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More Economic Letters

Capital Flows and Exchange Rates in the Pacific Basin

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The greater integration of emerging market countries with international capital markets has brought problems as well as benefits for recipients. On the one hand, access to foreign funds has helped finance economic development. On the other hand, greater integration has rendered developing countries more vulnerable to the effects of capital flow reversals, whether due to bad policies or bad luck. This vulnerability is highlighted by the Mexican peso crisis of 1994-95 and the recent Asian financial crisis.

This *Economic Letter* briefly reviews 14 papers that provide a comprehensive analysis of the theoretical and policy issues associated with international capital flows, as well as the responses of policymakers in Asia and Latin America. These papers were prepared for a conference on "Managing Capital Flows and Exchange Rates: Perspectives from the Pacific Basin," sponsored by the Federal Reserve Bank's Center for Pacific Basin Monetary and Economic Studies in 1996, and they have recently been published in a conference volume (Glick 1998).

Determinants of capital flows and exchange rates

Determining the relative roles of domestic and external factors in driving capital flows is critical to determining the appropriate response of policymakers. To the extent that domestic factors, such as favorable economic reforms and investment returns, "pulled" capital into developing countries, a reversal of flows can be avoided by maintaining sound domestic economic policies
"pushed" by external conditions, such as low inte

business conditions in industrial countries, domestic policymakers must be prepared for the possibility that capital flows may reverse when foreign economic conditions change.

Henning Bohn and Linda Tesar analyze whether U.S. portfolio equity investments in Asia responded to the “pull” of higher expected returns in Asian markets or the “push” of lower U.S. interest rates. They conclude from the significant differences in the timing of investment across individual countries and from time series estimation of a portfolio model over the period 1986-95 that domestic “pull” factors in Asia rather than “push” factors in the U.S. were more important in explaining U.S. investment in foreign equity markets.

Another factor affecting international investment flows, particularly direct investment, has been currency realignment. The yen appreciation of over 50% against the U.S. dollar in the late 1980s boosted the international competitiveness of the Newly Industrialized Economies, including Korea, Taiwan, and Singapore, and led Japanese investment to shift towards lower-cost production locations in Southeast Asia, such as Malaysia and Thailand.

Linda Goldberg and Michael Klein analyze the role of exchange rate changes for the pattern of direct investment flows and trade among Japan, the U.S., East Asia, and Latin America over the period 1978-93. They find that the appreciation of the yen increased direct investment from Japan to Asia and to some extent “crowded out” direct investment from the U.S. to Asia. They also find Japanese direct investment tended to stimulate East Asian imports from Japan, while U.S. direct investment substituted for U.S. imports from Asian countries.

A more complete analysis of capital flows and exchange rates necessarily requires recognizing their simultan
With a small open economy model, Pierre-Richa
Alexander Hoffmaister analyze theoretically the responses of capital flows and the exchange rate to underlying shocks, such as a world

interest rate decrease or a domestic fiscal stimulus. Using vector autoregressive empirical techniques, they find that world interest rate declines explain much of the pattern of capital inflows and real exchange rate appreciation observed in Asian countries.

Risk also plays an important role in international capital movements. Theo Eicher and Stephen Turnovsky formulate a stochastic growth model to assess the effects of changes in risk associated with various external and domestic shocks on key macroeconomic variables. They use the model to explain cross-country and cross-time differences in the economic performances of Mexico and Indonesia during the period 1973-95. Their model explains the behavior of interest rates and exchange rates reasonably well, but does less well in explaining other variables, such as capital flows and output growth rates.

Exchange rate crises and contagion

Exchange rate crises are characterized by sudden, large outflows of capital that trigger devaluations, often spreading contagiously across countries. What explains such events?

Economic theory suggests that a pegged exchange rate regime can become unviable when cross-border capital flows are freely mobile and market participants suspect that the government will not or cannot maintain the peg. For example, excessive monetary expansion to monetize fiscal deficits or bail out an insolvent domestic banking system can deplete the central bank's foreign exchange reserves and weaken its ability to defend a peg. Or conditions such as high unemployment or a weak banking system may compromise the central bank's willingness to defend a currency peg by raising interest rates.

Richard Meese and Andrew Rose study how wel [illegible] macroeconomic indicators predict currency cr [illegible] countries. They find that high foreign interest rates, a high external debt burden, loose monetary policy, and domestic recessions all are associated with currency crises. However, they do not find evidence that low levels of foreign currency reserves, the degree of overvaluation relative to purchasing power parity, or current account deficits are consistently associated with currency crashes.

Peter Garber and Subir Lall study how offshore financial derivatives markets contributed to Mexico's 1994 exchange rate crisis by allowing domestic Mexican banks to circumvent prudential and anti-speculative regulations and build up undetected off-balance-sheet dollar liabilities through their New York financial subsidiaries. When the peso depreciated and Mexican banks found it more expensive to pay off these positions, a crisis in the Mexican banking system evolved. The authors argue that policymakers should not respond by banning derivative usage, since doing so just drives it more offshore; rather, they should create a regulatory environment that brings the markets on-shore and improve banking supervision.

In the wake of the Mexican crisis of December 1994, Argentina and Brazil came under the most severe pressure. Several countries in Asia also came under attack in early 1995, though to a lesser extent than in Latin America. Following the devaluation of the Thai baht in July 1997, contagion effects were experienced primarily in Asia. What explains why some emerging markets experienced more of a "tequila hangover" or "bahtulism" effect than others?

Jeffrey Frankel and Sergio Schmukler assess the contagion effects of the Mexican financial crisis with return data on domestic stock indexes and closed-end country equity funds for Asian and Latin American countries. They find that the Mexican shock spilled over strongly to other countries in Latin America, and to a lesser extent "passed through" Asian country funds traded in New York to stock markets in Asia. The authors also assess the extent to whic

can be attributed to economic fundamentals, a

countries with weaker external positions, as measured by high debt-export and current account deficit-GNP ratios, or low foreign reserve-GNP ratios, experienced more adverse spillover effects.

Holger Wolf takes a longer-term view in assessing the linkages among the equity markets of emerging countries, using data spanning the mid-1980s to 1995. He finds evidence that cross-country similarities in economic fundamentals, such as macroeconomic performance, market development stage, risk exposure, and geographic location, explain much of the co-movement in cross-country equity returns. After controlling for the effects of fundamentals, he also finds evidence of contagion effects in the form of residual co-movements in returns.

Effects of capital inflows

Some researchers have analyzed the extent to which capital inflows to developing countries have adversely affected domestic economic performance and/or worsened banking sector fragility.

Helmut Reisen formulates a measure of the long-run sustainability of capital inflows for a number of developing countries. While in many cases foreign borrowing increases have been associated with spending booms, asset market bubbles, and banking crises, he suggests that these developments are more attributable to domestic financial market distortions than to capital flows per se. He also suggests that foreign direct investment should be encouraged over other forms of capital inflows, since it is less subject to reversals and is more likely to convey positive growth externalities.

Ronald McKinnon and Huw Pill discuss how financial deregulation and implicit or explicit government guarantees for banks can engender excessively risky borrowing and a spending boom that culminates in crisis. In their view, foreign capital flows compound this cycle. Examining data on the magnitude and composition of credit expansion through 1995, they find symptoms of overborrowing in Mexico and, to a lesser extent, in several East Asian countries. Th
financial crisis of 1997-98 to overinvestment in po

rather than to overconsumption, as in the case of Mexico. They conclude that maintaining the strength and efficiency of financial institutions is crucial to avoiding overborrowing problems.

Steven Kamin and Paul Wood examine the impact of capital inflows on Mexico's macroeconomic performance in the pre-crisis period when it experienced rapid money growth, sharp interest rate declines, rapid bank lending growth, and a consumption boom. While these developments are consistent with the purported effects of capital inflows, they are also consistent with an exogenous expansion in domestic monetary policy. Kamin and Wood find that Mexican capital inflows measurably reduced interest rates and raised money growth in the 1990s, but even without capital inflows, money would have increased substantially. They find that capital inflows also stimulated Mexican consumption positively. In other Latin American countries, as well as East Asian countries, the authors find capital inflows had no influence on money growth and interest rates, but had a greater impact on investment than on consumption.

Policy responses to capital inflows

To the extent that capital inflows appreciate a currency's value, efforts to maintain a peg imply that the central bank must intervene by absorbing the foreign exchange brought in by the capital inflows. However, such purchases increase the monetary base, generating inflationary pressure. To the extent that capital inflows are intermediated through the domestic banking system, they also may lead to the expansion of bank deposits and loans. If bank supervision is not fully effective, the expansion of bank balance sheets associated with capital inflows may worsen the fragility of the banking system.

One way to limit the impact of capital inflows o[illegible] the financial system without changing the excha[illegible] the expansionary effects of foreign exchange intervention on the money supply by simultaneously contracting domestic credit. Ken

Kletzer and Mark Spiegel evaluate the costs of sterilization arising from buying foreign securities whose nominal yield is less than that paid on the domestic bonds issued to absorb credit. They construct sterilization cost estimates for several developing countries and find that these costs became large during periods of inflow surges, and that sterilization was typically only partially successful in maintaining domestic monetary and exchange rate goals.

When capital inflows are persistent and sterilized intervention too costly, a country may adopt measures to limit inflows through controls such as ceilings on foreign borrowing by domestic residents or taxes on domestic assets acquired by foreigners. Carmen Reinhart and R. Todd Smith examine several countries that imposed controls on capital inflows and conclude that, while these policies may have been effective in the short run in reducing the volume of inflows or in lengthening their maturity composition, they have had little discernible long-run effects on consumption, the real exchange rate, or the current account.

Kevin Cowan and Jose De Gregorio examine Chile's experience in managing capital flows when confronted by an inflow surge in the early 1990s. Chilean policymakers reacted by treating the inflows as temporary, resisting a nominal exchange rate appreciation, and mostly sterilizing the foreign exchange intervention. As the inflows persisted, a combination of short-term capital inflow restrictions and greater exchange rate flexibility was implemented. The authors attribute Chile's success not to any single instrument, but to its implementation of a comprehensive policy package.

The current Asian financial crisis will undoubtedly yield further lessons for researchers and policymakers.

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Reference

Glick, Reuven, ed. 1998. *Managing Capital Flows and Exchange Rates: Perspectives from the Pacific Basin.* Cambridge University Press.

Inquiries about ordering the book should be directed to Cambridge University Press, 40 West 20th Street, New York, N.Y. 10011-4211.

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