

# FRBSF ECONOMIC LETTER

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## Emerging Markets and Macroeconomic Volatility: Conference Summary

*This Economic Letter summarizes the papers presented at the conference on “Emerging Markets and Macroeconomic Volatility: Lessons from a Decade of Financial Debacles” held at the Federal Reserve Bank of San Francisco on June 4–5, 2004, under the joint sponsorship of the Bank’s Center for Pacific Basin Studies and the University of Maryland’s Center for International Economics. The papers are listed at the end and are available at <http://www.frbsf.org/economics/conferences/0406/index.html>.*

The last decade has witnessed a series of major macroeconomic crises in emerging market economies. Typically these crises have been characterized by the sudden stop of capital inflows, the collapse of fixed exchange rate regimes, falls in asset prices, and sharp declines in output. The papers presented at this conference analyze the causes and consequences of these volatile events.

### **Sudden stops and currency depreciations**

Calvo, Izquierdo, and Mejía argue that most recent financial crises experienced by emerging market economies cannot be explained by traditional economic models that emphasize excessive fiscal deficits and/or overly expansionary monetary policy as their underlying cause. Rather, they attribute the crises to weaknesses in the domestic financial sector and to an excessive degree of liability dollarization, that is, the denomination of domestic liabilities in foreign currency, typically dollars. With liability dollarization, depreciation of the domestic currency raises the cost of servicing debt and increases the possibility of failure by domestic firms and banks as well as sudden stops in foreign lending. Moreover, because emerging market economies that are highly dollarized also tend to depend on foreign financing to import goods used in domestic production, they are particularly vulnerable

to the effects of sudden stops that require a large contraction of domestic demand to offset the loss of foreign financing.

One especially puzzling element of these crises is the failure of the very large exchange rate depreciations that typically accompany them to lead to an export boom and hence an economic expansion. For example, in the countries hardest hit in the East Asian crisis of 1997–1998, exports either fell or stagnated, despite real depreciations of 60% or more. These countries did see a rapid turnaround in their current accounts, but it was primarily accounted for by a huge collapse in imports, not a rise in exports. Cook and Devereux develop a quantitative dynamic general equilibrium model of the East Asian crisis for South Korea, Malaysia, and Thailand to explain this phenomenon. They argue that depreciations did not immediately lower those countries’ export prices abroad because their export prices were temporarily fixed in terms of U.S. dollars; in contrast, because the depreciations were immediately passed through to higher prices for imported goods, import demand fell sharply. Consequently, trade within the East Asian region dropped precipitously.

Cavallo, Kisselev, Perri, and Roubini provide an alternative analysis of why the depreciations during recent currency crises did not stimulate demand and output through their effects on competitiveness, but instead were associated with sharp output contractions. Their model points to the combined role of liability dollarization and financial frictions in the form of a margin constraint on foreign borrowing that is tied to the value of a country’s assets. Because depreciations reduce the value of domestic assets relative to foreign liabilities, they make a country with a high foreign debt level more likely



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to hit its constraint, forcing it to sell off domestic assets. This “fire sale” of assets leads to further currency depreciation and a decline in stock prices, creating a significant negative wealth effect that depresses spending and output. Cavallo et al. suggest that, in the presence of margin constraints and dollarized liabilities, maintaining a currency peg could avoid exchange rate overshooting and mitigate the negative wealth effect.

Chang and Velasco argue that this prescription ignores what determines the size of the dollarized debt portion of a country’s portfolio to begin with. In their model, portfolio choices about what shares of debt to hold in domestic currency vis-à-vis dollars depend on the risk–return characteristics of these securities and expected monetary and exchange rate policies. They identify conditions under which either fixing or floating may be preferred policies.

### Capital flows and default

Banks play an important role in the allocation of capital and, hence, in stimulating growth in a country. Oviedo develops a model with two-sided debt contracts in which domestic banks intermediate loans from foreign lenders to domestic firms. Because domestic firms may default on their debt if negative productivity shocks are severe enough, bank loans are risky. Thus, if a large enough number of firms default, the banks may fail, creating a banking crisis. Oviedo finds that the model is able to replicate several common features in emerging market economies, including the association of banking crises with bad aggregate fundamentals and the countercyclical rise of domestic interest rates above foreign rates when output declines.

Aguiar and Gopinath study the behavior of capital flows when a country can renege on sovereign debt. They develop a model of a small open economy where domestic consumers borrow internationally to smooth consumption declines in the face of adverse business cycle shocks. In their model, as is commonly found in emerging market economies, international borrowing is countercyclical; that is, on average these countries borrow more and at lower interest rates in good times than in slumps. A key ingredient of the model is that foreign lenders account for the possibility of a government default by charging an interest rate premium. Consequently, even though domestic consumers have a larger demand for foreign funds during economic downturns, the probability of default and, thus, the interest rate premium increase. The higher inter-

est rate premium is enough to offset the increased demand for foreign funds, implying consumers borrow less during economic downturns than during upturns.

### Contagion and external factors

Currency and banking crises in emerging market economies have tended to be bunched together over the last decade. Consequently, substantial research has focused on answering how financial crises spread across countries. Broner, Gelos, and Reinhart use microeconomic data on individual emerging market mutual funds to analyze how portfolio adjustments by global investors may spread financial shocks across countries. In their theoretical portfolio model, investors affected by a crisis in one country transmit the crisis by selling off assets in other countries in which they are exposed. Their empirical analysis finds that when the returns of a fund are low relative to the returns of other funds, the fund managers tend to reduce their investments in countries in which the fund is overexposed and increase investments in countries in which it is underexposed. They then construct a measure of financial interdependence, based on the extent to which countries “share” overexposed funds. They find that during the Thai, Russian, and Brazilian crises, those countries that shared overexposed funds with the crisis countries experienced the largest stock price declines.

Uribe and Yue analyze the extent to which output in emerging market economies and interest rate spreads (the difference between domestic and U.S. interest rates) have responded to changes in the U.S. interest rate as well as to domestic economic shocks. They find that U.S. interest rate shocks explain about 20% of the output fluctuations in emerging countries, working primarily through their effects on country spreads; for example, an increase in U.S. interest rates raises domestic interest rates by more than one-for-one, depressing local output. They also find that local business conditions affect these interest rate spreads, which, in turn, significantly exacerbate macro volatility in these countries. In addition, they calibrate a simple theoretical model of a small open economy to show that the associated impulse responses to country-spread shocks and to U.S. interest rate shocks are broadly consistent with those implied by their empirical analysis.

There is a general consensus that openness to trade and financial flows stimulates domestic growth. This raises the question whether openness also

increases vulnerability to external shocks. Kose, Prasad, and Terrones examine this question and find that higher growth is indeed associated with greater volatility for developing countries. They also find, however, that this positive association is greater for countries with relatively low levels of trade and financial integration; countries that are more open to trade and finance appear to face a less severe tradeoff between growth and volatility.

### Government policies

Insofar as financial crises in emerging market economies arise from imperfections in international capital markets, such as collateral constraints and trading costs, how can government policies address the problem? One proposed policy approach is to create explicit price-floor guarantees by international financial organizations for investments in emerging market economies. Mendoza and Durdu introduce price-floor guarantees into a model that features sudden stops caused by collateral constraints and trading costs. They show that guarantees to buy assets when they fall to a set level can prevent or at least mute sudden stops, asset fire sales, and crises. However, an important drawback of this approach is that it creates moral hazard incentives among global investors: because global investors essentially receive free insurance against extreme asset fluctuations, they will tend to overinvest, leading to the overvaluation of domestic assets.

Wright studies whether government intervention in international capital markets in the form of capital controls can make the economy better off. He shows that the desirability of such intervention depends crucially on the kind of default risk foreign lenders face. When the government and legal systems of a developing country enforce private contracts between domestic resident borrowers and foreign lenders, but can declare a national default on the country's aggregate borrowing, lenders will extend credit to individual borrowers just to the point where the government finds it preferable not to default. In this case, capital controls will not improve welfare. However, when private contracts with foreigners are not enforced, exposing foreign investors also to resident default risk, foreign lending will be too low. In this case, government intervention in the form of a borrowing

subsidy reduces the residents' incentives to default and thus can raise foreign lending and welfare. In neither case, Wright argues, is there a justification for capital controls.

**Reuven Glick**  
Group Vice President

**Diego Valderrama**  
Economist

### Conference papers

Aguiar, Mark, and Gita Gopinath. "Defaultable Debt, Interest Rates, and the Current Account."

Broner, Fernando A., R. Gaston Gelos, and Carmen Reinhart. "When in Peril, Retrench: Testing the Portfolio Channel of Contagion."

Calvo, Guillermo A., Alejandro Izquierdo, and Luis-Fernando Mejía. "On the Empirics of Sudden Stops: The Relevance of Balance-Sheet Effects."

Cavallo, Michele, Kate Kisselev, Fabrizio Perri, and Nouriel Roubini. "Exchange Rate Overshooting and the Costs of Floating."

Chang, Roberto, and Andrés Velasco. "Endogenous Dollarization, Expectations, and Equilibrium Monetary Policy."

Cook, David, and Michael B. Devereux. "Dollar Bloc or Dollar Block: External Currency Pricing and the East Asian Crisis."

Kose, M. Ayhan, Eswar S. Prasad, and Marco E. Terrones. "How Do Trade and Financial Integration Affect the Relationship between Growth and Volatility?"

Mendoza, Enrique G., and Ceyhan Bora Durdu. "Putting the Brakes on Sudden Stops: The Financial Frictions-Moral Hazard Tradeoff of Asset Price Guarantees."

Oviedo, P. Marcelo. "Macroeconomic Risk and Banking Crises in Emerging Market Countries: Business Fluctuations with Financial Crashes."

Uribe, Martín, and Vivian Z. Yue. "Country Spreads and Emerging Countries: Who Drives Whom?"

Wright, Mark L. J. "Private Capital Flows, Capital Controls, and Default Risk."

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