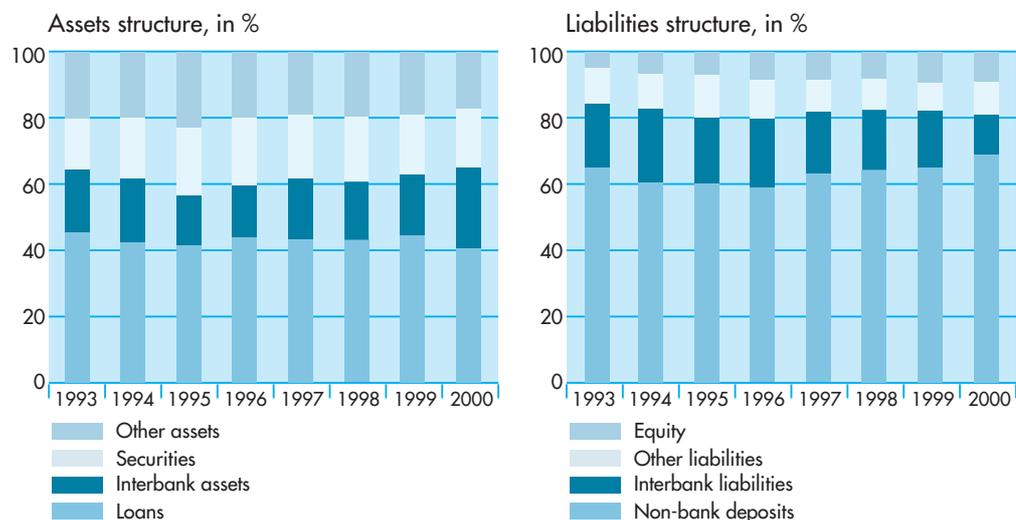
Overall, developments in the ratio of bank claims to GDP suggest that bank intermediation has remained shallow in the CEECs. It is true that the indicator used here has its limitations. But as we briefly discuss in Box 1, these do not necessarily imply that this indicator understates the actual importance of banks.

Banks mobilise more funds than they can lend domestically

We have seen that the provision of bank finance to domestic borrowers has remained low. We will illustrate next that bank lending to domestic borrowers was not constrained by a lack of financial resources.

Figure 3 shows how the balance sheet structure of an average CEEC bank evolved during 1993-2000. On the liability side, non-bank deposits - increasing from 65 percent of total liabilities to 69 percent - became an even larger source of funding. By contrast, interbank liabilities, reflecting borrowing from other banks, became significantly less important, with their contribution to total funding dropping from 20 to 12 percent. Finally, the other remarkable change was the doubling of equity from 4 to 8 percent of liabilities.

Figure 3. Balance sheet structure of CEEC banks



Notes: Other assets comprise fixed assets, cash and other earning and non-earning assets.

Source: Own calculation based on Bankscope (8).

With a doubling of equity and an increase in non-bank deposits, the structure of bank liabilities has improved.

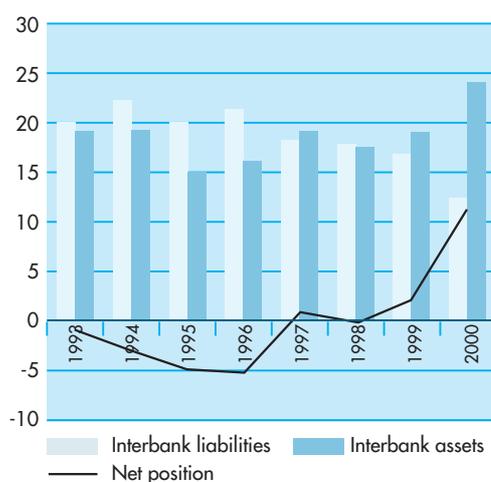
The decline in interbank liabilities in favour of non-bank deposits implied a shift towards a source of funding that normally carries a lower interest rate, thus improving the liability structure of banks' balance sheets. An improvement in the liability structure also resulted from a higher equity contribution, enabling banks to invest in riskier though potentially more profitable assets while still meeting the Basle capital adequacy principles. Did CEEC banks seize this opportunity?

Developments in the structure of bank assets do not suggest that this was the case. As Figure 3 indicates, the share of loans in total assets remained virtually constant at 40 percent and there was thus no increase in the portion of funds allocated to potentially more profitable assets. To put things in perspective, it is worth noting that credit institutions in the EU allocate on average 50 percent of their assets to loans. Figure 3 also indicates that interbank assets, reflecting lending to other banks, increased from about one fifth to one quarter of bank assets. Next to interbank assets, the holding of securities was the third largest component, accounting for one fifth of assets. The share of other assets fell slightly, mainly because of a drop in the portion of banks' cash balances.

8) Bankscope is a firm-level database of Bureau Van Dijk (Brussels).

Overall, the most striking change in the balance sheet structure of banks was the relative decline in interbank liabilities and, at the same time, the rise of interbank assets. Figure 4 illustrates that towards the end of the decade interbank assets exceeded interbank liabilities by a considerable margin. In interpreting this net position, it is important to recall that Figure 4 shows aggregate data for the CEEC banking sector. Hence, the net position reflected net claims against non-CEEC banks, largely, but not exclusively, EU banks. The CEEC banking sector has thus become a net creditor of non-CEEC banks.

Figure 4. Interbank assets & liabilities of CEEC banks, in % of balance sheet



Source: Own calculation based on Bankscope.

Figure 5. Claims & liabilities of CEEC banks vis-à-vis BIS reporting banks, in USD bn



Source: BIS Quarterly Review (2002).

CEEC banks are net external creditors in capital-importing countries.

Other data sources, such as statistics of the IMF and the Bank for International Settlements (BIS) confirm this result. International Financial Statistics of the IMF show that all CEEC banking sectors, with the exception of Estonia and Latvia, had a positive net foreign asset position in 2000. Net foreign assets were particularly high in the case of Bulgaria, Romania, and the Czech and Slovak Republics. BIS data (BIS, 2002), which are pictured in Figure 5, tell that CEEC banks have been net lenders to BIS reporting banks since the mid-1990s. The exception here are the Hungarian and Estonian banking sectors, which have borrowed net from BIS reporting banks.

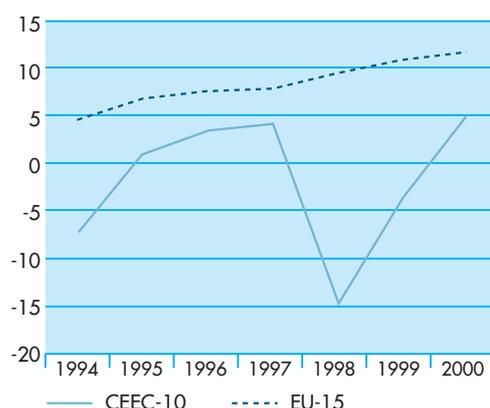
In sum, the rising share of non-bank deposits in liabilities together with the constant, if not falling, loan-to-asset ratio indicate that CEEC banks are mobilising savings in excess of what they are willing to lend to domestic borrowers. The surplus is invested abroad. We thus arrive at the startling conclusion that the CEEC banking sector is a net exporter of capital in a group of capital-importing countries.

Meagre profitability but improved soundness of banking

Another feature of banking in the CEECs is that it has not been particularly profitable. To assess banks' profitability we calculate real returns on equity (after tax) on the basis of banks' income

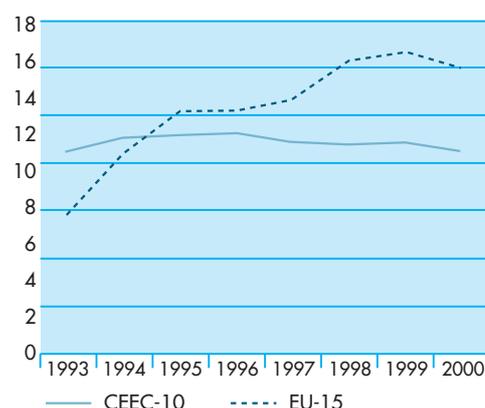
statements (9). Figure 6 shows that the average real return on equity of CEEC banks was considerably below the real return on equity of EU banks - many of them not being top performers either by international standards.

Figure 6. Real return on equity of banks in the CEEC and the EU, in %



Source: Own calculation based on Bankscope.

Figure 7. Cooke ratio of banks in the CEEC and the EU, in %



Source: Own calculation based on Bankscope.

Obviously, the CEEC average can be influenced by developments in particular countries and, at the same time, masks differences across countries. For instance, the heavy losses that the CEEC banking sector experienced in 1998-99 reflected - among other things - major problems in the Czech banking sector. And then, the positive outcome in 2000 was largely due to sizeable profits in Slovakia, Estonia and Latvia while the profitability of banking in other countries was modest and Romania's banking industry continued to incur losses.

Real returns to bank equity have been low but the banking sectors' capital cushion has grown nevertheless.

Low profitability does not bode well for the soundness of banking. However, at present, CEEC banks are well capitalised and, thus, the lack of profitability is not an immediate threat. Figure 7 illustrates that the Cooke ratio (bank capital in percent of risk-weighted assets) for the average CEEC bank has increased sharply, reaching almost 16 percent in 2000. This value is twice as high as the Basle regulatory requirement and exceeds the average capital adequacy ratio of EU banks by more than 4 percentage points (10).

But it is clear that the comfortable capital cushion has been thanks to one-off measures and not retained profits. For one thing, bank recapitalisation - financed by foreign strategic investors and the public purse - has doubled the share of equity on the liability side of banks' balance sheets (as

9) Adjusting nominal returns for inflation allows a comparison of the profitability of CEEC banks with that of banks in the EU where inflation has been lower. Using RoE for the nominal return on equity and π for the rate of inflation, the real return on equity is $RRoE = \frac{1 + RoE}{1 + \pi} - 1$. An additional comment is useful. Foreign owners of CEEC banks made their equity contribution in a non-CEEC currency, mainly the euro. To the extent that CEEC currencies appreciate against the euro, owners make foreign exchange profits that $RRoE$ does not account for. While this is correct, we would find it misleading, for a variety of reasons, to include such profits in a measure of bank performance. The most fundamental reason is that if investors want to take a foreign exchange bet, there are simpler options than buying banks.

10) It has been observed that CEEC banks may aim for a higher-than-required capital adequacy ratio to signal their solvency and, thereby, attract deposits needed for expanding business in a lending environment that is inherently more risky than that of the EU. See, for instance, Fries and Taci (2001).

was illustrated in Figure 3), thus raising the numerator of the Cooke ratio. For another, an increasing portion of funds has been allocated to less risky assets, such as deposits with banks in the EU (Figure 3), that carry lower capital requirements and, therefore, reduce the denominator of the Cooke ratio.

Having sketched the main deficiencies of banking in the CEECs, we now turn to the question of how the situation can be improved.

3. Enhancing bank lending to domestic borrowers

We have argued that the degree of bank intermediation in the CEECs is low and that banks do not provide as much finance to the domestic economy as they could. This raises the question of why that is so and what remedies could be taken.

Why CEEC banks do not lend as much as they could

A possible reason could be that CEEC banks are charging too high interest rates on their lending, de facto cutting off a large share of demand. To investigate this, we calculated the real intermediation spread that banks charge when channelling funds from depositors to borrowers. Box 2 sets out the specifics of this calculation; suffice to note here that it rests on the difference between banks' lending and deposit rates, adjusted for both inflation and the effect of central banks' minimum reserve requirement policies (11). Obviously, a positive spread is necessary to compensate banks for intermediating funds but excessive spreads would curb the flow of funds through the banking system.

Bank intermediation spreads are not excessive and thus do not explain why bank lending has been meagre.

Figure 8 does not suggest that the real spread for bank intermediation in the CEECs is excessive. Real spreads are lower now than they were in 1995, with the CEEC average amounting to less than 4 percent. More important, spreads in the CEEC banking sector are below those in the EU. This is rather surprising, as one would expect that CEEC banks need higher spreads than their EU counterparts given that the economic environment in which they have to operate is more volatile than in the EU. But we have seen that CEEC banks seem to be paying for this in terms of low profits and, in fact, one could argue that they have reduced real spreads to a level they can ill afford.

Low and falling real spreads have been a feature of all CEEC banking sectors, with the exception of Poland where spreads have been on the rise in recent years though they are still not exceeding the EU average (12). Figure 8 also shows that the real bank intermediation spread has fallen quite substantially in Hungary. Overall, falling spreads indicate that the CEEC banking sector has been exposed to increasing competition. In part, this has been due to the entrance of foreign banks into the market. But competition from non-resident banks that are lending directly to CEEC borrowers has also played a role. Foreign bank entry and non-resident bank lending has particularly benefited blue-chip companies, while the impact of competition on other market segments has probably been more limited. The degree of competition in other market segments will depend on bank concentration. As Figure 9 suggests, the concentration in the banking industry of the Czech

11) These adjustments are necessary to make comparisons across countries with different rates of inflation and reserve requirement policies. While the wedge created by inadequately remunerated reserves makes bank intermediation more expensive, it cannot be taken as indication that banks overcharge their borrowers and/or offer too little to depositors.

12) A possible explanation for the rising spread in Poland is the considerable tightening of monetary conditions in recent years. In these circumstances, upward adjustments in deposit rates often lag increases in lending rates and, thus, spreads widen.

Box 2. Interest spread corrected for inflation and reserve requirements

Methodology: We assume that a bank sets its lending rate in a world without uncertainty as a function of the (i) profit it wants to achieve, (ii) deposit rate offered to its depositors, (iii) reserve requirement on deposits, and (iv) the remuneration of reserves. The monetary authorities set the latter two rates. Consider a one-period model. At the beginning of the period, the bank receives deposits and supplies loans. At the end of the period, the depositors get back their savings (including interest) and borrowers pay back their loans (including interest). The following equation shows the link between these variables, with those pertaining to bank assets and liabilities on the left-hand side and the right-hand side, respectively:

$$(1) \quad (1-k)(1+i_l) + k(1+i_r) = (1+i_d) + M$$

In (1), k is the reserve requirement, i_l, i_d and i_r are the nominal lending, deposit, and reserve remuneration rate, respectively. On each unit of deposits the bank receives a nominal spread M . This spread can be set simultaneously with nominal lending and deposit rates such that any real spread can be obtained given the inflation rate. The bank's spread must cover its operating costs, such as personnel expenses, and normally includes an additional margin to achieve a proper return on equity.

Using (1), the spread between the nominal lending and deposit rates can be written as

$$(2) \quad (i_l - i_d) = k(i_l - i_r) + M$$

Furthermore, the spread between the nominal lending rate and the nominal rate on reserves is equal to

$$(3) \quad (i_l - i_r) = (1 + \pi)(r_l - r_r)$$

In (3), r_l and r_r are the real lending rate and the real reserve remuneration rate, respectively; π is the rate of inflation. Using (3) in (2) gives

$$(4) \quad (i_l - i_d) = k(1 + \pi)(r_l - r_r) + M$$

Equation (4) shows that the nominal interest rate spread (the left-hand side of (4)) depends non-linearly on both inflation and the reserve requirement. Dividing (4) by $1 + \pi$ and rearranging terms leads to the real intermediation spread of banking (M_{real}):

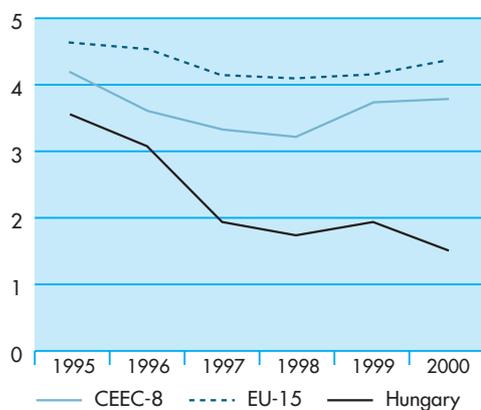
$$(5) \quad M_{real} = r_l - r_d - k(r_l - r_r)$$

For $k=0$, M_{real} is equal to the difference between the real lending rate (r_l) and the real deposit rate (r_d).

Data: To compute M_{real} , we took IMF-IFS data on lending and deposit rates as well as inflation. For most countries, the lending rate refers to a weighted average of short-term rates offered to all types of borrowers. In the case of Poland, however, the lending rate is the rate charged by commercial banks on loans to prime borrowers. Data on reserve requirements and their remuneration are based on central bank publications.

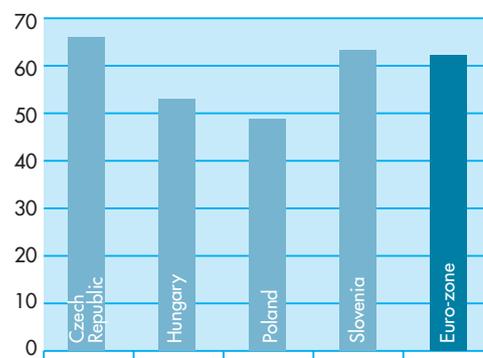
Republic, Hungary, Poland and Slovenia is similar to the euro zone average, with concentration measured by the share of the five largest banks in total banking sector assets. In any event, trends in real spreads do not suggest that a possibly too concentrated banking sector has prevented the mobilisation and allocation of funds at reasonable terms.

Figure 8. Real bank intermediation spreads in the EU and the CEECs, in %



Notes: CEEC-8 excludes Bulgaria and Romania.
Sources: Own calculation based on IMF-IFS and central bank publications.

Figure 9. Market concentration in selected CEECs and the euro zone, in % (2000)



Notes: Share of five largest banks in total banking sector assets. The euro zone figure is for 1998 and reflects a simple average.
Sources: National central bank publications and Belaisch *et al.*, (2001).

We thus do not find evidence for the notion that CEEC banks charge too much for their loans and we therefore need to consider other reasons why CEEC banks prefer, at the margin, lending to non-CEEC banks over loans to domestic borrowers.

One observation to start with is that although maturity transformation is a salient feature of bank intermediation, there are limits to the maturity risks that banks can prudently take. The high ratio of deposits to liabilities of around 68 percent (as shown in Figure 3) indicates that CEEC banks rely to a large extent on short-term funds, which limits their possibilities to extend long-term loans. For comparison, in the EU, deposits account for 42 percent of liabilities and long-term sources of funds, such as securities, are far more important. In principle, CEEC banks could offer short-term loans to private, domestic borrowers, but demand for such loans may be low and, more important, banks may consider investing in short-term government debt and placements with non-CEEC banks better alternatives.

And then, CEEC banks also receive foreign currency deposits and, in light of this, it is tempting to argue that banks place funds with non-CEEC banks to avoid currency risks. This could be achieved, however, through foreign currency lending to domestic borrowers, which is substantial in many CEECs. In any case, currency risk hedging could not explain why the CEEC banking sector is in a net external creditor position: If hedging were the issue, a balanced position would suffice.

Shortcomings in risk appraisal and management capacity and in the judicial environment curb the role of banks in channelling funds to domestic borrowers

Another explanation could be a dearth of viable investment. This needs a bit of explanation. At first glance, one is inclined to think that the process of catching-up with higher living standards elsewhere in the world comes with ample investment opportunities and all it takes to realise them is sufficient finance. While opportunities are indeed high, closer inspection of the transition process

reveals a number of reasons why realised investment may fall short of both opportunities and available finance. Lack of entrepreneurial expertise in identifying, seizing, and carrying out investment opportunities is one of them.

A more important string of reasons, however, reflects the very nature of the product that financial systems offer. In market economies, banks - and other suppliers of funds - provide finance to users of funds in exchange for a promise to return these funds in the future together with an appropriate remuneration. A salient feature is that these promises are sometimes broken. It is clear that this possibility dampens banks' willingness to lend, in particular when bank staff, as in the CEECs, is still developing experience in appraising, pricing, and managing risks.

Shortcomings in the legal framework further undermine banks' willingness to take risk and lend. This is because banks not only need the risk management know-how, the legal framework must also enable them to actually manage risks. Insufficient protection of creditor rights deters banks from extending loans that, in principle, promise adequate returns. Creditor rights comprise two important aspects: the possibility, first, to hold and seize collateral and, second, to recover loans - at least partially - through bankruptcy procedures. If these possibilities are limited, banks will be reluctant to lend in the first place and, as a result, economically viable investments do not materialise.

Wagner and Iakova (2001), for instance, provide evidence for an insufficient protection of creditor rights in a number of CEECs. Typical problems are reported to include low collateral recovery, legal restrictions on the disposal of assets backed by real estate, tax laws discouraging write-off of bad loans, and slow and inefficient bankruptcy procedures.

In an environment of insufficiently protected creditor rights and not yet fully developed risk appraisal and management capacity, lending tends to be limited to most creditworthy borrowers. The problem - from the perspective of CEEC banks - is that these borrowers often have access to non-bank finance and loans from non-resident banks and there is, thus, stiff competition in this market segment. To illustrate this, claims of BIS reporting banks on non-bank borrowers in the CEECs have risen from less than USD 10 billion in 1994 to USD 30 billion in 2001 (BIS, 2002). This is equivalent to one-fifth of CEEC bank lending to the domestic economy. To complete the picture, it also needs to be kept in mind that because of the large presence of foreign direct investors in the non-financial sector of CEEC economies, there is a substantial flow of intercompany loans, effectively limiting the potential for domestic bank intermediation.

Banks are exposed to considerable competition from cross-border finance.

Removing obstacles to bank intermediation

We have identified three main reasons - in part mutually reinforcing - for the relative lack of bank intermediation in the CEECs, namely considerable competition from cross-border finance, underdeveloped risk appraisal and management capacity, and shortcomings in the legal framework.

Obviously, competition from cross-border finance should not be an economic policy concern. What is important for the development of the CEECs is that finance is made available to profitable

investment at the lowest cost and whether the funds are foreign or domestic is of second-order importance. An observation to make is, of course, that cross-border finance serves a certain clientele, essentially foreign and domestic blue-chip companies, but does not reach less creditworthy domestic borrowers. While this is true, it certainly does not mean that cross-border finance itself impedes the flow of funds to potential borrowers with a lesser credit standing.

As to risk appraisal and management skills, it is rightly emphasised that they are important for ensuring the soundness of banking systems, with the worry being that inadequate risk assessment and management results in too much risk taking. But the opposite could be true as well: inadequate risk assessment and management could imply that banks exaggerate risk and, as a result, shy away from viable investment projects; this seems to be especially tempting when banks, as in the CEECs, are still recovering from a bad loan hang-over. It would be erroneous to presume that foreign owners that now dominate the CEEC banking sector can rectify this problem quickly, essentially by transferring banking know-how, experience, and culture over night. On the contrary, passing on these virtues, which is part of creating the institutional set-up of a functioning market economy, will take time. But the important point to take away is that improving the ways of doing business is a task for the banks themselves and does not require public policy measures.

Improvements to the legal framework in combination with better risk assessment and management capacity are key for enhancing the role of bank finance in the economy.

By contrast, improving the legal framework, creditor rights in particular, is a public policy issue *par excellence*. La Porta *et al.*, (1997) and Levine *et al.*, (2000), among others, provide compelling evidence that appropriate legal foundations are of critical importance for the effective operation of financial systems and thus economic growth. Although all CEECs have made considerable progress in designing legal frameworks that are necessary for a functioning market economy, there continues to be scope for further improvements, including the need to close the gap between the extensiveness and the effectiveness of these legal foundations (EBRD, 2001).

Improvements to the legal framework in combination with better risk assessment and management capacity of banks hold considerable potential for raising banks' willingness to lend and to increase the share of bank funds that are ploughed back into the domestic economy. While this can be expected to help the economy at large, it should be especially beneficial in circumstances where the processing of information on potential borrowers is particularly costly. One example that comes to mind is lending to borrowers in peripheral regions. Another example - related to the first one - is lending to small and medium-sized enterprises (13). One thing should be clear though: in the absence of such improvements, CEEC banks are doing the right thing by investing surplus funds abroad; it would be worse if they ignored such shortcomings and lent to risky projects in the domestic economy; not only would this undermine the soundness of the CEEC banking sector, but it would also be bad for profitability, an issue that we address next.

13) A separate question is whether and, if yes, what additional measures are needed to enhance the supply of finance to SMEs. Credit guarantee schemes are in operation in many CEECs. The purpose of such schemes is to enable smaller firms with a viable business plan but insufficient collateral to obtain bank loans. Evidence from the CEECs suggests that the utilisation of such schemes has been disappointing (European Commission, 2000) mainly due to a lack of clarity concerning the risk sharing between banks and the agency in charge of the guarantee scheme; genuine or perceived problems arising from loan appraisal and processing procedures; and efforts to recover too much of the cost of guaranteeing loans from final beneficiaries, essentially curtailing the demand for loans under such schemes.

4. Raising the profitability of bank lending

Next to the lack of domestic bank intermediation, the other salient feature of the CEEC banking sector that we identified in Section 2 is its unsatisfactory profitability: from the point of view of an international investor, CEEC banks have, on average, generated very meagre real returns on equity.

Why CEEC bank profitability has been low

To find out what can be done to raise profits, we first have to understand why they have been rather low. In general, the profitability of a bank depends on a variety of factors, including its cost efficiency, the structure and quality of its investment portfolio, its capital structure, and the degree of competition in the industry. The income and balance sheet statement of a bank features variables that provide information on these factors. Box 3 explains how the after-tax return on equity for a bank can be explained in terms of income and balance sheet variables. As equation (4) in Box 3 summarises, the real return on equity ($RRoE$) depends positively on the net interest margin (NIM), the share of earning assets in total assets (EAA), and on the contribution of non-interest income ($RNIIR$). And then, the real return on equity is the higher the lower are operating cost (OC) and taxes (T). Finally, for a profitable bank, the real return on equity is the higher, the larger the ratio of assets to equity (A/E).

While an upward trend in non-interest income has had a positive impact on bank profitability, considerable operating costs have ultimately prevented the generation of adequate profits.

Table 1 shows for an average CEEC bank developments in the real return on equity and its components (14). The gist of what happened to the return on equity in 1994-2000 can be summarised as follows:

- Trends in non-interest income ($RNIIR$) had a very positive impact on the performance of banks. In percent of total equity, real non-interest income increased from less than 4 percent to almost 28 percent. In the absence of that increase, the real return on equity in the CEEC banking sector would have been lower still.
- Changes in the real net interest margin ($NIM/(1 + \pi)$) had, on average, a negative impact on profitability. The downward pressure on margins from 4.2 to 3.7 percent has been due to increased competition in the face of a continuously high, though falling, share of non-performing loans.
- Banks were modestly successful in managing overall assets more effectively. The importance of fixed capital, cash, and other non-earning assets declined and, as a result, the portion of earning assets in total assets (EAA) increased to almost 90 percent.
- Operating cost moved in favour of the real return on equity at the beginning of the sample period. However, changes in operating costs clearly exerted a negative impact on profitability in 1998-99. In 2000, there was again a change to the better.

14) Note that in general $E[xy] \neq E[x]E[y]$. Therefore, equation (4) of Box 3 does not necessarily hold for the average values presented in Table 1 although it holds at firm level.

Table 1. Average real return on equity and its components in the CEEC banking sector

| | <i>RRoE</i> (in %) | <i>A/E</i> | <i>E/A/A</i> (in %) | <i>NIM/(1+π)</i> (in %) | <i>RNIIR</i> (in %) | <i>OC/A(1+π)</i> (in %) | <i>T/A(1+π)</i> (in %) |
|------|-----------------------|------------|------------------------|----------------------------|------------------------|----------------------------|---------------------------|
| 1994 | -7.3 | 17.1 | 87.8 | 4.2 | 3.4 | 3.5 | 0.7 |
| 1995 | 0.8 | 16.5 | 87.0 | 4.1 | 6.4 | 3.2 | 0.6 |
| 1996 | 3.6 | 15.4 | 87.7 | 3.7 | 13.9 | 3.1 | 0.6 |
| 1997 | 4.0 | 15.6 | 87.3 | 4.1 | 13.6 | 3.2 | 0.8 |
| 1998 | -14.6 | 15.1 | 86.7 | 4.1 | 14.6 | 4.3 | 1.0 |
| 1999 | -3.6 | 15.2 | 88.5 | 4.1 | 25.4 | 4.3 | 1.1 |
| 2000 | 5.0 | 15.0 | 89.5 | 3.7 | 27.8 | 3.8 | 1.1 |

RRoE Real return on equity

A/E Asset-to-equity ratio

E/A/A Share of earning assets in total assets

NIM Net interest margin

RNIIR "Real return on equity arising from non-interest income (before costs and taxes)"

OC Operating cost

T Taxes and other items (net)

A Total assets

π Rate of inflation

Source: Own calculation based on Bankscope.

Overall, the disappointing performance of CEEC banks has been largely due to adverse trends in operating cost that were only partially compensated for by rapidly rising non-interest income and a slightly better management of assets. In light of this, it is worth shedding more light on the level and composition of operating costs in the CEEC banking sector.

In 2000, operating costs stood at 4 percent of total assets. For comparison, in the EU banking sector, operating cost amounted to the equivalent of around 2 percent of assets. As there have been a number of banking sector crises - affecting individual CEECs to a different degree and at different times - it is not surprising that relatively high loan loss provisions help explain high operating costs of the CEEC banking sector. Provisions fluctuated substantially over the 1990s, mirroring the timing of banking sector crises, but they were particularly high in 1998-99 when banks in a number of countries, in particular the Czech Republic, faced serious losses. By 2000, they had fallen again, amounting to 0.8 percent of assets. For comparison, in the same year, loan loss provisions in the EU banking sector reached the equivalent of 0.2 percent of assets.

Box 3. Real return on equity

To analyse the factors that have influenced banks' real return on equity we start with the accounting definition that profit after tax (P) is equal to the sum of net interest revenue (NIR) - which, in turn, is interest income minus interest expenses - and non-interest income (NII) minus operating costs (OC) and taxes (T):

$$(1) \quad P = NIR + NII - OC - T$$

It is important to note that operating costs as understood in (1) comprise - in addition to personnel and administrative expenses - depreciation of fixed assets and loan loss provisions (the latter including the write-off of loans not provisioned for). This is the definition of operating costs in the firm-level data base *Bankscope* of Bureau Van Dijk (Brussels) that we have used for our empirical analysis.

The accounting return on average equity (RoE), in nominal terms, in anyone year is defined as after-tax profit (P) in percent of average equity (E), with the latter being the average of the equity at the beginning and the end of the year. Using (1), we can thus write

$$(2) \quad RoE = \frac{NIR}{E} + \frac{NII}{E} - \frac{OC}{E} - \frac{T}{E}$$

We rearrange (2) further by introducing the so-called net interest margin (NIM), which is computed as net interest revenue (NIR) divided by the average stock of earning assets (EA). With this, and the average stock of total assets (A), equation (2) becomes

$$(3) \quad RoE = \frac{A}{E} \left(NIM \frac{EA}{A} + \frac{NII}{A} - \frac{OC}{A} - \frac{T}{A} \right)$$

Equation (3) shows the nominal return on equity as a function of variables that are, with the exception of T , reported in *Bankscope*. For our analysis, we treat T as a residual that includes, in addition to taxes, items such as extra-ordinary profits or losses and provisions for pensions.

To finally arrive at an expression for the real return on average equity ($RRoE$), we recall from footnote 9 that the link between real and nominal returns is given by $RRoE = (1 + RoE)/(1 + \pi) - 1$, where π is the rate of inflation. With this, we get

$$(4) \quad RRoE = \frac{A}{E} \left(\left(\frac{NIM}{1 + \pi} \right) \frac{EA}{A} - \frac{OC}{A(1 + \pi)} - \frac{T}{A(1 + \pi)} \right) + RNII$$

In (4), $RNII = (1 + NII/E)/(1 + \pi) - 1$, which can be considered the real return on average equity arising from non-interest income (before costs and taxes).

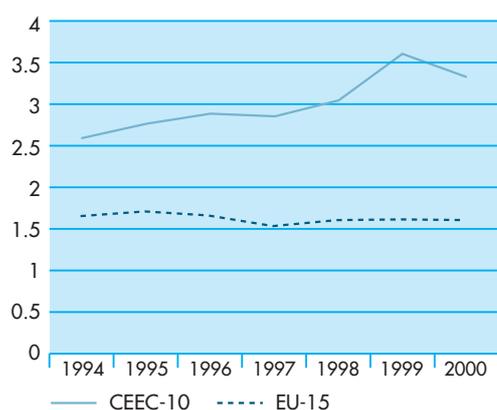
Substantial loan loss provisions and a rapid increase in personnel expenses explain high operating costs.

But bad credits have certainly not been the only reason for the high operating costs and the low profitability of CEEC banks. Figure 10 shows for the CEEC and the EU banking sectors operating costs excluding loan loss provisions: even without provisions, operating costs of CEEC banks have been markedly above the EU level. In fact, the cost difference between the two banking sectors has increased over time and, as a result, CEEC banks' operating costs (excluding loan loss provisions) are more than twice as high as in the EU banking sector.

What was driving these developments? Figure 11 shows that a steep rise in personnel expenses in the CEEC banking sector and a substantial decline in this cost item in the EU banking sector explain

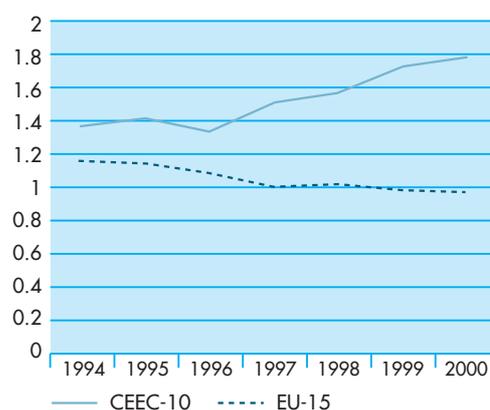
a good part of the increasing difference in operating costs. Indeed, CEEC banks employ more than seven times as many people as EU banks to manage assets of EUR 1 billion! CEEC banks are thus far less efficient and, given the current level of assets, overstaffed (15).

Figure 10. Operating cost excluding loan loss provisions, in % of total assets



Source: Own calculation based on Bankscope.

Figure 11. Personnel expenses, in % of total assets



Source: Own calculation based on Bankscope.

Increased lending is the key to higher profitability

As far as costs relative to assets are concerned, our analysis indicates that CEEC banks have fallen further behind Western banks instead of catching up with them. To some extent, this is not surprising because, to develop their businesses, CEEC banks inevitably had to incur upfront costs, including expenses on personnel and modern banking technology. The challenge in the period ahead will be to align the size of earning and - one should stress - performing assets with operating costs.

An obvious possibility to achieve this is to cut costs. Cost reductions would address X-inefficiencies, which means that a given level of output, measured here by the size of assets, could be produced at lower cost. A recent study of O'Brien and Wagenvoort (2000) on the EU banking sector shows that such inefficiencies and, thus, the scope for cost savings are substantial. In light of its very high level of operating cost (relative to assets), it seems fair to conjecture that X-inefficiencies also characterise the CEEC banking sector. Cutting costs, including personnel expenditures, therefore seems to be a means for increasing profitability.

Asset growth and a greater focus on high-yielding investment seem to be necessary to boost profits.

Another - equally obvious - possibility is to increase assets. The same study by O'Brien and Wagenvoort reports that cost economies of scale are found up to a bank size, measured by assets, of about EUR 5 to 10 billion. The vast majority of CEEC banks are operating at a much lower scale, with an average bank size of EUR 1 to 1.5 billion. This suggests that further consolidation can contribute to increasing the profitability of banks. What is more, it suggests a considerable potential for CEEC banks to benefit from economies of scale by lending more (16).

15) Strictly speaking, a formal comparative analysis of the cost efficiency of credit institutions should follow the cost frontier approach, which allows to take into account differences in output quantities and input prices when comparing cost across banks (see, among others, Altunbas et al., (2001) and Wagenvoort and Schure (1999) on the efficiency of EU banks).

16) Strictly speaking, this statement only applies to cost-efficient banks, i.e. those that have eliminated X-inefficiencies.

Asset growth alone is unlikely to be good enough, however. What needs reversing is the shift towards safe but low-yielding assets documented in Section 2. To earn sufficient returns, assets must include potentially highly profitable though riskier loans to borrowers that CEEC banks currently shy away from. From a policy perspective, we are thus back to what has been discussed in the previous section since the obstacles that have prevented a higher degree of bank intermediation are obviously the same that stand in the way of a greater focus on better remunerated investment.

Raising the profitability of banking is certainly in the interest of bank owners. But it is also crucial for maintaining the soundness of the CEEC banking sector. We look at this issue and related economic policy questions in the next section.

5. Ensuring the soundness of banking

While the sector is currently well capitalised, this comforting position has been due to capital injections in the context of bank restructuring and privatisation but not because retained profits augmented banks' own funds. In the period ahead, capital ratios of a growing banking sector could erode quickly if banks do not become more profitable. Renewed capital injections are unlikely unless, that is, CEEC banks generate adequate returns to shareholders. But in that case, there is no - or less - need for capital injections in the first place, since profits contribute to banks' own funds.

The trouble is that a strategy aimed at higher profits needs to include increased lending to potentially very profitable but also riskier borrowers. In principle, this should not pose problems provided that banks properly assess, price and monitor the risks they are taking. In practice, and not only in the CEECs, this cannot be taken for granted and, thus, to prevent banks from building up a loan portfolio that could threaten the stability of the banking system, any shift towards riskier borrowers needs to be accompanied by vigilant prudential regulation and supervision.

While adequate profits are crucial for the viability of banking, banks' strive for higher profits needs careful monitoring by supervisory authorities.

In this respect, there continues to be scope for further progress. While an appropriate regulatory and supervisory framework for the banking sector has been established in all CEECs, there remains a difference between writing rules and regulations, on the one hand, and putting them into practice on the other (EBRD, 2001 and Lannoo and Salem, 2001). Obviously, with banks possibly moving into riskier territory, enhancing the effectiveness of prudential regulation and supervision becomes ever more urgent.

Additional regulatory and supervisory challenges are likely to arise as and when the CEECs fully implement the *acquis communautaire*, i.e. the full body of EU laws and regulations. To avoid a misunderstanding from the outset: In light of what the CEECs have achieved in setting up market-driven banking sectors, adopting the *acquis* does not constitute the kind of liberalisation shock that hit other emerging countries when they liberalised and opened up their financial systems. Still, two elements of the *acquis* that pose a particular challenge for bank regulation and supervision are worth highlighting.

First, with fully liberalised capital account transactions, the CEEC banking sector may experience an increase in gross capital inflows. In striving for higher profitability in an increasingly competitive

market, banks will be tempted to take more risk than they can bear. The financial and banking sector crises of the 1990s, notably in Asia, are a stark reminder that a fully open capital account can create havoc in the absence of effective banking sector regulation and supervision.

Second, the deposit insurance schemes that the *acquis* calls for may not - contrary to their intention - strengthen the soundness of the CEEC banking sector (see, for instance, Lannoo, 2000). The main purpose of insuring deposits against bank failures is to prevent a run on deposits of solvent banks, which - if it occurs - could result in the collapse of a principally solvent banking sector. The drawback of such schemes is that they could give rise to moral hazard behaviour, essentially for two related reasons. For one thing, deposit insurance reduces the incentives for depositors to monitor banks' performance and to withdraw deposits when banks encounter difficulties. For another, this relieves banks from the disciplinary effect of possible bank runs and, as a result, tends to raise the attractiveness of *ex ante* more profitable though riskier loans. Overall, this may lead to excessive risk-taking.

Full capital account liberalisation and generous deposit insurance schemes further strengthen the need for more effective prudential regulation and supervision.

Excessive risk-taking is the more likely, the larger the deposits covered under the scheme. The relevant EU directive (17) stipulates that deposit insurance schemes should normally cover aggregate deposits of each depositor of up to EUR 20 000. While this is close to the average GDP per capita of current EU members, it is a multiple of the average income in the CEECs and, thus, implies a more serious weakening of the market discipline that uninsured depositors could, in principle, exert on the behaviour of banks. Deposit insurance schemes that adequately reflect the circumstances of individual CEECs seem warranted and, in fact, derogations from the *acquis* are being negotiated for the Baltic countries, for instance. Even in these cases, however, it is envisaged that the EU minimum of EUR 20 000 will have to apply from 2008 onwards. By that time, this minimum will still be high relative to the level of income in these countries.

The possibly adverse effect of excessive capital inflows and generous deposit insurance schemes on the soundness of the CEEC banking sector raises the question of whether countervailing measures could and should be taken. One measure that has been proposed by commentators is the requirement for banks to regularly issue subordinated debt, i.e. debt that is junior to all other liabilities except equity. The interest rate on this debt would, in principle, reflect the market's assessment of how risky the issuing bank is. Since it would be in the interest of banks to launch such debt at reasonable cost, they have an incentive to strike the right balance between the return to and risk of their loan portfolio. The terms at which such debt is issued and traded in the market provides a signal to bank creditors (including depositors) and supervisory authorities as to the soundness, or lack thereof, of the issuing bank.

Subordinated-debt proposal have been made for developed countries, but also for emerging markets where supervisory capacity is weak (see, for instance, Calomiris, 1997). While the proposal has, in principle, some appeal, doubts have been raised as to whether the conditions for making this a successful instrument exist in emerging markets (Karacadag and Shrivastava, 2000). Important conditions include the possibility to monitor bank assets and the presence of reasonably

17) *Deposit Guarantee Schemes Directive (94/19/EC)*.

Proposals for using capital markets to monitor the soundness of banks appear to be premature.

well-developed capital markets with arm's-length investors who have sufficient interest in both monitoring banks and acquiring their debt. Given the rather shallow development of capital markets in most CEECs (see, for instance, Köke and Schröder, this volume), a subordinated-debt requirement seems premature for the CEEC banking sector.

Another measure to ensure the soundness of banking in a challenging and sub-optimally regulated and supervised environment would call on CEEC banks to maintain Cooke ratios in excess of the Basle minimum of 8 percent. The rationale is that excessive risk-taking, possibly fostered by generous deposit insurance, is less likely if banks have more equity at stake. We see two problems of this proposal. For one thing, it is currently redundant given that CEEC banks, on average, already maintain Cooke ratios not only above 8 percent but also above the level observed in EU countries. For another, it would distort competition between foreign-owned and domestically owned banks. This is because in an enlarged EU, the "single passport" becomes valid in countries that join the EU. As a result, CEEC branches of banks from current EU countries will be subject to the prudential regulation and supervision of these countries, which do not require higher Cooke ratios (18). All other things being equal, CEEC branches of EU banks have scope for reducing lending rates and raising deposit rates, thereby increasing their market share and their profits. Overall, the competitive position of domestically owned banks is liable to suffer if they are required to maintain a higher-than-normal Cooke ratio.

In sum, there do not seem to be feasible alternatives to more effective banking sector supervision. Progress on this front will be crucial for maintaining the soundness of banking as and when banks are striving for higher profits in a world of fully open capital accounts.

6. Conclusions

More than a decade after embracing capitalism, all CEECs have advanced considerably in creating market-driven banking systems. While this is no minor feat given that such systems did not exist at the end of the 1980s, it is also true that bank intermediation has remained shallow, banking sectors mobilise more funds than they can lend domestically, and that banks lack profitability.

A variety of factors explain this situation. From a policy perspective, weaknesses in the judicial environment are a main hurdle to an increased role of banks in channelling funds to the domestic economy. Improvements in this area together with further progress on the part of banks in strengthening their risk assessment and management capacity are crucial pre-conditions for a more thriving and profitable banking sector.

For banks to become more profitable, their assets need to reach a level that is consistent with operating cost. More lending alone is unlikely to do the trick and, as a result, cost reductions will have to contribute. Furthermore, an increase in profits is hard to achieve without a greater focus on assets that promise higher risk-adjusted returns to banks than their current loan portfolio.

18) While these branches still have to operate in a challenging environment, the risks associated with the CEEC loan book can be pooled and diversified within the overall portfolio of the bank. This enhances the credibility of branches without carrying higher-than-normal capital on their balance sheets.

All accession countries of Central and Eastern Europe have made strides in creating market-driven banking sectors - but the transition is not yet over.

Our interest in the need to raise profitability does not reflect concerns about banks' shareholders. It is rather because profits are essential to ensure the long-term viability of banking and, thus, the steady development of the CEEC economies. At present, the CEEC banking sector is well-capitalised and sound, but in the absence of adequate profits its comfortable capital cushion could erode quickly. Having said this, it is also true that in search for higher profits, banks may take excessive risks. To limit this possibility and its adverse impact on the soundness of the banking sector, supervisory authorities need to carefully watch banks' struggle for higher profits.

Overall, the trials and tribulations of Central and Eastern European accession countries in creating banking systems are a reminder that building the institutional framework for a market economy takes time. Still, all accession countries have progressed greatly and - though challenges remain - there is no reason why the CEEC banking sector should not prosper in the years to come.

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Annex

Table A.1 Number of banks in the CEECs

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-----------------|------|------|------|------|------|------|------|
| Bulgaria | 40 | 41 | 42 | 28 | 34 | 34 | 35 |
| Czech Republic | 52 | 55 | 55 | 53 | 50 | 45 | 40 |
| Estonia | 22 | 18 | 13 | 11 | 6 | 7 | 7 |
| Hungary | 43 | 42 | 42 | 47 | 44 | 42 | 42 |
| Latvia | 55 | 41 | 34 | 31 | 27 | 23 | 21 |
| Lithuania | 22 | 15 | 12 | 14 | 12 | 13 | 10 |
| Poland | 82 | 81 | 81 | 83 | 83 | 77 | 84 |
| Romania | 20 | 24 | 31 | 33 | 36 | 34 | 33 |
| Slovak Republic | 27 | 31 | 29 | 29 | 26 | 25 | 23 |
| Slovenia | 33 | 31 | 29 | 28 | 24 | 25 | 25 |
| Total | 396 | 379 | 368 | 357 | 342 | 325 | 320 |

Sources: National central bank publications and EBRD (Transition Report, 2001).

Table A.2 Indicators of access to banking services in selected CEEC and EU countries

| | Year | Inhabitants per bank | Inhabitants per branch | Inhabitants per employee | ATMs per 1 million inhabitants | Assets (in mil. Euro) per employee |
|---------------------------------|------|-------------------------|---------------------------|-----------------------------|--------------------------------------|--|
| Czech Republic | 2000 | 255 608 | 5 556 | 222 | 160 | 1.7 |
| Hungary | 2000 | 238 876 | 9 091 | 379 | 250 | 1.2 |
| Poland | 2000 | 522 220 | 16 667 | 278 | | 0.7 |
| Slovenia | 2000 | 79 640 | 3 448 | 181 | 430 | 1.4 |
| Euro-area (excl. Luxembourg) | 1998 | 78 663 | 1 923 | 128 | 540 | 6.6 |

Source: OECD (2001), Belaisch *et al.*, (2001), National central bank publications, and Eurostat.

Table A.3 Assets of foreign-owned banks as a percentage of total banking sector assets

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-----------|------|------|------|------|------|------|
| Bulgaria | | | | 47 | 73 | 76 |
| Czech R. | 10 | 12 | 15 | 16 | 28 | 54 |
| Estonia | 2 | 2 | 2 | 90 | 90 | 97 |
| Hungary | 37 | 43 | 61 | 59 | 61 | 67 |
| Latvia | 41 | 69 | 71 | 76 | 74 | 74 |
| Poland | 4 | 14 | 16 | 17 | 49 | 70 |
| Romania | | | | 20 | 48 | 51 |
| Slovak R. | | | | | 25 | 76 |
| Slovenia | | 5 | 5 | 5 | 5 | 5 |

Source: National central bank publications.