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Volume Title: Capital Flows and the Emerging Economies: Theory, Evidence, and Controversies

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Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-18470-6

Volume URL: <http://www.nber.org/books/edwa00-1>

Conference Date: February 20-21, 1998

Publication Date: January 2000

Chapter Title: Introduction to "Capital Flows and the Emerging Economies: Theory, Evidence, and Controversies"

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Chapter URL: <http://www.nber.org/chapters/c6162>

Chapter pages in book: (p. 1 - 12)

Introduction

Sebastian Edwards

Introduction

The 1990s were characterized by a number of spectacular currency crises in the emerging countries. When the Mexican peso collapsed in December 1994 most analysts believed it to be an isolated event. At most, it was thought, the crisis would spread to the weaker Latin American nations. The reasoning was similar in July 1997 when the Thai baht was devalued and, shortly thereafter, went into a free fall. Reality differed from expectations, however, and in a short period of time Malaysia, Indonesia, South Korea, and the Philippines were subject to severe speculative attacks that caused major devaluations, deep recessions, and costly adjustment processes. By then it had become increasingly apparent that emerging countries were subject to “contagion,” and that currency crises could rapidly move from country to country.

By early 1998 market participants were asking themselves where the next crisis would erupt. Russia and Brazil, with large fiscal deficits and overvalued exchange rates, were obvious candidates and eventually joined the ranks of nations in crisis. The Russian default was particularly traumatic, sending investors throughout the world scrambling for cover and inflicting heavy losses on a number of large financial institutions. As a result of this crisis, interest rate spreads widened significantly, seriously straining the financial markets in the United States and other industrialized countries.

The Russian and Brazilian crises represented a severe blow to the credi-

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bility of the International Monetary Fund (IMF). In both cases the IMF publicly defended policies—overvalued exchange rates in the light of large fiscal imbalances—that were deemed clearly inappropriate by the vast majority of private sector and academic analysts, and that eventually proved to be flawed. In both cases the IMF put together, a few weeks before the final collapse, large rescue packages that turned out to be vastly insufficient. While in the case of Brazil the postcrisis period turned out to be less traumatic than many analysts had anticipated, crisis management continues to be one of the most pressing issues in modern macroeconomic analysis.

Large capital flows have been at the heart of each one of these crisis episodes. The stories are, in fact, remarkably similar: Attracted by high domestic interest rates and rosy prospects, large volumes of foreign funds—mostly in the form of portfolio capital—moved into these economies, propelling stock market booms and helping finance large current account deficits. At some point, and for a variety of reasons, these funds slowed down or were reversed. This change in conditions required significant corrections in macroeconomic policies. Invariably, however, the adjustment was delayed or was insufficient, increasing the level of uncertainty and the degree of country risk. As a result, increasingly large volumes of capital left the country and international reserves dropped to dangerously low levels. Eventually the pegged exchange rate had to be abandoned and the country was forced to float the currency. In some cases, such as those of Brazil and Russia, a runaway fiscal deficit made the situation even more explosive.

For many years, “official capital” dominated capital inflows into the developing countries. During the 1960s, 1970s, and most of the 1980s, private capital was restricted to foreign direct investment. Moreover, the conditions under which foreign direct investment was allowed into these countries were severely regulated by the authorities. This situation changed dramatically in the early 1990s when, as a result of the broad implementation of market-oriented reforms, an increasingly large number of countries opened up their economies to international competition. The sense that these countries had a bright economic future resulted in massive private portfolio inflows. Innovation in financial markets in the United States and Europe—including the proliferation of mutual funds—also contributed to the increase of capital flows into the emerging economies. After the fall of the Berlin Wall in 1989 the countries in the former Soviet Union joined the world economy and demanded large volumes of capital to restructure their productive sectors. The industrial countries responded promptly, and large flows of capital moved into a region of the world that for decades had been isolated from global financial markets.

Almost a decade after private flows became the dominant source of foreign funds in the emerging economies, experts continue to debate the

effects of increased capital mobility. For example, in the aftermath of the East Asian, Russian, and Brazilian crises a number of observers have argued that the free mobility of capital had increased the degree of vulnerability of the emerging economies, making them more prone to externally triggered crises. Some have argued that the imposition of controls on (short-term) capital inflows could help avoid major crises—or, at least, reduce their magnitude. Advocates of this approach have invoked Chile's experience with capital controls since 1991 to support their views. For example, Joseph Stiglitz, the World Bank's chief economist, had been quoted by the *New York Times* (1 February 1998) as saying, "You want to look for policies that discourage hot money but facilitate the flow of long-term loans, and there is evidence that the Chilean approach or some version of it, does this." Michel Camdessus, the IMF's managing director, has recently endorsed the view that capital controls should only be lifted toward the end of a market-oriented reform effort. In an interview in the *Financial Times* (9 February 1998) he said, "We need to be audacious but sensitive. We need to push ahead with capital flow liberalisation but in an orderly manner" (1). He added, "The last thing you must liberalise is the very short term capital movements" (13).

A number of authors have pointed out that in the face of increased private capital mobility, banking supervision and regulation become crucially important. Poorly regulated banks will intermediate the inflows of capital in an inefficient or even corrupt way, increasing the probability of a systemic financial crisis (Calvo 1998).

It has long been recognized that legal impediments to capital mobility are not always translated into actual restrictions on these movements. This distinction between *actual* and *legal* capital mobility has affected economists' ability to measure the "true" degree of financial integration in specific countries and has been at the center of recent debates on the effectiveness of capital controls. Some authors have followed Feldstein and Horioka (1980) and have relied on the correlation (or lack thereof) between savings and investment as a measurement of the degree to which capital markets in different countries are integrated. Other authors have concentrated on interest rate differentials in trying to determine whether a particular country is actually integrated into world financial markets (Dooley, Mathieson, and Rojas-Suarez 1997).

More recently, some authors have used information contained in the IMF's *Exchange Rate and Monetary Arrangements* to construct indexes on capital controls for a panel of countries. Alesina, Grilli, and Milesi-Ferretti (1994), for example, constructed a dummy variable index of capital controls. This indicator—which takes a value of one when capital controls are in place and zero otherwise—was then used to analyze some of the political forces behind the imposition of capital restrictions in a score of countries. Rodrik (1998) used a similar index to investigate the effects

of capital controls on growth, inflation, and investment between 1979 and 1989. Rodrik's (1998) work is based on the empirical growth literature and suggests that, after controlling for other variables, capital restrictions have no significant effects on macroeconomic performance.

A serious limitation of these IMF-based indexes, however, is that they are extremely general and do not distinguish between different intensities of capital restrictions, nor do they distinguish between the type of flow that is being restricted. For example, according to this IMF-based indicator, Chile, Mexico, and Brazil were subject to the same degree of capital controls in 1992–94. In reality, however, the three cases were extremely different. Whereas Chile had restrictions on short-term inflows, Mexico (for all practical purposes) had free capital mobility and Brazil had in place an arcane array of restrictions. These measurement difficulties are not unique to the capital flows literature, however. In fact, as Edwards (1993, 1998) and Rodrik (1995) have argued, the literature on trade openness and growth has long been affected by serious measurement problems. Constructing comprehensive and high-quality comparative measures of openness has indeed proved to be extremely elusive. A major challenge in empirically oriented work on capital flows, international trade, and economic performance is to generate results that are robust to alternative measures of capital mobility and trade restrictions. Future work along these lines should recognize, at the outset, that these indexes are likely to be subject to measurement error, and that there is a need to strive for robustness in the empirical analysis.

The increase in capital flows into the emerging markets during the first half of the 1990s helped generate significant stock market booms and allowed these countries to increase aggregate expenditure substantially. This, in turn, generated pressure on domestic prices and large real exchange rate appreciations (Calvo, Leiderman, and Reinhart 1993). A number of analysts have argued that these real exchange rate appreciations induced by capital inflows have tended to reduce the country's degree of international competitiveness, and that they may eventually result in an external crises and in a reversal of market-oriented reforms. As a result, some authors have argued that capital controls should be lifted only at the end of a reform effort (McKinnon 1991).¹

The recent experiences on the part of emerging markets of large private inflows have generated a series of important questions:

What is the appropriate exchange rate regime for a developing or transitional country in a world with massive capital mobility?
Does free capital mobility increase a small country's degree of financial vulnerability?

1. This, of course, is the "sequencing of reform" debate.

- How do countries respond once capital flows reverse and a crisis erupts?
 What is the nature of “contagion”?
 Following a crisis, does foreign direct investment welfare improve matters
 or does “fire-sale FDI” have a detrimental effect on poor countries?
 What has been the behavior of financial market indicators in periods fol-
 lowing a financial liberalization?
 What has been the role of Japan in the unfolding of the East Asian crisis?
 What have been the causes behind the massive capital flows to Eastern
 Europe and the former Soviet Union?
 To what extent are risk considerations reflected in the bond spreads of
 emerging markets?
 How do capital flows behave in the aftermath of the opening of the capi-
 tal account?
 How effective are controls on capital inflows?

The papers collected in this volume were presented at a National Bureau of Economic Research conference entitled *Capital Inflows to Developing Countries* held in Cambridge, Massachusetts, on 20–21 February 1998; the conference papers addressed many of the questions posed above. In preparing this volume I have divided the papers into three groups. The first part deals with different theoretical aspects of capital inflows into emerging economies and includes papers by Guillermo A. Calvo and Enrique G. Mendoza, Paul Krugman, and Philippe Bacchetta and Eric van Wincoop. The second part deals with broad cross-country empirical aspects of capital mobility and includes papers by Barry Eichengreen and Ashoka Mody, Swati Ghosh and Holger Wolf, and Geert Bekaert and Campbell R. Harvey. The third part deals with capital inflows to Latin America, Asia, and Eastern Europe and includes papers by me, Takatoshi Ito, and Stijn Claessens, Daniel Oks, and Rossana Polastri. In addition, I have included discussants’ comments. In the rest of this introduction I provide a reader’s guide to the volume.

Capital Flows to Developing Countries: Theoretical Aspects

The first paper in this section, “Contagion, Globalization, and the Volatility of Capital Flows” by Guillermo Calvo and Enrique Mendoza, deals with contagion, investors’ herd behavior, and the costs of gathering information in a globalized financial market. The authors argue that in a world with increased capital mobility, optimal portfolio diversification results in a higher degree of financial volatility. According to them, as the global capital market grows, so does the probability of “contagion.” The authors develop a model of an integrated global financial market with a large number of countries and a (very) large number of identical investors. The model assumes that there are costs of gathering and processing informa-

tion regarding specific country's performance, and that investors—or, more specifically, asset managers—incur a cost if their portfolio underperforms the market portfolio. The authors show that, within the context of their model, the benefits of acquiring country-specific information declines as the number of countries in the global portfolio increases. This means that, with a portfolio with a large enough number of countries, it may not pay to verify “rumors”; as a consequence, it is possible for the world financial markets to experience rumor-initiated contagion. According to the Calvo-Mendoza model, if asset managers face variable performance incentives and the number of countries in the world portfolio is large, it is possible to observe herd behavior. More specifically, it is possible that all investors simultaneously reallocate their portfolios, generating massive capital flows in and out of the emerging markets. In the last section of their paper Calvo and Mendoza calibrate their model and present a number of simulation exercises. The most interesting ones relate to the case of Mexico. According to their model, if the costs of gathering Mexico-specific information is 6.5 percent, a rumor that reduces the expected return on Mexico's equities to that of the member countries of the Organization for Economic Cooperation and Development (OECD) could result in a reduction in foreigners' holdings of Mexican equities of 40 percent of the total. In terms of 1997 levels this would have exceeded US\$20 billion, a figure similar to Mexico's holdings of international reserves. Their simulations also suggest that even if the number of countries in the global portfolio is as low as twenty, herding panics can generate very large outflows. Their calculation is that in 1997 these flows could have exceeded US\$25 billion.

In “Fire-Sale FDI” Paul Krugman develops a model to investigate the nature of capital flows in the aftermath of a currency crisis in a developing country. The point of departure is the observation that a crisis is usually followed by two-way capital flows. On the one hand, short-term portfolio (“hot”) capital flows out; on the other, foreign direct investment (FDI) flows in, as foreigners try to take advantage of new opportunities to buy local firms. The aim of this paper is twofold: first to provide some theoretical explanation for the currency crises of the 1990s, and second to evaluate the welfare implications of what Krugman terms “fire-sale FDI.” Krugman argues that from a conceptual point of view there are two possible explanations of the recent East Asian currency crises. One is based on the moral hazard–overborrowing argument, while the other is based on the classical liquidity crisis theory. According to Krugman the exact nature of postcrisis FDI depends on the causes of the currency collapse. If, on the other hand, the crisis is caused by moral-hazard-induced overborrowing, the decline in the price of domestic assets would allow foreigners to take control over them. In this case foreigners represent the most “efficient” possible operator of the asset in question, and the crisis would imply that

control over the asset is reallocated to the most efficient party. If the crisis is the result of a liquidity-generated panic, the foreign party—which is not liquidity constrained—has the opportunity of taking over domestic assets. According to Krugman, in this case fire sales will usually transfer control over to firms that are less efficient than the domestic firm. An important feature of fire sales that arises independently of the nature of the crisis is that, by limiting the fall in asset prices, they have a stabilizing effect in the crisis country.

The third paper in this section of the volume, “Capital Flows to Emerging Markets: Liberalization, Overshooting, and Volatility,” is by Philippe Bacchetta and Eric van Wincoop and deals with the impact of financial liberalization on the dynamic of capital flows. The starting point of this paper is the observation that in most developing countries capital flows appear to overshoot in the period following the opening of the capital account. This has been the case even if the capital account is opened up only partially. According to the authors, the analysis of capital flows dynamics will provide a better understanding of the issue of capital account sustainability. They argue that optimal policy responses would be very different if lending surges are short-term booms rather than long-term sustainable trends. In order to address this issue Bacchetta and van Wincoop develop a portfolio model with a large number of developed and developing countries. Individuals in emerging countries invest locally, while individuals in advanced countries can diversify internationally. It is further assumed that initially the developing countries impose a tax on foreign investors, and that there is an installation cost of capital. The authors solve the portfolio allocation problem and analyze the way in which a reduction in the tax on foreign investors affects the dynamics of capital flows into the developing countries. According to their model, following a once-and-for-all financial liberalization capital inflows will immediately jump, overshooting their (new) long-term level. The magnitude of the overshooting will depend on the importance of the installation cost. The larger this cost, the smaller the overshooting. Bacchetta and van Wincoop calibrate their model and perform a number of simulation exercises. In their first exercise they assume that the initial tax on foreign investors is equal to 5 percent and that it is reduced exponentially through time. In order to gain additional insights into the effects of liberalization, they analyze the case when only one country liberalizes as well as the case in which all developing countries liberalize simultaneously. They find that in both cases capital inflows will be characterized by an overshooting. Next, Bacchetta and van Wincoop extend their model to the case where there is imperfect information and learning. They show that in this instance liberalization processes will be characterized by high volatility and, under some circumstances, by contagion.

Capital Flows to the Emerging Markets: Evidence from Cross-Country Analyses

The three papers included in this second part of the volume use vast volumes of cross-country data to investigate a number of important issues related to capital flows into the emerging countries. In “What Explains Changing Spreads on Emerging Market Debt?” Barry Eichengreen and Ashoka Mody use data on more than thirteen hundred bond issues in developing countries to analyze the factors behind bond spreads. Their analysis differs from previous work in several respects. First, they cover a period (1991–97) when bond financing had become very important in many emerging countries. Second, their sample covers every region in the world, whereas most of the previous literature did not incorporate data from Africa. And third, the data set includes bonds issued by both the private and the public sector. In this paper, Eichengreen and Mody analyze both the country’s decision to issue a bond as well as the determinants of bonds’ spreads. By looking at both aspects of the problem, potential selectivity biases are avoided. The results obtained suggest that the decision to issue a bond is affected by both demand and supply considerations. Some of the most interesting results are that issues tend to increase when interest rates on U.S. treasury bonds decline, that more creditworthy countries tend to issue more frequently, and that countries with higher debt have a lower probability of issuing bonds. The spreads analysis suggests that there are differences across regions, in particular between Latin America and the rest of the sample. For Latin America the results suggest that larger issues command smaller spreads and that private issues on average have higher spreads when controlling for other factors. Eichengreen and Mody use their vast data set to analyze whether changes in spreads on emerging nations’ bonds have been the result of changing fundamentals or whether they have responded to changing “sentiments.” They found, somewhat to their surprise, that changes in spreads during the first half of 1997 had been related to changes in “sentiments” that were largely unrelated to fundamentals.

In their paper “Is There a Curse of Location? Spatial Determinants of Capital Flows to Emerging Markets,” Swati Ghosh and Holger Wolf use a cross-country data set to investigate the geographical distribution of capital flows to developing countries. The authors point out that capital flows have largely been concentrated in a small group of countries in East Asia and Latin America, and they ask whether this phenomenon is a reflection of the recipient countries’ fundamentals or whether geography plays a role in the allocation of capital flows across countries. In order to investigate this issue the authors estimate a series of equations taken from the international trade “gravity models” literature. According to gravity models (bilateral) trade is largely explained by the proximity—or lack thereof—

of a pair of countries: countries that are closer to each other have a larger volume of trade than do countries that are farther apart. Ghosh and Wolf begin their analysis by discussing possible reasons why the gravity models applicable to trade would also apply to capital mobility. In the actual estimation they distinguish between three types of capital flows: bank lending, short-term finance, and what they call “capital market,” which includes syndicated loans and bond issues. Their findings indicate that location is related to the ability of emerging markets to have access to these three different forms of foreign financing. They also find that gross domestic product (GDP) per capita is the only variable other than distance that helps explain capital flows. According to the authors, these results help explain why Africa has traditionally had limited access to capital markets.

In their paper “Capital Flows and the Behavior of Emerging Market Equity Returns,” Geert Bekaert and Campbell Harvey analyze in great detail the relation between U.S. equity flows to emerging markets and both the behavior of these countries’ capital markets, equity returns, and exchange rates, and the structural characteristics of the economies. They use data on seventeen emerging countries for the period 1977–96 to investigate break points in net equity flows from the United States to each of these countries. These break points are estimated endogenously using the actual time series for capital flows. The authors argue that these estimated break points correspond to the time when foreign investor’s attitudes to the emerging countries experienced a significant change and, thus, can be labeled as the dates when the financial liberalization actually occurred. The next step of the analysis consists of investigating the behavior of four groups of financial indicators during the periods preceding and following each of the break points. These indicators are related to (1) the cost of capital, (2) market structure, (3) characteristics of the economy, and (4) country risk. An important point made by this paper is that, in principle, using changes in legislation to date capital market liberalization may result in misleading results. Bekaert and Harvey’s analysis suggests that in sixteen out of the seventeen countries in their sample, foreign ownership of stocks increased significantly after the break point. Some of the paper’s most important results include the following: (1) On average, the dividend yield declined from approximately 4.3 percent to 2.5 percent in the period following the break point; (2) average ex post returns declined from 20 percent to 13.4 percent in the postliberalization period; (3) individual countries’ β s increased significantly after the liberalization period but remained, on average, below 0.5; (4) there are small declines on average volatility (both conditional and ex post) in the period after the liberalization; (5) the number of listed stocks increases after the liberalization, as does market capitalization; (6) average GDP growth increases very slightly after the break points; and (7) after the break points, there is a significant increase in the degree of openness of these economies.

Capital Flows to Latin America, Asia, and Eastern Europe

The last three chapters in the volume investigate in great detail the regional experiences with capital inflows in Latin America, Asia, and Eastern Europe.

In "Capital Flows, Real Exchange Rates, and Capital Controls: Some Latin American Experiences," I analyze capital flows to Latin America. The paper concentrates on five broad areas: (1) a historical analysis of capital flows trends; (2) the relationship between capital flows and real exchange rates in the Latin American countries; (3) capital flows and the ability to engage in independent monetary policy; (4) the role of the banking sector in recent Latin American currency crises; and (5) the role of capital controls in Latin America. The historical analysis highlights the cyclical nature of capital flows to the region during the last twenty five years. During this period Latin America has gone through a number of borrowing booms followed by major crises. An interesting aspect of this history, however, is that in the more recent period international investors appear to be more willing to distinguish between different Latin American countries. While the debt crisis of 1982 affected every country, the Mexican crisis of 1994 basically spared some of the countries with stronger fundamentals. Although it is too early to pass definitive judgment, it would seem that the Brazilian crisis of 1999 will also have limited impact on the region. In discussing the historical record, I deal with a number of analytical and policy controversies, including the measurement of capital mobility and the adequate sequencing of liberalization in the emerging economies. I analyze in detail the effect of capital inflows on real exchange rate behavior in a group of Latin American countries and find that capital flows have Granger-caused real exchange rate appreciations in most of these countries. My results also suggest that almost every one of the Latin nations has tried to sterilize large capital inflows in an effort to maintain greater control over monetary policy. These efforts, however, have been rather unsuccessful. My analysis of capital controls concentrates on restrictions to capital inflows and pays particular attention to the Chilean system, which consists of taxing short-term capital. I point out that this approach has been significantly less effective than most casual analysts have argued. In particular, the Chilean system has not succeeded in reducing the extent of real exchange rate appreciation, nor has it given the central bank a greater degree of control over monetary policy.

In "Capital Flows in Asia," Takatoshi Ito presents a detailed analysis of the behavior of capital flows in that region and gives an interpretation of the events that led to the East Asian crisis of 1997. A fascinating aspect of this paper is that it provides a clear and persuasive interpretation of Japan's role in this episode. According to Ito, until 1996 the emerging East Asian countries were subject to a virtuous cycle that was sustained by a

great sense of optimism about the future of the region and financed with very large capital flows, mostly coming from Japan. In late 1996, the virtuous cycle was interrupted, as exports from East Asia declined sharply. Both Japan's recession and the depreciation of the yen played an important role in the unfolding of these events. The East Asian currency crises in mid-1997 made things worse, as they were followed by substantial cuts in capital flows into the region. Ito investigates in detail the way in which Japanese FDI and the behavior of the yen affected growth in the emerging East Asian countries. His results indicate that changes in FDI from Japan have an important effect on the region's rate of growth, with a one-year lag. More specifically, according to Ito's estimates, the effect of changes in Japanese FDI on growth is twice that of FDI from the United States.

The final chapter in the volume is "Capital Flows to Central and Eastern Europe and the Former Soviet Union" and is co-authored by Stijn Claessens, Daniel Oks, and Rossana Polastri. They concentrate on the period 1991–97 and investigate the way in which different forms of capital flows evolved during that period. While in the early years (1991–93) FDI was almost the only type of flow into the region, starting in 1993 portfolio flows became increasingly important. According to the authors the increase in flows to the region has been the result of a series of interconnected factors, including a reduction in perceived country risk in most of these countries and the expectations that some of them would join the European Union. The authors argue that official flows—mostly from the multilateral institutions—have played an important role in helping pave the way for the structural reforms undertaken by the East European nations. The authors provide detailed analyses of the way in which the Czech Republic, Poland, Estonia, Hungary, and Russia responded to the large capital inflows of the mid-1990s. The paper ends with cautionary note regarding the potential dangers of fiscal imbalances and of low-quality financial intermediation. In retrospect, and in light of the Russian debacle of August 1998, these remarks appear to have had an element of premonition.

Concluding Remarks

The papers collected in this volume deal with a wide array of issues related to capital inflows to developing countries. They provide historical and empirical analyses of some of the most important issues. The theoretical models presented here throw new light on important questions, and some of the regional studies point toward unresolved issues. These papers also suggest areas for future research. Among the most important of these is optimal exchange rate regimes in a world with capital mobility. This issue has acquired particular interest in the aftermath of the Brazilian crisis of 1999 and the debate on Argentina's potential dollarization. A second

important topic concerns controls on capital mobility—in particular on capital inflows—and their effects on the emerging economies. More specifically, it is important to investigate whether this type of restriction helps countries reduce their degree of financial vulnerability. Issues related to contagion and the channels through which it manifests itself are also important, as are questions dealing with the sequencing and speed of liberalization. Finally, it appears that in spite of tremendous progress during the last few years, the economic profession still does not understand fully the anatomy of currency crises. Additional research in that area will certainly be welcomed.

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