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CLAUDIA M. BUCH
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Capital Flows to Transition Economies:
How Risky is Financial Integration?

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*Capital Flows to Transition Economies:
How Risky is Financial Integration?*

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1. THE DEBATE

The share of countries which are restricting the free flow of capital has declined world-wide in the past decades. Whereas, in 1970, about 80 percent of all countries regularly surveyed by the IMF had restrictions on capital flows, this share had dropped to about 66 percent in 1998 (Table 1).

Table 1
Restrictions on Capital Flows 1970-1998

	1970	1980	1990	1998
Number of reporting countries	117	140	153	184
Share of countries with restrictions on capital account transactions (%)	79	75	78	66
Share of countries imposing restrictions on cross-border financial credits (%)	–	–	–	62

Source: IMF (1999)

At the same time, the financial crises that hit South-East Asia, Russia, or Brazil in recent years highlighted the potential risks of integrating emerging market economies into international capital markets. What is particularly troublesome about the events in Asia is that financial crises have hit countries which had long been praised for their strong reliance on long-term foreign direct investment to finance current account imbalances. Yet, as it turned out, they had incurred substantial short-term debts and proved to be just as vulnerable to reversals of capital flows as many other developing countries, notably in Latin America, before. There are two features of these crises that have both stimulated the academic debate on the risks and benefits of capital account liberalization and have prompted various new policy initiatives:

First, high shares of short-term capital flows seem to make countries vulnerable to financial crises. If short-term capital flows (suddenly) reverse, countries are forced into severe adjustment crises. Second, structural weaknesses in domestic banking systems have been singled out as a major contributing factor to the emergence and spreading of currency crises. If foreign capital is channeled mainly through commercial banks, and if the incentive systems of these banks are distorted, foreign funds are likely to be invested inefficiently. Also, if commercial banks have a high exposure to foreign exchange rate risks, a devaluation of the domestic currency will reduce their net worth, thus suppressing capital inflows and further aggravating balance of payments problems.

The transition economies of Central and Eastern Europe are a group of countries for which policy lessons from earlier crises are particularly urgent. The more advanced reform countries such as the Czech Republic, Hungary, Poland, and Estonia have temporarily had capital inflows

amounting to more than 10 percent of GDP in the past couple of years. While foreign direct investment has been important for these economies, portfolio investment and other short-term capital flows have increased as well recently. Sustainable current account positions have thus become a major policy issue for the reform countries (EBRD 1998; Fries et al. 1998).

The possible causal relationship between capital account liberalization and the occurrence of currency crises¹ has spurred a debate on possible remedies and a reform of the international „financial architecture“. The proposals that are being discussed comprise improving reporting standards and disclosure requirements, new standards for the international activities of commercial banks, an improved coordination of international financial market supervision, or a re-definition of the role of the International Monetary Fund. One of the most far-reaching and also the most controversial proposal is the re-introduction of capital controls, in particular controls on short-term capital.² Yet, for the transition economies of Central and Eastern Europe, the maintenance or imposition of restrictions on capital account transactions may not be warranted in view of the envisaged membership in the European Union of these economies and of the commitments towards capital account convertibility made under membership in the OECD.

The aim of this paper is fourfold. First, we present stylized facts on the integration of international financial markets, emphasizing in particular the volatility of capital flows, and the role of the advanced transition economies of Central and Eastern Europe (section 2). Second, we discuss the risks and benefits of financial market integration in general (Section 3). We discuss the links between cross-border capital flows and economic growth, focusing on the effects of capital flows on domestic savings and investment, on the role of capital flows in the international propagation of new technological knowhow, and on the impact of capital flows on the efficiency of the domestic financial sector. Subsequently we discuss the determinants of the structure of capital flows, their volatility characteristics, and the ensuing implications for the vulnerability of recipient countries to balance-of-payments crises and contagion.

Third, we discuss the role of banks in financial crises and possible policy measures at the national level (Section 4). The focus of the analysis is on the potential advantages that the market entry of foreign banks can bring for the transition economies, and we discuss the links between banking and balance of payments crises, i.e. the so-called “twin crises”.

Finally, we deal with the special risks and benefits of short-term capital flows and present empirical evidence on the expected change in the share of short-term capital for selected transition economies (Section 5). We discuss whether the implementation of a tax on short-term capital flows can make the transition economies of Central and Eastern Europe less vulnerable to

¹ Empirical evidence does in fact show that currency crises are more frequent in those countries that have previously liberalized capital flows (see Kaminsky and Reinhart 1998).

² The original proposal stems from Tobin (1978).

adverse external shocks and to sudden withdrawals of foreign capital. Section 6 concludes and summarizes the main arguments.

2. GLOBALIZATION OF FINANCIAL MARKET

In this section, we survey the evidence on the degree of integration of global capital markets, and on the the volatility of capital flows. We focus in particular on the Central and Eastern European candidates for EU accession. The Czech Republic, Estonia, Hungary, Poland, and Slovenia have started negotiations with the EU about accession in March 1998 and have opened in summer 2000 the last of the 31 different chapters of the "*acquis communautaire*", which represents the complete framework of EU legislation. Bulgaria, Latvia, Lithuania, Romania, and Slovakia have started negotiations about EU accession in February 2000. Under optimistic assumptions about the progress of the negotiations concerning the *acquis communautaire* and of the necessary reforms of EU institutions, EU accession for the most advanced transition countries could be feasible in the year 2005 or 2006.

2.1. Volume and Structure of International Capital Flows

The on-going academic debate on how to measure the degree of financial integration and capital mobility appropriately has still not been settled. Nevertheless, most empirical studies come to the conclusion that the degree of international capital mobility is much higher today than at any time since the First World War. Emerging markets in particular participate in international capital flows to an increasing degree. These developments certainly reflect the progressive liberalization of capital flows during the past decades but also the substantial technical progress which has eased the movement of capital across borders.

At the same time, there is ample evidence that the degree of capital mobility today is not extraordinarily large compared to earlier episodes. Taking a long-run perspective, Obstfeld and Taylor (1997) find that interest rate differentials between the UK and the US were relatively small during the time of the pre-1914 Gold Standard. Subsequently, and in particular during the Second World War, interest differentials increased considerably; a similar widening could be observed in the late Bretton Woods period. Recent data show a decline of interest rate differentials to levels observed at the turn of the past century.³ For Europe, Lemmen (1998) finds that covered interest parity conditions provide strong support for an increasing degree of financial integration over time. Likewise, Obstfeld (1995) shows close linkages between on- and offshore rates for most developed markets while arguing that less-developed countries show a lower degree of integration.

³ Similar results are obtained for a measure of real interest parity (Obstfeld and Taylor 1997).

Apart from arbitrage tests of capital mobility, the most often used and, at the same, the most often criticized measure of capital mobility is the one suggested by Feldstein and Horioka (1980). The intuition behind this measure is that, under perfect capital mobility, the marginal product of capital would be equalized across all countries. An exogenous increase in the savings rate in one country would therefore lead to increased investment in all countries. As regards the empirical measurement, Feldstein and Horioka found a close link between national savings and investment, and this result has been confirmed by a host of subsequent studies.⁴ Although there is evidence for an increase in capital mobility in recent decades based on this measure, international capital mobility would thus have remained imperfect. Taking a longer-term perspective, Taylor (1996) shows that the level of capital mobility that had been achieved in the early 1990s can be seen as a return to the levels observed already during the time of the Gold Standard. For the transition economies, Buch (1999) compares estimates of the savings-investment correlation to those for the southern members of the EU. The comparison shows that the transition economies have reached a similar degree of integration in quantitative terms.

While differences between domestic savings and investment correspond to net capital flows, a simple, yet intuitive alternative way to measure financial market integration is the volume of gross capital flows. Relating gross international capital flows to gross domestic financial flows, Golub (1990) reaches similar conclusions as the literature that focuses on net flows: capital mobility has remained incomplete but has been on the rise. For OECD countries, Buch und Pierdzioch (2000) show that gross capital in- and outflows typically move quite parallel and have increased quite significantly in the second half of the 1990s. Net capital flows, to the contrary, have remained relatively flat. Still, the volume of cross-border capital flows relative to gross domestic product tends to be relatively small, reaching about 10 percent of GDP for most developed markets.⁵ For some transition economies, gross capital flows have been decidedly larger during the past decade, and net capital inflows have typically closely tracked gross inflows (0 on page **Error! Bookmark not defined.**).

Buch and Piazzolo (2001) assess expected changes in the magnitude of capital flows to transition economies, focusing in particular on the role of EU enlargement. Their results suggest that countries that join the EU are likely to receive more capital from other EU countries than from countries which are not members of the Union. For most EU accession countries, actual levels of capital flows are still far below the expected values. The Czech Republic, Hungary, and Poland stand out and have come closest to the expected values. However, if one accounts for an additional EU effect, even these three advanced transition countries have not yet reached the levels we would expect to see under full EU membership. For the other seven accession countries, there generally remains a substantial gap between the actual data and the expected

⁴ See Bayoumi (1990, 1999), Coakley et al. (1995), Montiel (1994), Sinn (1992), or Taylor (1996) for surveys.

⁵ The exceptions are countries such as Switzerland or the United Kingdom which host international financial centers.

levels. Consequently, the results imply a considerable integration effect with regard to capital flows, particularly for the second round candidates for EU accession.

Table 2a

Structure of Gross International Capital Flows in the 1990s

	Share in global capital flows (%)		Structure of capital flows (%)	
	Industrialized countries ^a	Developing countries	Industrialized countries ^a	Developing countries
Outflows	88.6	7.4	100.0	100.0
FDI	93.7	6.3	22.6	18.0
Portfolio investment	93.7	4.5	38.1	21.6
Other investments	81.8	10.5	39.4	60.4
Inflows	79.0	18.1	100.0	100.0
FDI	60.1	38.3	13.2	36.8
Portfolio investment	84.7	13.0	46.2	31.0
Other investments	80.2	14.8	40.2	32.2
Averages for the years 1991-1997. a) Excluding international organizations.				

Source: IMF (1998)

With regard to the *structure* of international capital flows, developing countries differ from developed countries (Table 2a). In the 1990s, gross capital inflows for industrialized countries were dominated by portfolio investments and other investments. FDI accounted for a relatively small share of 13 percent. Developing countries, in contrast, relied on FDI much more heavily. In fact, the three sources of finance were of roughly equal importance. As for capital outflows, the pattern for industrialized countries by and large resembled the pattern for inflows. For developing countries, in contrast, other investment outflows dominated (60 percent), FDI and portfolio investment were of similar importance.

For transition economies, other investments (bank loans and trade credits) mostly dominated the picture, making up between 40 and 60 percent of all inflows, except for Hungary and Poland, where they were negative because of the repayment of foreign debt, and Bulgaria, where they had a much higher share (Table 2b). FDI came second with shares between 27 and 66 percent, except for Poland, where the share was much higher, and Bulgaria, where it was hugely negative. Portfolio investments generally were least important, although they made up a share of almost 40 percent in Hungary. Compared to the overall pattern in Table 2a, for the transition economies the

share of FDI in total inflows was broadly similar to the FDI share of developing economies, whereas other investments were more, and portfolio investments were less important.

Table 2b

Structure of Gross Capital Inflows into Transition Economies, 1990–1999

	Foreign Direct Investment	Portfolio Investment	Other Investments
Czech Republic	34.9	13.2	51.9
Estonia	41.8	17.1	41.2
Hungary	65.9	38.7	–4.3
Poland	116.1	18.6	–34.7
Slovenia	27.5	24.6	47.8
Mean 1st round candidates	57.2	22.4	20.4
Bulgaria	–128.5	8.9	219.6
Latria	37.7	4.5	57.8
Lithuania	34.9	13.1	52.0
Romania	46.7	1.6	51.7
Slovakia	32.7	13.3	54.0
Mean 2nd round candidates	4.7	8.3	87.0
Mean overall	31.0	15.4	53.7

Source: IMF (2000)

A significant difference emerges when comparing the structure of capital inflows between the first- and second round accession candidates. For the first round countries, FDI clearly dominated the picture, partly due to the exceptionally large weight of this category for Poland, whereas for the second round countries other investments dwarf everything due to the exceptionally large weight of this category for Bulgaria. But even when leaving out these two outliers, FDI still had the largest share in the first-round countries, whereas other investments dominated for the second-round countries.

As regards changes in the structure of global capital flows over time, there certainly is a trend towards an increasing securitization of financial assets. Bank credits, in particular, are increasingly being substituted through bonds which are easier to trade, a trend which has been promoted through improvements in information technology. Hence, while the degree of capital mobility to date might not differ much from the degree of capital mobility at the turn of the previous century in quantitative terms, it does certainly differ in qualitative terms. At the same

time, it should not be overlooked that banks are still playing a crucial role in providing access to international financial markets for small and mid-sized firms (Eichengreen and Mody 2000).

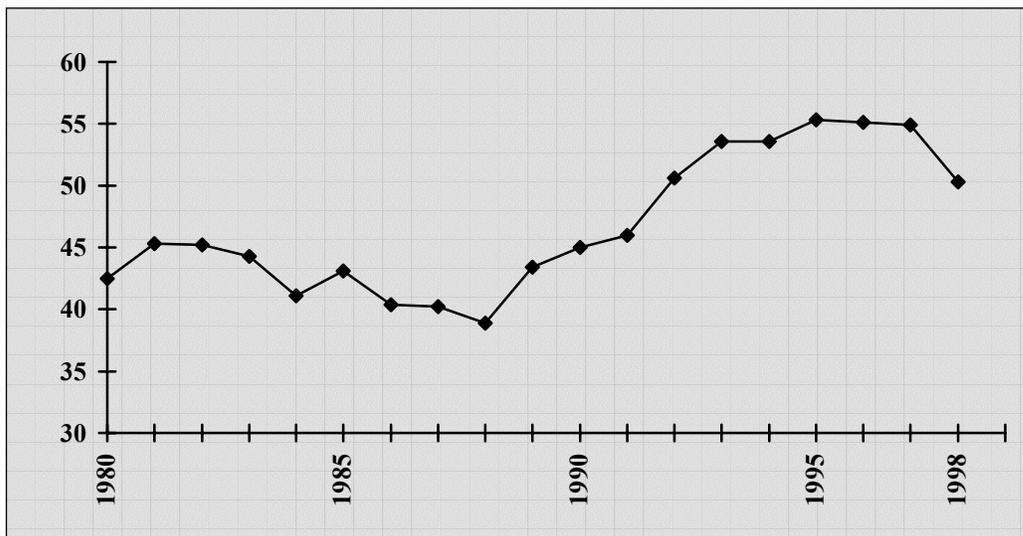
Generally, the observed stylized facts are in line with theoretical models which explain international capital flows. Applications of the pecking order theory of finance to an international setting (Razin et al. 1998, Hull and Tesar 2001) conclude that the share of bank finance can be expected to fall over the course of economic development, mainly because information costs tend to decline.

An additional piece of evidence which is of interest when analyzing trends in international capital flows is the share of short-term capital. After all, a high exposure to and large swings of short-term capital are often held responsible for the occurrence of currency crises. Unfortunately, however, standard balance of payments statistics give only an insufficient measure of this share. Inflows of financial credits and portfolio capital flows are often not classified according to their maturity. Data provided by the Bank for International Settlements (BIS) on the maturity structure of bank lending towards countries outside the BIS reporting area can be used as an indicator though (Graph 1). These data show that the share of short-term loans in total lending has shifted upward when comparing the early 1990s to the 1980s. While, in the 1980s, roughly 40 percent of all foreign loans had a maturity of less than one year, this share increased to more than 50 percent in the early 1990s. It has come down again since 1998 (World Bank 2001).

Overall, Mussa et al. (1999) note that there seems not to have been a secular trend towards an increasing share of short-term foreign debt in recent decades. Yet, they confirm the evidence presented in Graph 1: remaining maturities have tended to shorten during the boom phase of large capital flows between the late 1980s and mid-1990s while they lengthened afterwards.

Figure 1

Short-Term Loans (% of Total Foreign Loans Granted to Countries Outside the BIS Reporting Area) 1980-1998



Source: BIS (1999).

Yet, these aggregated data cloud substantial differences between different groups of countries (Table 3). In the 1990s, short-term liabilities towards international banks were particularly high in Asia (values of more than 60 percent prior to the Asian financial crises), and reached about 50 percent in Latin America. The share of short-term capital has been below average for the transition economies of Central and Eastern Europe in contrast (about 40 percent).

Table 3

Share of Short-Term International Bank Credits by Country (%) 1992–2000

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Asia	59.0	62.8	62.9	63.5	61.5	60.6	52.5	46.0	47.5
Eastern Europe	27.3	37.2	35.2	39.1	44.2	43.4	36.0	39.4	41.0
Czech Republic	40.4	48.6	49.3	50.0	58.8	53.5	52.0
Hungary	23.8	26.9	30.7	34.6	39.2	34.2	34.7	29.5	30.6
Poland	31.4	33.1	23.2	29.6	33.2	38.1	40.7	39.7	37.2
Slovenia	39.8	30.9	17.8	21.2	22.9	22.0	20.8
Latin America	43.4	50.0	51.3	52.3	53.7	54.8	51.8	48.3	49.0
Argentina	47.6	52.6	53.4	56.5	44.8	61.4	54.8	52.5	52.6
Brazil	48.5	54.8	50.3	56.0	63.0	64.1	56.0	54.1	53.7
Chile	42.7	52.4	53.7	54.7	51.2	49.8	39.6	32.8	38.3
Mexico	42.4	47.1	51.3	45.4	60.1	61.3	44.9	38.2	38.1

Source: BIS (2000).

To summarize, global capital mobility — as measured by arbitrage conditions, investment-savings correlations, and gross international flows — remains imperfect but has risen substantially in recent decades. For the transition economies considered in this paper, these measures suggest a degree of integration into international capital markets similar to that achieved by the Southern members of the EU. Nonetheless, simulation results suggest that the imminent accession to the EU might lead to significant additional capital inflows to the accession countries from current EU members. In view of the balance of payments constraints that the transition economies are facing and the already high capital inflows of recent years, in particular for the first round accession states, we would expect mainly a change in the structure of capital flows, however, away from FDI and bank lending to portfolio investments.

Clear differences exist between developed and developing economies with regard to the structure of capital flows. Whereas portfolio inflows dominate in developed economies, developing economies rely on portfolio capital, foreign direct investment, and other investments in roughly equal proportions. The transition economies covered here do not readily fit either of

these patterns. Bank lending has been the most important source of capital inflows for them, followed by FDI. This is particularly pronounced for the second-round accession candidates. In terms of the maturity structure of international capital flows, short-term debt flows rose during the lending boom of the early 1990s, and fell thereafter. Among emerging markets, Asia had an exceptionally high exposure to short-term foreign debt before the 1987 meltdown, while the exposure of the transition economies covered here has been below average.

2.2. Volatility of International Capital Flows

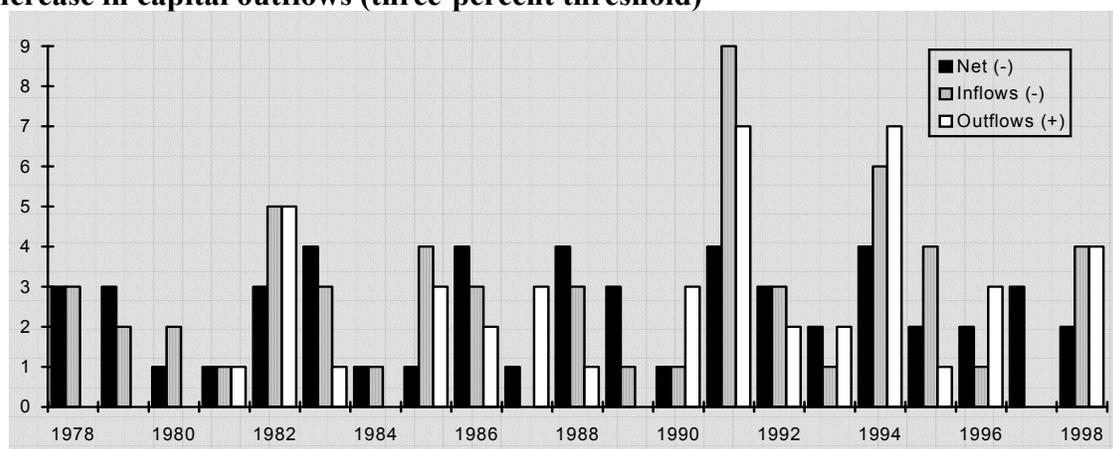
Recent financial crises have shifted interest away from measures of the degree of capital mobility towards measures of the volatility characteristics of different capital account items. This shift has been prompted by the observation that capital flows to emerging markets often tend to be relatively volatile and that this may hold in particular for short-term capital flows. Since, as the previous section has shown, developing and developed countries differ with regard to the structure of capital flows, the key issue is thus to what extent these differences have an impact on the volatility of capital flows.

In contrast to the extensive policy debate on the volatility of capital flows, sound empirical evidence on volatility patterns is rather scarce. Claessens, Dooley, and Warner (1993) have been among the first to draw attention to the fact that standard balance of payments labels provide relatively little information on the actual volatility of capital flows. One result of the analysis is that there is no consistent pattern of persistence across different capital flows.

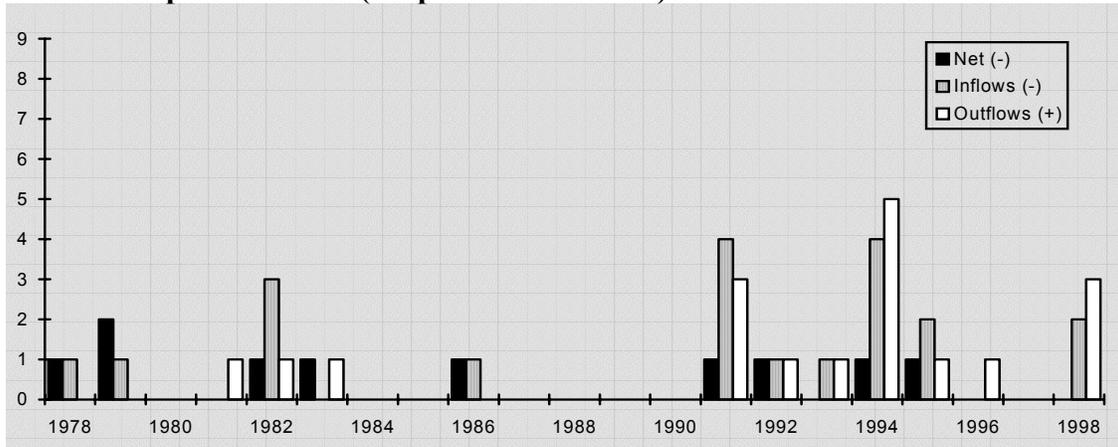
Figure 2

Number of OECD Countries Experiencing Large Capital In- and Outflows 1978-1998

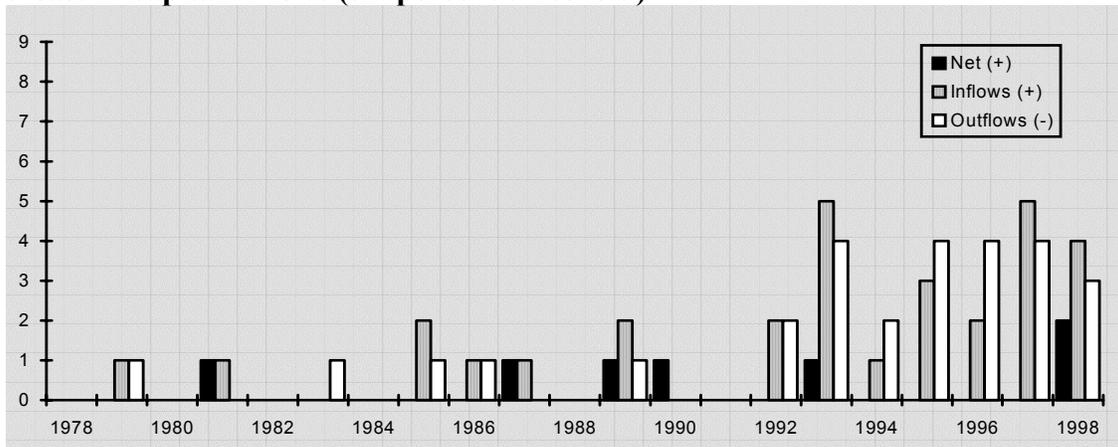
a) Increase in capital outflows (three-percent threshold)



b) Increase in capital outflows (six-percent threshold)



c) Increase in capital inflows (six-percent threshold)



Source: IMF (2000), own calculations.

Also, short-term capital flows tend to be at least as predictable as other capital flows. The results also show that there is substantial substitution between different types of capital flows. Sarno and Taylor (1999) analyze differences in the magnitude of the permanent and transitory components of capital flows. Their results suggest that both private portfolio investments (comprising equity and debt flows) and official flows are driven by a very strong temporary, short-term component. Cross-border commercial bank credits and particularly foreign direct investment flows by contrast have a strong permanent component.

In contrast to these papers, the focus of Chuhan et al. (1996) has been on the interplay among capital flows. Their results indicate that (changes in) FDI might account for a substantial fraction of the subsequent variation of short-term investment. Also, short-term investment flows tend to be more sensitive to changes affecting short-term investment flows to other countries whereas, in the majority of cases, similar conclusions cannot be drawn when FDI flows are considered. Thus, disturbances hitting international financial markets might spill over more easily onto short-term inflows than onto foreign direct investment inflows.

Further evidence on the volatility of capital flows has been documented in Mussa et al. (1999). Using gross private capital flows to emerging markets, they find that the variance of capital flows has been higher in the second half of the 1990s than in earlier periods. However, no such general pattern is found when net capital flows are used. When breaking down total capital flows into their components, FDI turns out to be the most stable, followed by portfolio capital, and bank credits.

In order to assess the welfare implications of financial market integration, it is not only of interest to what extent capital flows fluctuate around a long-term trend, it is also of interest how frequent large capital flow reversals are. If fluctuations of (net) capital flows cancel out quickly, implications for the real sector might be modest. If, however, capital flows swing for a prolonged period, policy adjustment might be necessary but may not be forthcoming as quickly as needed.

Mussa et al. (1999) define a reversal of capital flows as a reduction in net capital inflows by more than 3 or 6 percent of GDP. Looking at data for 17 emerging markets, which accounted for 75 percent of capital flows to emerging markets for the 1970s through 1990s, they find that large reversals have become more frequent in the 1990s.

Graph 2 reproduces the results of Mussa et al. (1999) for OECD countries. We plot both reversals of net and gross flows, using a three- and a six-percent threshold level (relative to GDP). When using the three-percent threshold, reversals of net capital flows have appeared relatively frequently. As regards gross capital flows, relatively more large reversals have been observed in two periods, in the early 1980s and the early 1990s. These are also the two periods which have seen very large reversals of capital flows, exceeding the six-percent threshold. Moreover, the number of countries affected by large capital reversals seems to have increased in the 1990s

relative to the 1980s, at least when gross flows are considered. This largely supports the evidence from developing countries.

In addition, there is some evidence for increased large *inflows* of foreign capital into developed countries in the late 1990s. While emerging markets have witnessed quite substantial outflows of foreign capital in the later half of the decade, the reverse holds true for OECD countries, which have witnessed quite substantial increases in capital inflows during this time. In this sense, developments in the OECD-area mirror-image developments in emerging markets, reflecting a re-allocation of international capital flows.

3. RISKS AND BENEFITS OF FREE CAPITAL FLOWS

The previous section has argued that developments on international capital markets are governed by five major tendencies. The degree of international capital mobility has increased continuously over the past decades, but has not necessarily reached an all-time high. As regards the structure of capital flows, we observe a general tendency towards securitization. Moreover, the share of short-term bank credit has grown in the 1990s, but it remains unclear whether this trend will continue in the future. Marked differences exist in the structure of capital inflows of countries of different levels of economic development. Foreign direct investment and cross-border bank credits are more important in developing than in industrialized countries. Finally, care should be taken when classifying capital flows according to their volatility. It is necessary in particular to control for feedback effects between different types of capital flows in order to arrive at an accurate measure of volatility.

The following section discusses the welfare effects of growing international capital flows. We will discuss both aggregate effects, i.e. the link between capital flows on the one hand and investment and growth on the other hand, and effects on the efficiency of the domestic financial industry. We conclude by discussing the causes and consequences of currency crises.

3.1. Benefits: Growth, Consumption Smoothing and Portfolio Diversification

Basically, there are a number of positive effects that can be expected of free international capital flows. Free international capital markets can contribute to allocating capital to its most productive uses across national boundaries. They enable countries to smooth over cyclical fluctuations in GDP through capital imports and exports, thereby preventing these fluctuations from fully feeding through to domestic consumption and investment. Moreover, free international capital movements facilitate international portfolio diversification and can thus insulate investment returns from domestic fluctuations. International capital movements can also play an important role in the transfer of new technologies, something that is of particular relevance for developing countries. And finally, international capital flows can contribute to creating more efficient domestic financial systems and can in this way contribute to faster economic growth.

However, there is no guarantee that these potential advantages of international capital movements will materialize. Whether the full benefits of capital market integration will be reaped depends on a number of factors. There is good reason to think that developing and industrialized countries differ in the effects of different types of capital flows and the channels through which these effects play out. Even across developing countries, the effects and channels of impact may differ. For instance, growth effects will depend on whether foreign capital inflows substitute or complement domestic savings. Moreover, developing countries may fail to reap the full benefits of integration because of a lack of human capital endowment. Similarly, restrictive foreign trade regimes can create distortions which prevent capital flows from benefiting the host country. In what follows we discuss these issues in more detail.

With free international capital movements, it is possible to channel investments into those countries and sectors where the productivity of capital is highest, irrespective of national savings rates and income levels. Efficient investment projects which might go unrealized for lack of national savings can be financed through capital imports. Conversely, domestic savings can be exported if there are not enough worthwhile investment projects available in the domestic economy.

However, the effects of capital imports on economic growth depend critically on whether domestic savings are supplemented or replaced by capital imports, and whether capital imports lead to additional investment in the receiving country (Edwards 1998). To be sure, welfare rises even if capital imports are used exclusively to finance additional consumption. But consuming current capital imports runs the risk of future insolvency, especially if the capital imports are in the form of international debt. Obstfeld (1995) finds for developing economies that capital imports in practice partially crowd out domestic savings, but still lead to higher domestic investment on a net basis.

The Asian tiger economies by contrast had sizeable capital imports and exceptionally high domestic savings rates simultaneously for an extended period of time. The conjecture was that in

these economies, capital imports and domestic savings supplemented each other (Turner 1995). More recently however, Reinhart and Talvi (1998) have shown that even in these economies foreign capital inflows have been correlated negatively with domestic savings when corrected for the long-term autonomous trend in domestic savings.

Not all types of capital inflows are alike, though (Bosworth und Collins 1999). Foreign direct investment not only has by far the strongest positive impact on domestic investment, it also leads to additional domestic savings. By contrast, portfolio inflows at best have a small impact on both domestic investment and savings. Foreign bank credit is in between these two extremes. On average, half of overall gross capital imports are being used to finance additional investment. The other half goes to the build-up of foreign currency reserves and to capital exports of the receiving country.

In addition to the effects on domestic savings and investment, the impact of foreign capital inflows crucially depends on the human capital endowment of the receiving country. This influences both how attractive a country is for foreign capital and how much the country is able to benefit from foreign capital. Without considering human capital, it is difficult to explain the direction of international capital flows. Traditional growth accounting, according to which the marginal product of capital should be lower in developed than in developing economies due to the larger capital stocks of the former, would imply that capital should flow mainly from rich to poor economies. However, this is not the case in reality. The bulk of international capital flows occurs between developed economies (cf. Table 2a above). This seeming contradiction can be resolved by allowing for complementarities between physical and human capital, such that the marginal product of capital is higher in countries with larger human capital endowments (Lucas 1990).

The human capital endowment of the host country is particularly important when it comes to using foreign capital inflows as a way to absorb new technologies. The new growth theory has shown that technological innovation can initiate and sustain long-term economic growth (Romer 1990, Grossman und Helpman 1991). Foreign direct investment in particular can play a pivotal role in this process. It can directly go hand in hand with imports of new technology. But in addition, it can contribute to transferring new management techniques and new ways of organizing production efficiently. These effects can be expected to be particularly pronounced if the new knowledge spills over from foreign subsidiaries to domestic firms, be it through subcontractor and supplier relationships, be it through copycat competition (Bertschek 1995). This can further stimulate domestic investment.

On an empirical level, it has turned out to be difficult to establish a clear link between foreign direct investment and economic growth (Nunnenkamp 2000). Recent research by UNCTAD (1999) fails to find a positive impact of foreign direct investment on growth. Soto (1999) finds a positive impact only when assuming a non-linear relationship between foreign direct investment and domestic savings. Worse, the estimation coefficients lack robustness. These findings underscore the importance of human capital in enabling the host economy to absorb new knowledge

and technologies. Foreign direct investment has been found to have a strongly positive impact on economic growth only in countries with a sufficiently high level of human capital endowment (Borensztein et al. 1994). In these countries, foreign direct investment has also been more productive than investment by domestic firms.

Apart from human capital endowment, the trade regime also plays a critical role for the growth effects of foreign direct investment. In contrast to export-oriented countries, hardly any positive growth effects could be found for countries following import substitution strategies (Balasubramanyam et al. 1996).

The integration of international capital markets can improve aggregate welfare not just by enabling countries to tap foreign savings to finance domestic investment. International capital mobility also allows investors to optimally diversify their portfolios.⁶ Portfolio theory in fact holds important implications in particular for capital flows between developing and developed economies. The potential for risk diversification is particularly high given that asset returns are typically weakly or even negatively correlated across these two groups of countries. Reisen (1996) argues that international portfolio diversification can lead to substantial welfare gains for both groups of countries: developed economies can partially solve their problems with providing for their ageing populations, developing economies can grow faster.

It has to be said, however, that so far investors have taken advantage of the opportunity for international portfolio diversification only to a very limited extent. Empirically, investors have preferred to keep the vast bulk of their savings in home country assets.⁷ The reasons for this home bias are still not very well understood. Possible explanations range from tax incentives to asymmetric information to frictions in the international integration of markets for goods.⁸

Finally, an important channel through which the integration of capital markets may generate positive welfare effects are improvements in the efficiency of the domestic financial system. Both theoretical arguments and empirical results suggest that the development of the financial system is closely linked to economic development and growth (Levine 1997). The new growth theory has identified two main channels of permanent economic growth: capital accumulation and increasing returns to scale (Romer 1986, Lucas 1988) as well as the development of new products and production processes (Romer 1990, Grossman and Helpman 1991). The financial system contributes to lower information and transaction costs. It promotes the amount of risk sharing among agents, allocates capital, mobilizes savings, and provides liquidity for the trading in goods and services. If it fulfills these roles efficiently, it thus promotes economic growth.

⁶ See also Feldstein (2000).

⁷ See French and Poterba (1990, 1991) or Tesar and Werner (1992).

⁸ See Lewis (1999) or Obstfeld and Rogoff (1996).

International capital mobility can play a crucial role in this. It can help to lower risks, it can facilitate the transfer of innovations across boundaries, and it can contribute to the development of an efficient domestic financial industry in three ways. First, international capital mobility gives enterprises access to the world capital market and allows them to overcome the drawbacks of an underdeveloped domestic financial system (Klein und Olivei 1999). Second, international capital mobility can increase the liquidity of the capital markets of small economies. The liquidity of domestic capital markets has been found to be an important determinant of economic growth (Levine und Zavis 1998). Third, international capital mobility can increase competitive pressure and can thereby encourage efficiency-enhancing reforms in the domestic financial sector. Inter alia, it can be shown how opening up market access for foreign banks can lower domestic financing costs and can thereby contribute to more investment into human capital, research and development, and eventually to higher growth (Baldwin und Forslid 1996).

Accordingly, Klein und Olivei (1999) empirically find a significantly positive relationship between free capital flows and financial development on the one hand, and between financial development and economic growth on the other hand. However, it appears that the link between free capital flows and financial development holds mostly for OECD countries. This would suggest that developed and developing economies differ at least in the channels through which international capital flows affect domestic economies. This result ties in with the result of Section 2.1 that developed and developing economies differ in the structure of the capital flows they attract. Conceivably, portfolio investments and bank credits, which dominate capital flows between developed economies, contribute more to financial development than foreign direct investment, which is more important for developing countries. Alternatively, the greater weight of portfolio investments in the capital inflows of developed economies may be a result rather than a cause of the higher level of development of their financial systems.

3.2. Risks: Balance of Payments Crises and Contagion Effects

The experience of recent years has reinforced the point that the liberalization of international capital movements can not just bring benefits, but also carries the risk of balance of payments crises with their attendant adverse consequences for economic growth. Of particular concern is the risk of countries pursuing sound domestic policies and yet being drawn into crises erupting elsewhere. In this section, we therefore discuss the factors that may cause balance of payments crises and the potential for contagion effects across countries.

Balance of payments crises can have a variety of causes. They can be caused by inconsistencies in domestic economic policies, most notably between exchange rate, monetary and fiscal policies (Krugman 1979, Flood and Garber 1984). A typical example would be attempts to fix the nominal exchange rate while at the same time monetizing fiscal deficits. As the domestic component of the monetary base grows over time, the exchange rate peg can be maintained only by running down international reserves. Eventually, the markets lose confidence in the peg, a speculative at-

tack occurs, already low international reserves are depleted completely, and the peg has to be abandoned. Apart from inconsistencies in macroeconomic policies, inconsistencies on the microeconomic level can cause problems as well. In particular, balance of payments crises often erupt more or less simultaneously with crises in the domestic banking sector (Kaminsky und Reinhart 1996, 1999). More on this will be said in Section 4 below.

However, balance of payments crises can occur even if domestic economic policy avoids these and other inconsistencies (Obstfeld 1986). In this case, market expectations are pivotal. In principle, it is always possible to defend a fixed exchange rate against speculative attacks by raising interest rates to punitive levels and thereby reducing the supply of domestic currency. But in the event of a massive speculative attack, the extreme monetary contraction necessary to defend the peg may involve excessive short-term losses of output and employment. The political pressure to abandon the peg may then become unbearable. The devaluation expectations which precipitated the attack then turn out to have been self-fulfilling. At the same time, it is possible that the exchange rate peg could have been sustained indefinitely if no speculative attack had occurred. I.e. if the market's expectations were for the peg to be sustained, then this expectation would turn out to be self-fulfilling as well. At times, seemingly minor events can coordinate market expectations one way or the other and can thus trigger successful speculative attacks.

Self-fulfilling attacks on countries with otherwise sound policies notwithstanding, the recent empirical literature on balance of payments crises has identified a number of indicators which yield good ex-post forecasts of past crises (Kaminsky und Reinhart 1998, Kaminsky et al. 1998). Dwindling export revenues, rising current account deficits, deviations of the real exchange rate from its long-term trend, high and rising foreign borrowing, especially by the public sector, high and rising domestic inflation, and declining international reserves have been found to be useful indicators to watch. Indications of possible danger ahead could be found as long as two years prior to the actual eruption of the crisis.

The developments captured by these indicators can obviously be influenced by domestic economic policy. This is why these results suggest that as a rule domestic policy makers are not powerless when it comes to preventing balance of payments crises or at least cushioning their impact. Inter alia, the Asian meltdown of 1997 did not actually hit out of a blue sky; as early as 18 months before the crisis, clear signs of trouble could have been detected, especially in domestic financial systems (Kaminsky und Reinhart 1999).

However, despite the important role domestic economic policy can play in making integration into international capital markets successful, the potential for contagion across national boundaries does exist. Contagion effects can arise for instance if international investors restructure their entire portfolios in response to changed expectations for one country (Schinasi und Smith 1999). Balance of payments crises can create liquidity needs in international investors and can prompt them to liquidate positions in countries originally not affected by the crisis. This can cause a sudden reversal particularly of short-term capital flows (Montiel und Reinhart 1997) and can push a

country and its financial sector into a liquidity crisis (Goldfajn und Valdez 1995). A similar effect can arise if international markets lack sufficient information on differences in the economic situation of different countries. Investors may then respond to a crisis in one country by indiscriminately withdrawing their capital also from other, seemingly similar countries.

There has been an intense debate in the literature on the appropriate definition of contagion effects. Some authors associate the concept of contagion merely with the simultaneous emergence of financial crises. Others distinguish between spill-overs which are unrelated to fundamentals and those which reflect fundamental characteristics of an economy (Schinasi and Smith 1999). Obviously, the appropriate definition of fundamentals becomes an issue when following this definition.

Rigobon and Forbes (1999) have additionally pointed out that it might be useful to distinguish between propagation and contagion. Propagation denotes normal market linkages through, for instance, high correlations of returns, while contagion implies a change in the pattern of return correlations during a crisis. According to this fairly strict definition, contagion is thus a significant *increase* in cross-market linkages after a shock has occurred in one country.

Obviously, the policy implications of these different definitions differ vastly. If observed co-movements of markets during crises simply reflect normal co-movements, policy action might be counterproductive because it might disrupt normal market linkages which raise overall economic welfare. If, in contrast, contagion is a synonym for crisis *and* if crises have long-run negative effects both short-term and long-term policy measures may be needed. For all practical purposes, it will be extremely difficult to decide whether or not spill-overs of crises elsewhere which affect the domestic economy should be taken as a mere by-product of economic integration and might thus be tolerated. Essentially, economic policy must then weigh the risks against the benefits of integration.

Forbes and Rigobon (1999) also show that the measurement of correlation coefficients must take into account that these estimates are biased during crisis periods. During crisis periods, measured correlations are biased upward, and without correction for this bias, an increase in correlations would be diagnosed too frequently. Forbes and Rigobon thus propose to adjust the correlation coefficient according to the following formula: $\rho_t = \frac{\rho_t^c}{\sqrt{1 + \delta_t [1 - (\rho_t^c)^2]}}$ where ρ_t^c is

the unconditional, unadjusted correlation coefficient and δ_t is the relative increase in the variance of returns in the crisis country. Using this method, Forbes and Rigobon (2000) find no significant increase in return correlations during recent financial crises in Latin America. Linne (1999) uses the same methodology and distinguishes between positive contagion (an increase in return correlations) and negative contagion (declining correlations). Evidence for positive and negative contagion differs between crisis episodes. While the Czech crisis of 1997 had little positive contagion effects and some negative effects, mainly in Eastern Europe, the Asian financial crisis

of the summer of 1997 had relatively strong and positive global contagion but hardly any negative contagion effects. The Russian crisis of August 1998 showed no features of negative contagion but some positive contagion effects in Eastern Europe and Latin America. Applying the same method to longer-term time series, Bordo and Murshid (2000) reach similar conclusions and argue that there is little evidence that recent financial crises have been more contagious than earlier ones.

4. THE ROLE OF BANKS IN FINANCIAL INTEGRATION

So far, our analysis has not dealt with the special role of banks in linking national financial markets. Yet, stylized facts suggest not only that banks remain a major channel for capital flows in particular for emerging markets but also that the stability and the efficiency of the domestic banking system is a crucial factor in the emergence and severity of financial crises. Hence, in this section, we will go into more detail with regard to the potential effects that opening up for foreign banks can have for the efficiency and the stability of domestic banking systems, and we will discuss the role of domestic banks during balance of payments crises.

4.1. Opening up for Foreign Banks

With regard to the optimal sequence of financial liberalization, it has often been argued that the capital account of the balance of payments should be liberalized only after the domestic financial system has been deregulated, and that the opening of markets for foreign competition in financial services should proceed only gradually (Cho and Khatkhate 1989, Gelb and Sagari 1990, Mathieson 1980, Reisen and Fischer 1993). However, this argument ignores that liberalizing the capital account quickly and in particular allowing entry of foreign financial institutions can be an efficient way to remove distortions in domestic financial markets. Hence, a reversed sequence or at least parallel reform sequence might be considered as well.⁹

When deriving policy implications for transition economies from this literature, it needs to be borne in mind that in these countries internal financial liberalization has been a much more encompassing task than in most other emerging markets. This is because in transition economies internal financial liberalization has implied the creation of a market-based financial system from its infancies: the monobank had to be abolished and to be replaced by a two-tier banking system. As new commercial banks were typically carved out of the existing monobank structures, thereby inheriting the existing loan portfolios, the issue of how to deal with the non-performing loans on their balance sheets had to be solved. In addition, internal financial liberalization required the lift-

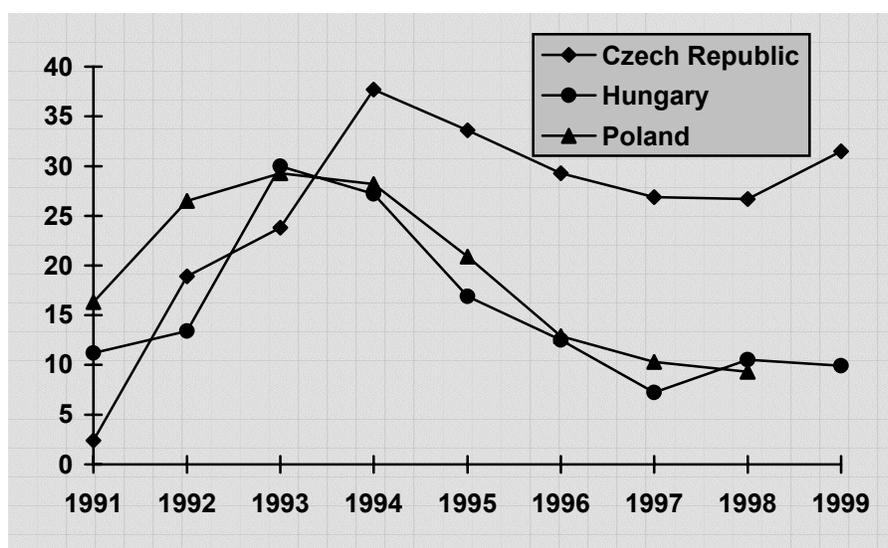
⁹ An early proponent of this view has been Lal (1987).

ing of administrative controls on the activities of commercial banks, i.e., the abolition of interest rate and credit controls as well as the termination of subsidized lending programs.

In a simple, static framework, the case against unrestricted market access for foreign banks can be made by noting that domestic banks in transition economies which struggle with a vast array of operational inefficiencies and with low-quality assets are unable to compete on equal terms with foreign rivals. The incumbent domestic banks have inherited loans from the former regime of central planning, and they typically lack both experienced personnel and reliable sources of information on enterprise performance needed to perform a reliable credit assessment. Substantial amounts of new non-performing loans on the balance sheets of commercial banks have typically been the result. While cross-country comparisons of the scale of non-performing loans are complicated by different accounting standards, loan write-off regulations, or provisioning requirements, irregular assets have been substantial for quite some time into the reform process (Graph 3). In 1995, Hungarian and Polish commercial banks still reported about 15-20 percent of their loans as being classified. Meanwhile, these shares have gone down to 10 percent or less. In the Czech Republic, in contrast, about one third of the banks' loan portfolios remain in a critical state.

Figure 3

Share of Classified Credits in Percent of Total Credits 1991–1999



Source: Buch (2001)

In the presence of non-performing assets, banks are in the need to earn sufficiently high interest rate spreads on the profitable part of their operations in order to offset past losses and to maintain their operations (Buch 1997). High spreads, however, cannot be sustained if market access is liberalized: As the number of competitors rises, the equilibrium loan rate converges to the bank's

marginal costs. This mechanism is the main rationale behind suggestions to postpone external financial liberalization until internal financial liberalization has taken place, and until domestic banks have recapitalized themselves through retained profits. The main concern about the market entry of *foreign* banks stems from the fact that they not only have a balance sheet which is free of non-performing loans but that they also tend to have lower operating costs than domestic banks. Hence, their presence in the market may be even more detrimental to the incumbent banks than the emergence of new *domestic* financial institutions.

The market entry of foreign banks thus potentially forces existing banks out of the market, and it may hinder the market entry of new domestic banks. Bankruptcies of incumbent banks, in turn, have negative implications not only because (uninsured) depositors would lose their savings but also because banking failures might have spill-over effects on other banks, and because information capital might be destroyed. Finally, the fact that market entry as such puts downward pressure on interest rate spreads may reduce the monitoring incentives of commercial banks, thus potentially increasing the riskiness of banks' assets (Aizenman 1998, Gehrig 1998). Hence, a government which assigns a high weight to domestic banks' profits would decide to postpone external financial liberalization until the efficiency of domestic banking has improved sufficiently.

Another argument which is often voiced against the market entry of foreign banks is the fear that foreign banks pick only the "best" clients, leaving the domestic banking sector with a pool of low-return, high-risk enterprises. A related concern is that foreign banks refrain from lending to domestic firms. Yet, these arguments do not justify to shield transition economies from competition in financial services for two reasons.

First, *ex ante* and *ex post* knowledge about the quality of loan customers must be distinguished. *Ex ante* asymmetries in information are one main rationale for the existence of financial intermediaries in general and of banks in particular. Because the quality of prospective borrowers can typically not be assessed with certainty prior to the writing of a loan contract, screening and sorting mechanisms need to be designed which help to overcome informational asymmetries. The fact that foreign banks tend to operate with clients which *ex post* are revealed to have an above average profitability might simply imply that these banks have developed better risk assessment techniques than the domestic banks. These abilities cannot be utilized if markets are protected.

Second, even if a theoretical case can be made for welfare costs of opening up the domestic banking industry, the potential benefits of such a policy must be taken into account as well. Generally, the case for international trade in financial services can be made in an analogy to international trade in goods. Free trade in financial services allows countries to exploit these comparative advantages.

Apart from the utilization of comparative advantages in producing financial services, FDI in banking can contribute to a transfer of know-how into the domestic banking system and to improving its efficiency. Hence, substantial gains from higher quality intermediation can be realized. In addition, foreign banks can improve the corporate governance of domestic banks if they acquire stakes in the privatized banks. Incidentally, this has been the main rationale behind the decisions of the authorities in most reform countries to closely involve foreign banks into the process of bank privatization (Buch 2001).

Moreover, because one main reason for the existence of banks is their ability to process information more efficiently than other market participants, experience, prior customer relations, and human resource endowments are driving forces behind the international expansion of banks. The importance of existing customer relations implies that trade in goods and FDI in banking may be complements. The direction of causality is not clear, however. While banks may merely be following their customers into foreign countries, they may as well be present in foreign markets prior to their corporate clients and provide information about the new market. Hence, liberalizing the market access of foreign banks might have a positive welfare effect also through this channel.

From a theoretical point of view, market entry of foreign banks can thus have positive and negative implications for the efficiency and profitability of the domestic banking system. On the one hand, potentially more efficient banks enter the market and allow for a transfer of skills and technology. Domestic banks, on the other hand, may go bankrupt because of inferior cost and incentive structures. This may have negative welfare consequences. Which of these two effects dominates is ultimately an empirical issue.

The empirical literature on the foreign activities of commercial banks by and large shows that the benefits of foreign entry outweigh the potential costs. The following stylized facts are borne out by the majority of studies on foreign banking:

First, a vast amount of empirical evidence suggests that foreign banks merely follow their clients abroad (see Buch (2000) for a survey). Therefore, their foreign activities are highly complementary to their business at home, and the same type of business may not be available to host-country banks. Foreign banks make use of the specific customer relationship that they have build up which cannot easily be replicated by a domestic bank. The relevant alternative to the presence of foreign banks abroad may thus be that they service their customers through the foreign bank's home country headquarters.

Second, in developing countries, foreign banks tend to be more profitable than domestic banks (Claessens, Demirgüç-Kunt and Huizinga 1998).¹⁰ While domestic banks indeed lost market

¹⁰ This is not usually the case for developed market economies where the profitability of foreign banks tends to be below average (Berger et al. 2001).

shares and became less profitable as foreign banks entered, the overall welfare effect on the domestic economy is positive. In addition, it seems to be the number of foreign entrants rather than their market shares which has the greatest impact on welfare because of the positive effects for competition. Recent evidence for Argentina and Mexico additionally suggests increased stability of local banking markets precipitated by foreign entry (Goldberg et al. 1999). In these countries, foreign entry had a positive impact on loan growth, coupled with a reduction in the volatility of loan growth.

Third, foreign banks usually maintain only a small presence in the retail segment of the host country banking industry. Mainly, they provide trade-related services such as foreign exchange and payments services, or the settlement of securities. It has been only very recently that foreign banks have expanded also in the retail banking segments of the host market. The privatization of domestic banks has in many cases been a key trigger for foreign entry into retail banking. Evidence supporting this view is documented for the case of Spanish banks in Latin America (Guillen and Tschoegl 1999) and for the expansion of foreign banks into Hungary (Bonin and Abel 2000). Hence, greenfield investments and mergers and acquisitions are not perfect substitutes. This suggests that foreign entrants often prefer to work with existing domestic banks rather than competing with them.

Positive effects of foreign entry in banking have also been documented for transition economies. For the Czech Republic, Hungary, and Poland, Buch (2001) finds that initially, there has indeed been a fear that domestic banks would be unable to withstand competitive pressure of foreign banks, and hence that foreign entry would cause the failure of domestic financial institutions. But while there have certainly been liquidations of domestic banks, these have had a relatively modest scope and were typically restricted to small and mid-sized banks. Overall, the entry of foreign banks has thus not caused large-scale banking failure.

Quite to the contrary, it seems that the performance of the banking sector has been superior in those countries which have taken a relatively liberal approach towards foreign banks.¹¹ This would confirm earlier studies on the impact of foreign bank entry on bank profitability. Evidence from the Czech Republic, Hungary and Poland also shows clearly that foreign banks find it more difficult to obtain market shares in the deposit as compared to the lending business. At the same time, market shares in retail banking are very high in some countries, notably in Hungary, suggesting that foreign banks not only take a follow-their-customer strategy but rather engage actively in retail banking.

While the above discussion suggests that the benefits of market entry of foreign banks in emerging markets probably outweigh potential risks, the role of foreign banks in balance of payments crises must be considered as well. Van Rijckeghem and Weder (2000) find, for instance, that so-called 'common lender' effects have promoted spill-over effects during the Thai

¹¹ See in the Graph A2 (page 46) appendix for the market shares of foreign banks in selected transition economies.

and Mexican financial crises. Hence, when analyzing the welfare implications of foreign entry, these potential costs must be considered as well. In the following section, we focus on a possible link between the international activities of commercial banks and the emergence of financial crises, namely the exposure of banks to foreign exchange risks.

4.2. Twin Crises

Banks in the transition economies have emerged as important channels of foreign capital either directly by borrowing abroad or indirectly by guaranteeing loans (Graph 4). In particular during the second half of the 1980s and the first half of the 1990s, the share of lending to banks in total loans granted by the BIS reporting banks has clearly been above the average for developed market economies, in particular for the second round candidates to EU accession. Since then, and especially in the aftermath of the financial crises of the late 1990s, it has fallen substantially, and for all reform countries has recently been below the developed-country average. This may in fact indicate that the potential vulnerability of the banking systems to financial crises has become a greater concern for international lenders.

A domestic banking crisis can trigger a balance of payments crisis for instance if the fiscal costs of rescuing the domestic banking sector create macroeconomic imbalances (Calvo 1995, Velasco 1987). In addition, a balance of payments crisis can also erupt when, as a result of a domestic banking crises, domestic banks lose their international creditworthiness, so that bank-intermediated capital inflows dry up. Feedback effects can reinforce this effect if domestic banks hold open foreign exchange positions (Buch and Heinrich 1999) because devaluations or devaluation expectations drive up interest rates. This can cause additional losses in the banking sector (Mishkin 1997). The danger is particularly pronounced for countries suffering from weak financial regulation and supervision (McKinnon und Pill 1995).

Figure 4

Share of Lending to Banks 1985–2000

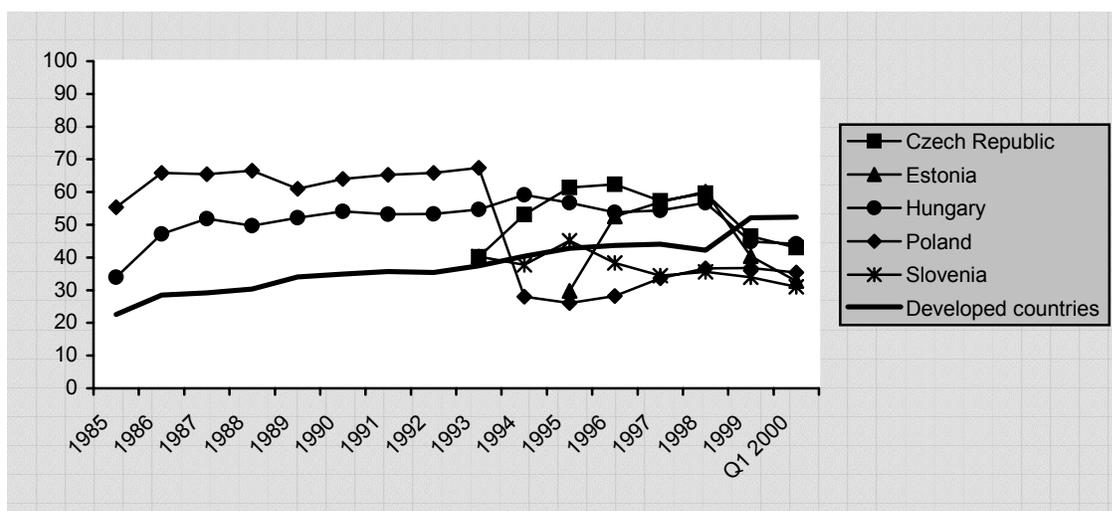
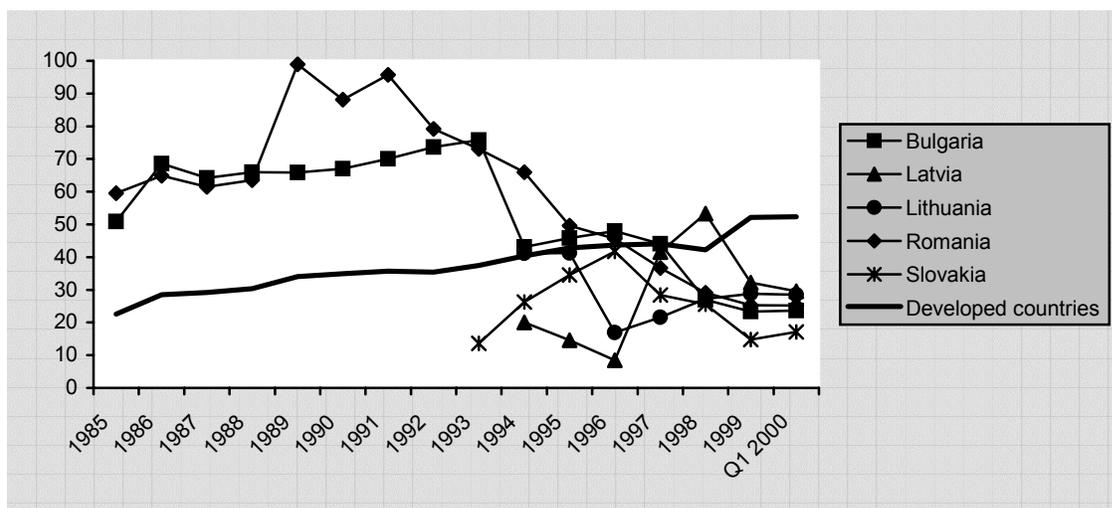


Figure 4 cont'd



Source: BIS (2000, Table 7)

For transition economies in particular, a high exposure of the commercial banking system to nonperforming assets can be one trigger for twin crises. In some countries, substantial advances have been made with regard to the solution of the problem of nonperforming loans on the balance sheets of banks (cf. Graph 3 above). However, the track record is less promising for some of the late reformers.

The prominent role of commercial banks as channels of foreign capital highlights the importance of safeguards against excessive foreign borrowing of banks. Still, results presented in Buch and Heinrich (1999) suggest caution against the use of reserve requirements or of other restrictions to the open foreign exchange position of banks solely as a means to protect the balance of payments. These restrictions, which raise the costs of foreign loans relative to

domestic deposits, may have the unintended effect of speeding up rather than delaying balance of payments problems. In fact, the reduction in capital inflows due to the capital controls may be a reason why countries such as Chile, Croatia, or Slovenia have abolished their controls in the wake of the recent decline in capital flows to emerging markets.

At the same time, the results derived in Buch and Heinrich (1999) stress the need to impose regulations on banks' activities which are motivated by prudential considerations and which do not distort the relative prices of banks' liabilities. Also, effective ways to reform the deposit insurance system and to put it on an explicit basis must be found. A regulatory framework which takes foreign exchange risks into account is already given by the core principles for effective banking supervision of the Bank for International Settlements and need not be designed anew for the reform countries. Likewise, the regulations of the EU concerning capital adequacy address foreign exchange risks. In implementing these guidelines, it is particularly important to utilize a comprehensive definition of market risk and to take off-balance sheet activities into account. The transition economies should consider in addition that the general guidelines have mainly been drafted with an eye on banks from developed market economies. Hence it may be necessary to impose tighter standards during the period of transition.

5. TAXES ON SHORT-TERM CAPITAL FLOWS AS A SOLUTION?

If short-term capital flows are more volatile than other forms of capital inflows, wouldn't it make sense to lower the share of short-term capital flows by imposing a tax on these types of capital flows? In this section, we briefly discuss the pros and cons of such policies and the determinants of short-term capital flows.

5.1. Determinants of Short-Term Capital Flows

Despite the increased interest in the determinants of short-term capital flows, empirical evidence on these factors is relatively scarce. An exception is the work by Rodrik and Velasco (1999). They find for a panel of 32 developing countries that the share of short-term debt is positively related to the ratio of M2 over GDP and to per-capita income. Foreign trade activities, measured as the ratio of imports over GDP, in contrast, do not have a significant impact on the maturity structure of foreign debt. These results are obtained when estimating the model either for a cross-section of countries for the year 1995 or in form of a panel with fixed effects for the years 1988-1997.

Buch and Lusinyan (2000) extend this analysis to analyze the determinants of short-term bank loans for about 55 recipient countries. Using a substantially larger dataset than earlier work by Rodrik and Velasco (1999), they confirm their basic result with the share of short-term loans being a positive function of GDP per capita and the size of the financial system of the host country.

Generally, the results suggest that determinants of short-term bank loans are similar for developed and developing countries. At the same time, regulatory restrictions were found to have an impact on the maturity structure of foreign bank lending. OECD membership in particular has a positive impact on the share of short-term foreign loans. Presumably, this is due to the risk-weighting implied in the BIS capital adequacy standards which requires banks to hold more capital against short-term lending to non-OECD countries than against lending to OECD countries or against long-term loans. Since the dataset used by Buch and Lusinyan (2000) also includes some transition economies, we can use their results to obtain an estimate of the deviation of these countries from the expected share of short-term capital. That is we are plotting the residuals of the equations estimated in Buch and Lusinyan for these countries. Graph 5 shows the results, making use of different specifications of the baseline model.

Figure 5
Short-Term Debt in Transition Economies: A Residual Analysis

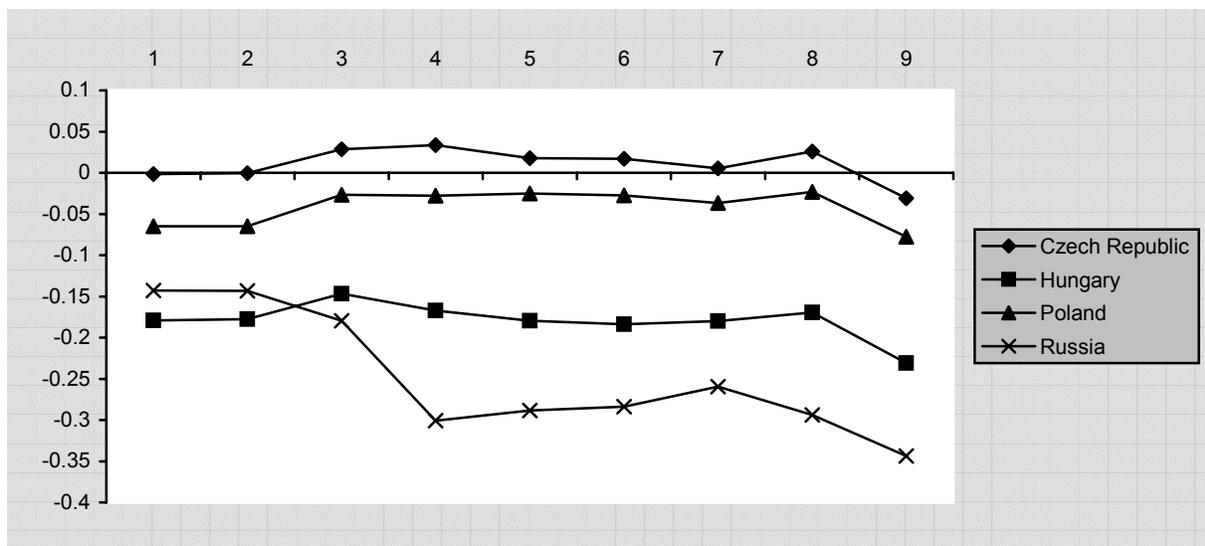
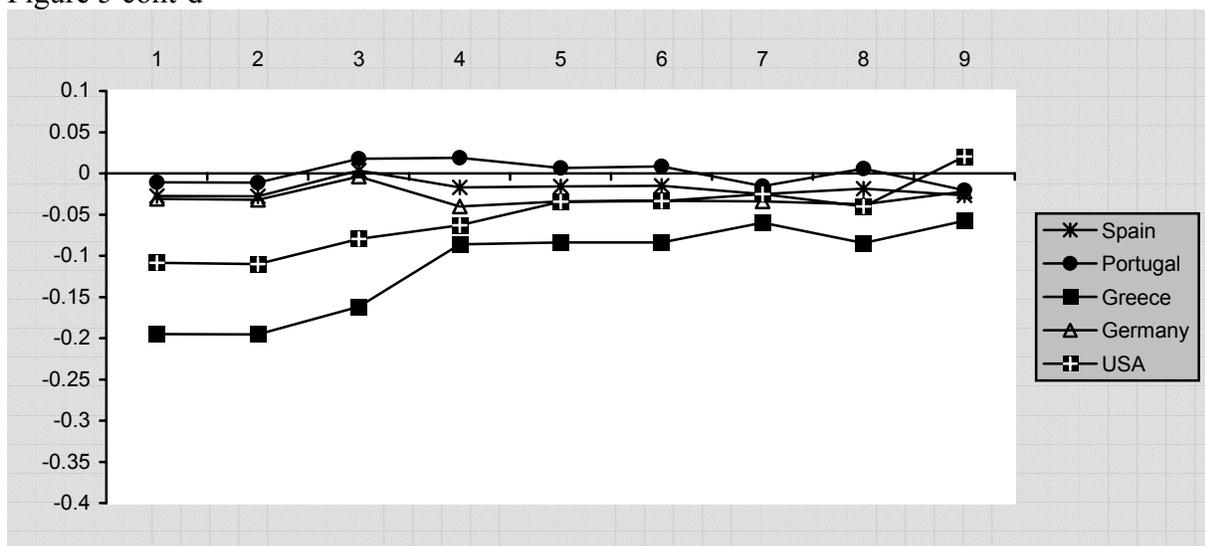


Figure 5 cont'd



Graph plots the residuals from a regression estimating the determinants of short-term debt. Negative values imply that the share of short-term debt is below the sample average. Model specification: (1) = baseline: log GDP per capita and M2/GDP, (2) baseline plus imports/GDP, (3) baseline plus OECD dummy and interaction terms, (4) baseline plus OECD, EU, financial centre dummies, share of loans to banks, (5) baseline plus OECD dummy, share of loans to banks, (6) baseline plus OECD dummy, share of loans to banks, Asia dummy, (7) baseline plus OECD dummy, share of loans to banks, rating, (8) baseline plus intercept. See Buch and Lusinyan (2000) for details.

In all specifications, most transition economies in the sample show a bias against short-term debt when controlling for the determinants of short-term debt identified in Buch and Lusinyan (2000). The only exception is the Czech Republic. The deviations are found to be smaller for the leading reformers than for Russia. In comparison to the countries which joined the EU in previous rounds of enlargement, the transition economies also still show a stronger negative deviation from the predicted levels of short-term debt. These results suggest that most of the transition economies in the sample actually have scope for raising more short-term debt given their current level of economic and financial development.

5.2. Policy Implications

On a general level, any policy proposal on how to deal with short-term capital flows must take into consideration that short-term capital may not only be more volatile than other forms of capital flows, but that it also fulfills an important economic role. Diamond and Rajan (2000) for instance focus on the economic role of short-term debt in financing illiquid investment projects with a long gestation period. Building on earlier work on the role of banks in providing liquidity and creating credit, they argue that an increase in the share of short-term debt might be a rational response of markets to adverse macroeconomic shocks or poorly-designed regulations. Improving the investment climate and enhancing corporate governance may thus have the side-effect also of lowering the share of short-term debt.

Taxes on short-term capital flows have been proposed as tools to enhance the degree of monetary autonomy and to reduce volatility in financial markets. Recent policy discussions have focused on unremunerated reserve requirements (URRs) of the type implemented in Chile since the early 1990s.¹² Less attention than to Chile is usually paid to the case of Slovenia although the country has had a similar regime since 1995 (Buch and Hanschel 2000).

Yet, the introduction of restrictions on short-term capital flows can be welfare-enhancing only under special conditions. Policymakers should take the following aspects into account:

First, taxes on capital flows cannot substitute for structural reforms. Recent evidence from the currency crises in Asia has shown the importance of structural deficiencies – corporate governance issues featuring prominently – for balance of payments problems. Taxes on short-term capital flows do not solve the problem of the induced exchange rate misalignment but may rather delay adjustment efforts. Proponents of a tax would object that it is precisely this additional breathing time that governments gain which makes the tax attractive. Yet, this window of opportunity may fail to deliver what it promises. Externally, the imposition of restrictions on the capital

¹² It should be noted that the taxes on cross-border capital flows which are currently being discussed such as imposed by Chile in the 1990s are not Tobin taxes of the pure type. That is, they are not levied on all international financial transactions, and they are not imposed multilaterally.

capital account may send a negative signal to foreign investors that the authorities are unable to solve the structural problems they are facing. This loss in confidence may cause a retreat of foreign capital over and above the amount originally intended. Internally, opponents to reforms may gain ground if the capital account restrictions shield the country from the consequences of inefficient policies, thus preventing efficient use of the additional time.

Second, the actual design and enforcement of the tax is an open issue. In order to be effective, the tax should apply to residents and nonresidents, and to inflows and outflows alike. Domestic residents are at least as sensitive to deteriorating news as foreigners are. Restrictions on capital *inflows* only would thus not suffice to reduce the volatility of capital flows. In addition, there is no clear-cut evidence as to which type of capital flows are the most volatile and how volatility changes after the imposition of controls.

Third, the capacity and ability to enforce the tax is crucial. If current account and capital account transactions have been liberalized in general, agents would be willing to pay any amount up to the level of the tax in order to avoid it. While this adjustment mechanism does not completely erode the effectiveness of the tax, it still reduces its impact. The Chilean experience has revealed that isolated restrictions on individual capital account items are not effective in the medium run (for a survey of the evidence see Laurens and Cardoso (1998)). Although the need to adjust did not arise instantaneously, capital account restrictions had to be expanded over time in order to prevent evasion (Labán and Larrain 1998). Notice, however, that the general notion that capital account restrictions can hardly be effective is not unequivocally supported by the Chilean evidence as the reserve requirement seems to have served to reduce inflows of short-term capital. Eventually, this has induced policymakers to lower the rate of reserves.

Fourth, even though a transactions tax may be effective in reducing inflows of (short-term) capital, it is not clear both from a theoretical and from an empirical point of view that the tax reduces volatility in financial markets. It can be argued that the introduction of the tax by itself can lead to an overshooting of the exchange rate because it is conceptually identical to a negative shock to the domestic interest rate (Buch et al. 1998). If – as is the case for the transition economies upon membership in the EU – the tax had to be abolished again in the future, this adjustment would take place even twice. A similar reasoning applies to transaction taxes being used as short-term emergency measures.¹³

Fifth, the envisaged membership in the European Union as well as membership in the OECD restrains the choices of the transition economies under review. At the same time, the conditions of EU membership by themselves can reduce the exposure of the new members to adverse external shocks by enhancing macroeconomic stability and by strengthening institutions.

¹³ Guitián (1998) for example suggests capital controls not as a *standard weapon in a country's policy arsenal* but as transitory instruments, ideally being used under the supervision of an international organization.

While these issues make us skeptical with regard to the usefulness and effectiveness of taxes on (short-term) capital flows, there are yet a few policy lessons that the transition economies can take from the evidence.

First, structural reforms at the domestic level can reduce the exposure of emerging market economies to volatile capital flows. Recent evidence suggests that changes in the composition of capital inflows away from long-term FDI towards short-term flows in the Asian economies have been promoted by sterilization policies which held domestic interest rates at high levels (Kaminsky and Reinhart 1998). In addition, there is ample evidence that sticking to fixed exchange rate regimes which are inconsistent with domestic fundamentals increases the risk of a crisis. This risk is particularly pronounced if weak macroeconomic fundamentals coincide with weak institutions and incentive systems at a micro-level.

Second, perhaps the most important policy implication apart from the need for sound structural reforms is the crucial need to disseminate transparent, timely, and reliable information to the international investment community. Better information policies would substantially reduce the costs of obtaining information for market participants. Although this would not eliminate the presence of noise traders, improved availability of information is likely to increase the importance of fundamentalists in the market.

Finally, because commercial banks are a key link between domestic and international financial markets, they also face substantial exposure to foreign exchange risks. Hence, safeguards against excessive foreign borrowing of banks should be a focus of policymakers.

6. SUMMARY AND MAIN CONCLUSIONS

Successful and sustained integration into international capital markets is one of the major challenges facing transition economies today. While global capital markets are more integrated today than they had been for a long time, progress has been uneven, and the process of integration has hardly been smooth for developing and transition economies. The overwhelming bulk of international capital movements today still takes place between developed economies. Even though the share of developing and transition economies has been on the rise, a number of these economies have suffered periodic setbacks through financial crises. This paper has surveyed the evidence on the integration of international capital markets and the role of transition economies in this process, and has discussed the causes and implications of financial crises with a particular emphasis on the microeconomic aspects of the problem.

While in quantitative terms, the degree of integration that the transition economies have achieved already is fairly high, the structure of their capital flows yet remains different from that of more developed market economies. Hence, as transition continues, and as these countries join the EU, the major impact is likely to be changes in the structure of capital flows towards

securitized financial assets. This is supported by the empirical finding that clear differences exist between developed and developing economies with regard to the structure of capital flows. Whereas portfolio inflows have dominated in developed economies, developing economies have relied on portfolio capital, foreign direct investment and other investments in roughly equal proportions. In terms of the maturity structure of international capital flows, short-term debt flows rose during the lending boom of the early 1990s, and fell thereafter.

Recent financial crises have shifted interest away from measures of the degree of capital mobility towards measures of the volatility characteristics of different capital account items. This shift has been prompted by the observation that capital flows to emerging markets often tend to be relatively volatile and that this may hold in particular for short-term capital flows. Also, there is evidence that large capital flow reversals have become more frequent in the 1990s. However, despite the extensive policy debate on the volatility of capital flows, sound empirical evidence on volatility patterns is rather scarce.

The experience of recent balance of payments crises in a number of developing and transition economies reinforces this point. Of particular concern is the risk of countries pursuing sound domestic policies and yet being drawn into crises erupting elsewhere. Evidence for contagion differs between crisis episodes. While the Czech crisis of 1997 had some moderate effects mainly in Eastern Europe, the Asian financial crisis of the summer of 1997 had relatively strong global contagion effects. The Russian crisis of August 1998 showed some contagion effects in Eastern Europe and Latin America. Overall, there is little evidence that recent financial crises have been more contagious than historically observed ones.

Although contagion is a valid concern, the recent empirical literature on balance of payments crises has identified a number of indicators which yield good ex-post forecasts of past crises. The developments captured by these indicators can obviously be influenced by domestic economic policy, suggesting that crises are often home-made to a considerable degree. Among the most important causes are inconsistencies on the microeconomic level. In particular, balance of payments crises often erupt more or less simultaneously with crises in the domestic banking sector. This danger is particularly pronounced for countries suffering from weak financial regulation and supervision. Enhancing the efficiency of the domestic banking system is all the more urgent because of the possible feedback effects between banking and balance of payments crises. Opening up for foreign banks can be a way to improve the overall efficiency of the domestic financial system. The entry of foreign banks increases competitive pressure on their domestic rivals and forces them to become more efficient. Moreover, foreign banks often have superior skills allowing them to offer more efficient financial services to the host economy.

Another focal point of the policy debate on international capital flows has been the issue of whether presumably excessively volatile short-term capital flows should be discouraged by imposing a tax on these types of capital flows. Attempts to avoid balance of payments crises by taxing (short-term) capital flows face several problems. First, taxes on capital flows cannot

substitute for tackling the structural problems which frequently are at the root of balance of payments crises. Second, the proper design and effective enforcement of taxes on short-term capital flows is an extremely difficult question. Third, even to the extent that a transactions tax can be effective in reducing inflows of (short-term) capital, it is not clear that the tax reduces volatility in financial markets. Thus, preference should be given to directly addressing structural deficiencies in the host economies, to improving the transparency of the domestic economy to international investors, and to put in place proper regulations preventing excessive foreign borrowing of banks.

REFERENCES

- Balasubramanyam, V.N., M. Salisu, and D. Sapsford (1996).* Foreign Direct Investment and Growth in EP and IS Countries. *The Economic Journal* 106 (Januar): 92–105.
- Baldwin, R.E., and R. Forslid (1996).* Trade Liberalization & Endogenous Growth: A q-Theory Approach. Centre for European Policy Research. CEPR Discussion Paper 1397. London.
- Bank for International Settlements (BIS) (2000).* Quarterly Review: International Banking and Financial Market Developments. Februar. Basle.
- Bertscheck, I. (1995).* Product and Process Innovation as a Response to Increasing Imports and FDI. *Journal of Industrial Economics* 43 (1): 341–357.
- Bordo, M.D., and A. P. Murshid (2000).* Are Financial Crises Becoming Increasingly More Contagious? What is the Historical Evidence on Contagion? National Bureau of Economic Research. Working Paper 7900. Cambridge, MA.
- Borensztein, E., J. de Gregorio, and J. Lee (1994),* How Does FDI Affect Economic Growth ?, IMF Working Paper 94/110.
- Bosworth, B.P., and S.M. Collins (1999).* Capital Flows to Developing Countries: Implications for Savings and Investment. *Brookings Papers on Economic Activity* 1: 143–165.
- Buch, C.M. (1997).* Creating Efficient Banking Systems — Theory and Evidence from Eastern Europe. Kiel Institute of World Economics. Kiel Study 277, Kiel.
- Buch, C.M. (1999).* Chilean-Type Capital Controls — A Building Block of the New International Financial Architecture? Kiel Institute of World Economics. Kiel Discussion Paper 350, Kiel.
- Buch, C.M. (2000).* Information or Regulation: What is Driving the International Activities of Commercial Banks? Kiel Institute of World Economics. Kiel Working Paper 1011, Kiel.
- Buch, C.M. (2001).* Is Foreign Control a Panacea? — On Governance and Restructuring of Commercial Banks in Transition Economies. In: A. Winkler (ed.). *Financial Development in Eastern Europe: The First Ten Years* (MacMillan) (forthcoming).
- Buch, C.M. and S. Golder (2000).* Foreign Competition and Disintermediation: No Threat to the German Banking System? *Banca Nazionale del Lavoro (BNL) Quarterly Review* 53(6): 107-133.
- Buch, C.M. and E. Hanschel (2000).* The Effectiveness of Capital Controls — The Case of Slovenia. *Journal of Economic Integration* 15(4): 563–588.

Buch, C.M. and R.P. Heinrich (1999). Twin Crises and the Intermediary Role of Banks. *International Journal of Finance and Economics* 4: 313-323.

Buch, C.M., und C. Pierdzioch (2000). The Growth and the Volatility of International Capital Flows: Reconciling the Evidence. In: Siebert, H. (ed.). *The World's New Financial Landscape: Challenges for Economic Policy*. Tübingen (Mohr) (forthcoming).

Buch, C.M., R.P. Heinrich, and C. Pierdioch (1998), Taxing Short-Term Capital Flows – An Option For Transition Economies? Kiel Discussion Paper no. 321, Kiel Institute of World Economics.

Calvo, G. (1995) Varieties of Capital-Market Crises. Inter-American Development Bank. Working Paper No. 306. Washington, DC.

Campbell J.Y., and K.A. Froot (1994). International Experiences with Securities Transaction Taxes. In Frankel, J.A. (ed.), *The Internationalization of Equity Markets*. Chicago. University of Chicago Press.

Chuhan, P., G. Perez-Quiros, and H. Popper (1996). International Capital Flows: Do Short-Term Investment and Direct Investment Differ? World Bank. Policy Research Working Paper 1669. Washington DC.

Claessens, S., M.P. Dooley, and A. Warner (1993). Portfolio Capital Flows: Hot or Cool?. In: Claessens, S., and S. Gopta (eds.). *Portfolio Investment in Developing Countries*. The World Bank (Washington D.C.): 18–44.

Claessens, S., A. Demirgüç-Kunt and H. Huizinga (1998). How Does Foreign Entry Affect the Domestic Banking Market?’, Policy Research Working Paper 1918, The World Bank.

De Gregorio, J., S. Edwards, und R.O. Valdes (2000). Controls on Capital Inflows: Do They Work? National Bureau of Economic Research (NBER). Working Paper 7645. Cambridge, MA.

Edison, H.J., und C.M. Reinhart (2000). Capital Controls During Financial Crises: The Case of Malaysia and Thailand. Board of Governors of the Federal Reserve System. *International Finance Discussion Papers* 662.

Edwards, S. (1998). Introduction. Special Issue 9th Interamerican Seminar on Economics. *Journal of Development Economics* 57(1): 1-5.

Edwards, S. (1998a). Interest Rate Volatility, Capital Controls and Contagion. National Bureau of Economic Research (NBER). Working Paper 6756. Cambridge, MA.

Edwards, S. (1998b). Capital Flows, Real Exchange Rates, and Capital Controls: Some Latin American Experiences. National Bureau of Economic Research (NBER). Working Paper 6800. Cambridge, MA.

Edwards, S. (1999). How Effective are Capital Controls? *Journal of Political Economy* 13(4): 65–84.

Eichengreen B., M. Mussa, G. Dell’Ariccia, E. Detragiache, G.M. Milesi-Ferretti, and A. Tweedie (1998). Capital Account Liberalization. Theoretical and Practical Aspects. International Monetary Fund. Occasional Paper 172. Washington, DC.

Eichengreen, B., M. Mussa, G. Dell’Ariccia, E. Detragiache, G.M. Milesi-Ferretti, and A. Tweedie (1999). Liberalizing Capital Movements — Some Analytical Issues. International Monetary Fund. Economic Issues 17. Washington, DC.

Feldstein, M. (1999). A Self Help Guide for Emerging Market Countries. *Foreign Affairs* (March-April): 99–109.

Feldstein, M. (2000). Aspects of Global Economic Integration: Outlook for the Future. National Bureau of Economic Research (NBER). Working Paper 7899. Cambridge, MA.

Fischer S., R.N. Cooper, R. Dornbusch, P.M. Garber, C. Massad Abud, J.J. Polak, D. Rodrik, and S.S. Tarapore (1998). Should the IMF Pursue Capital-Account Convertibility?. *Essays in International Finance* 208, May. International Finance Section. Department of Economics. Princeton University, NJ.

Forbes, K., and R. Rigobon (2000a). Contagion in Latin America: Definitions, Measurement, and Policy Implications. National Bureau of Economic Research. Working Paper 7885. Cambridge, MA.

Forbes, K., and R. Rigobon (2000b). No Contagion, Only Independence: Measuring Stock Market Co-movements. MIT Sloan School of Management and NBER. Mimeo.

Frankel, J.A., und K.A. Froot (1990), Chartists, Fundamentalists, and the Demand for Dollars. In A.S. Courakis und M.P. Taylor (Hrsg.): *Private Behavior and Government Policy in Interdependent Economies*. Oxford (Clarendon Press).

Garber, P., and M.P. Taylor (1995). Sand in the Wheels of Foreign Exchange Markets: A Sceptical Note. *The Economic Journal* 105: 173–180.

Goldberg, L., G. Dages, and D. Kimney (1999). Lending in Emerging Markets: Foreign and Domestic Banks Compared. Federal Reserve Bank of New York and NBER. mimeo.

Goldfajn, I., and R.O. Valdés (1997). Capital Flows and the Twin Crises: The Role of Liquidity. International Monetary Fund. Working Paper 97/87. Washington, DC.

Grilli, V.U., and G.M. Milesi-Ferretti (1995). Economic effects and structural determinants of Capital Controls. *IMF Staff Papers* 42(3): 517–551.

Grossman, S., and E. Helpman (1991). Quality Ladders in the Theory of Growth. *Review of Economic Studies* 58(1): 43-61.

Hausmann, R., and E. Fernandez-Arias (2000). Foreign Direct Investment: Good Cholesterol? Inter-American Development Bank. Research Department. Working Paper 417. New York.

International Monetary Fund (IMF) (1998). Balance of Payments Statistics Yearbook 1998. Part 2: World and Regional Tables. Washington, D.C.

International Monetary Fund (IMF) (1999). Exchange Restrictions. Various Issues. Washington, D.C.

International Monetary Fund (IMF) (2000). International Financial Statistics. CD-rom. Washington, D.C.

Johnston, B.R., and C. Ryan (1994). The Impact of Controls on Capital Movements on the Private Capital Accounts of Countries' Balance of Payments — Empirical Estimates and Policy Implications. International Monetary Fund. IMF Working Paper 78. Washington, DC.

Johnston, B.R., and N.T. Tamirisa (1998). Why Do Countries Use Capital Controls?. International Monetary Fund. IMF Working Paper 181. Washington, DC.

Kaminsky, G., and C. Reinhard (1996). The Twin Crises: The Causes of Banking and Balance-of-Payments Problems. Board of Governors of the Federal Reserve System. International Finance Discussion Papers 544.

Kaminsky G., and C. Reinhard (1998). Financial Crises in Asia and Latin America: Then and Now. *American Economic Review* 88: 444–448.

Kaminsky, G. and C. Reinhart (1999). Currency and Banking Crises: The Early Warnings of Distress. International Monetary Fund. IMF Working Paper 99/178. Washington, DC. Kaminsky, G., S. Lizondo, and C. Reinhard (1998). Leading Indicators of Currency Crises. *IMF Staff Papers* 45 (1): 1–48.

Klein, M., and G. Olivei (1999). Capital Account Liberalization, Financial Depth, and Economic Growth. National Bureau of Economic Research (NBER). Working Paper 7384. Cambridge, MA.

König, Ingo (1997). Devisenumsatzsteuer und Wechselkursverlauf. Berlin

Kono, M., und L. Schuknecht (2000). How Does Financial Services Trade Affect Capital Flows and Financial Stability? In: S. Claessens, und U. Jansen (eds.). Internationalization of Financial Services. Kluwer Publishers. In Vorbereitung

Krugman, P.R. (1979). A Model of Balance-of-Payment Crises. *Journal of Money, Credit, and Banking* 11: 311–25.

Labán, R.M., and F.B. Larrain (1997). Can a Liberalization of Capital Outflows Increase Net Capital Inflows? *Journal of International Money and Finance* 16: 415–431.

Labán, R.M., and F.B. Larrain (1998). The Return of Private Capital to Chile in the 1990s: Causes, Effects, and Policy Reactions. Faculty Research Working Paper Series R98-02. John F. Kennedy School of Government. Harvard University. Cambridge, MA.

Labán, R.M., and F.B. Larrain, and R.A. Chumacero (1997). What Determines Capital Inflows? An Empirical Analysis for Chile. Development Discussion Paper 590. Harvard Institute for International Development. Cambridge, MA.

Laurens, B., and J. Cardoso (1998). Managing Capital Flows. Lessons from the Experience of Chile. International Monetary Fund. IMF Working Paper 168. Washington, DC.

Levine, R. (1997). Financial Development and Economic Growth: Views and a Research Agenda. *Journal of Economic Literature* 35(2): 688-726.

Levine, R., and S. Zervos (1998). Stock Markets, Banks, and Economic Growth. *American Economic Review* 88 (3): 537–558.

Linne, T. (1999). Contagion effects of Central and East European currency crises. Diskussionspapiere 96. Institut fuer Wirtschaftsforschung, Halle.

Lipsey, R.E. (1999). The Role of Foreign Direct Investment in International Capital Flows. National Bureau of Economic Research (NBER). Working Paper 7094. Cambridge, MA.

Lucas, R.E. Jr. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics* 22(1): 3-42.

Lucas, R.E. Jr. (1990), Why Doesn't Capital Flow from Rich to Poor Countries ?, *American Economic Review* 80(2): 92-96.

Markusen, J.R. (1995). The Boundaries of Multinational Enterprises and the Theory of International Trade. *Journal of Economic Perspectives* 9 (2): 169-189.

McKinnon, R.I., and H. Pill (1995). Credible Liberalizations and International Capital Flows: The „Over-Borrowing Syndrome“. Center for Economic Policy Research. Policy Paper 437. Stanford University. Stanford, CA.

Mishkin, F.S. (1997). Understanding Financial Crises: A Developing Country Perspective. In: Bruno, M., and B. Pleskovic (eds.), Annual World Bank Conference on Development Economics 1996. Washington, DC: 29–62.

Montiel, P., und C. Reinhart (1997). The Dynamics of Capital Movements to Emerging Economies During the 1990s. University of Maryland. Mimeo.

Mussa, M., A. Swoboda, J. Zettelmeyer, and O. Jeanne (1999). Moderating Fluctuations in Capital Flows to Emerging Market Economies. Paper presented at the Conference on Key Issues in reform of the International Monetary and Financial System. May 28-29, 1999. Washington, DC.

Nadal-De Simone, F., and P. Sorsa (1999). A Review of Capital Restrictions in Chile in the 1990s. International Monetary Fund. IMF Working Paper WP/99/52. Washington, DC.

Nunnenkamp, P. (2000). Ausländische Direktinvestitionen und gesamtwirtschaftliches Wachstum in Entwicklungs- und Schwellenländern. Die Weltwirtschaft, Nr. 2: 187-206.

Obstfeld, M. (1986). Speculative attack and the external constraint in a maximizing model of the balance of payments. Canadian Journal of Economics 29 (1): 1–22.

Obstfeld, M. (1993). International Capital Mobility in the 1990s. National Bureau of Economic Research (NBER). Working Paper 4534. Cambridge, MA.

Obstfeld, M. (1995). Effects of Foreign Resource Inflows on Saving: A Methodological Overview. Mimeo, University of California at Berkeley.

Obstfeld, M., und A.M. Taylor (1998). The Great Depression as a Watershed: International Capital Mobility Over the Long Run. In M.D. Bordo, D.C. Goldin und E.N. White (Hrsg.): The Defining Moment: The Great Depression and the American Economy in the Twentieth Century. Chicago: Chicago University Press: 253–402.

Pierdzioch, C., und G. Stadtmann (2000), Komplexe Aktien- und Wechselkursdynamik in einem makroökonomischen Modell mit heterogener Erwartungsbildung. Kredit und Kapital (33): 377–409.

Quirk, P.J., and O. Evans (1995). Capital Account Convertibility — Review of Experience and Implications for IMF Policies. International Monetary Fund, IMF Occasional Paper 131. Washington, DC.

Rajan, R.G., and L. Zingales (1998). Financial Dependence and Growth. *American Economic Review* 88(3): 559-586.

Reinhart, C., and E. Talvi (1998). Capital Flows and Saving in Latin America and Asia: A Reinterpretation. *Journal of Development Economics* 57(1): 45-66.

Reinhart, C.M., and R.T. Smith (1997). Temporary Capital Controls. University of Maryland and International Monetary Fund. mimeo. Downloaded from <http://www.stern.nyu.edu/Faculty/FacPict/Economics/index.htm> on April 21, 1999.

Reisen, H. (1996). Alterssicherung, Pensionsfonds und die aufstrebenden Aktienmärkte. In: K. Bischofberger und D. Duwendag (Hrsg.), *Finanzmärkte, Finanzinnovationen und Geldpolitik*, Schriften des Vereins für Sozialpolitik, Neue Folge, Bd. 242, Berlin: 169-190.

Romer, P. (1986). Increasing Returns and Long-run Growth. *Journal of Political Economy* 94(5): 1002-1037.

Romer, P. (1990). Endogenous Technological Change. *Journal of Political Economy* 98(5): S71-S102.

Sarno, L., and M.P. Taylor (1999). Hot money, accounting lables and the permanence of capital flows to developing countries: an empirical investigation. *Journal of Development Economics* 59: 337-364.

Soto, M. (1999). Capital Flows and Growth. Empirical Evidence from the 1990s. OECD Development Centre. Paris.

Tobin, J. (1978). A Proposal for International Monetary Reform. *Eastern Economic Journal* 4 (3/4): 153-159.

Turner, P. (1995), Capital Flows in Latin America: A New Phase, BIS Economic Paper No. 44, May.

United Nations Conference on Trade and Development (UNCTAD) (1999). World Investment Report. New York.

Valdés-Prieto, S., and M. Soto (1998). The Effectiveness of Capital Controls — Theory and Evidence from Chile. *Empirica* 25: 133-164.

Van Rijckeghem, C., and B. Weder (2000). Spillovers Through Banking Centers: A Panel Data Analysis. International Monetary Fund. Working Paper 00/88. Washington, DC.

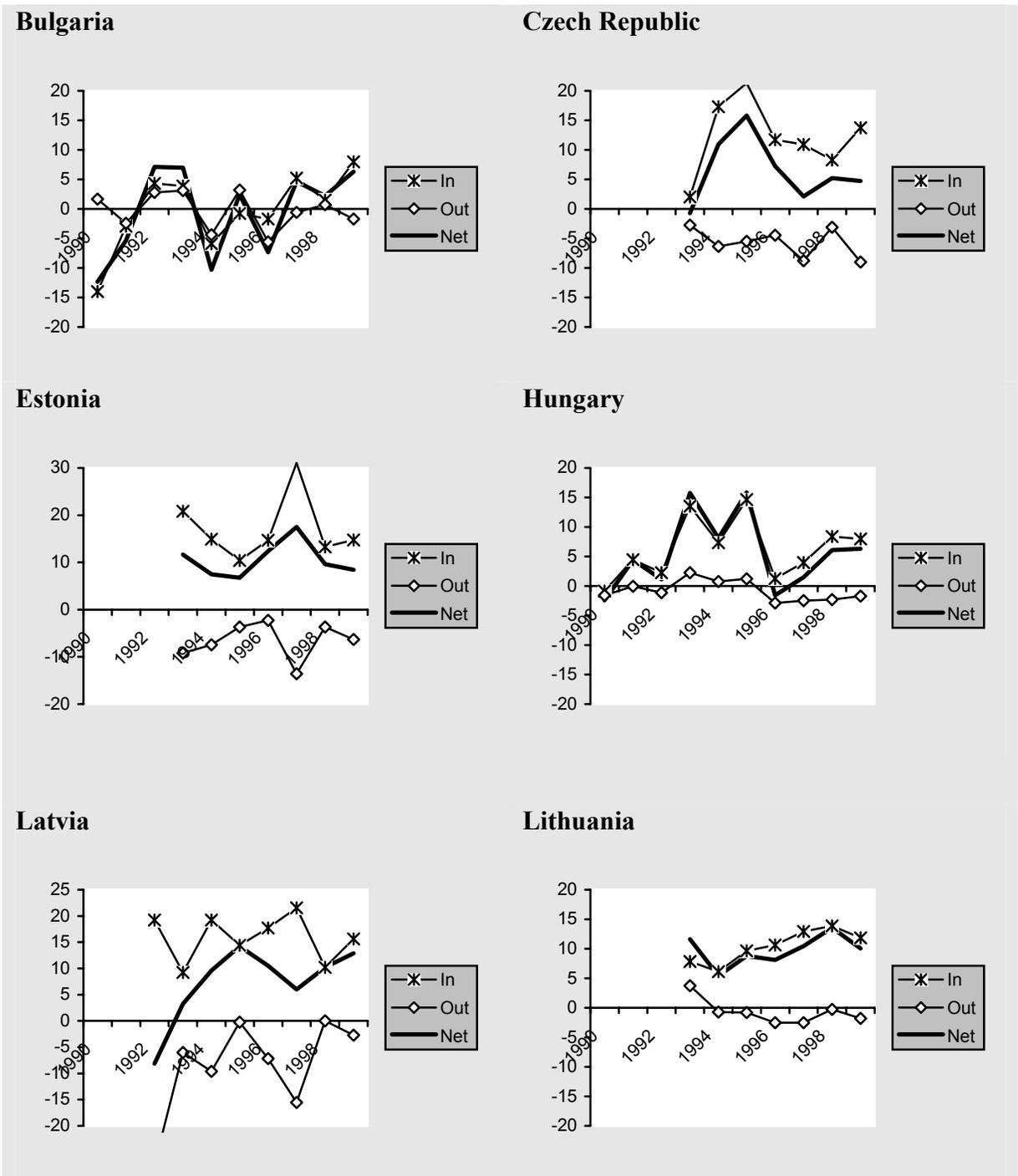
Velasco, A. (1987). Financial Crises and Balance of Payments Crises: A Simple Model of the Southern Cone Experience. *Journal of Development Economics* 27: 263–283.

White, W.R. (2000). Recent Initiatives to Improve the Regulation and Supervision of Private Capital Flows. Bank for International Settlements. BIS Working Papers 92. October. Basel.

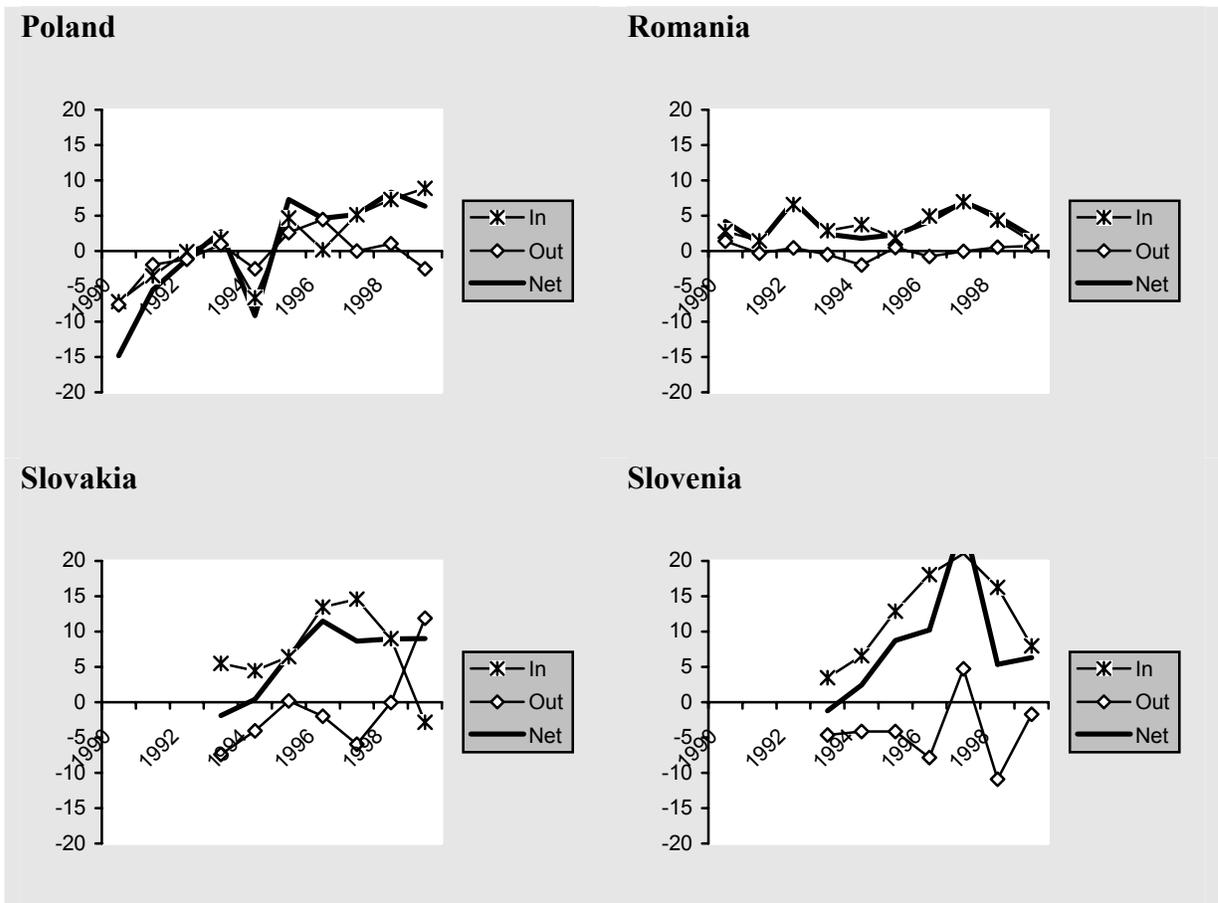
Williamson, J., and M. Mahar (1998). A Survey of Financial Liberalization. Princeton University. Department of Economics. *Essays in International Finance* 211. Princeton, NJ.

World Bank (2001). Global Development Finance. Washington DC.

Graph A1
Share of Gross Capital Flows Relative to GDP 1990-1999



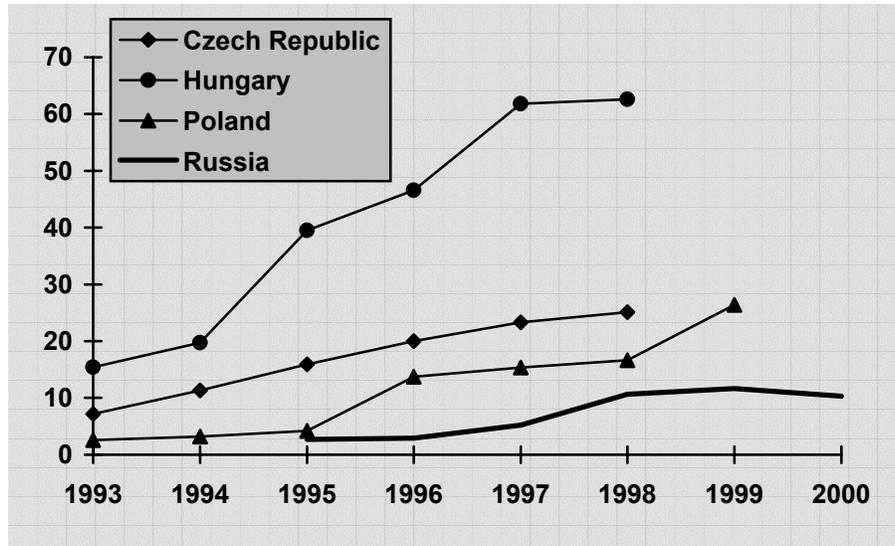
Graph A1 cont'd



Gross capital inflows (outflows) = FDI in reporting economy (abroad) + portfolio investment liabilities (assets) + other investments liabilities (assets)

Source: IMF (IFS)

Graph A2

Market Shares of Foreign Banks (Percent of Total Assets) 1991–2000

Source: Buch (2001)