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Research Summaries

Surges in Capital Flows: Why History Repeats Itself

Mahvash S. Qureshi

As the world economy limped out of the global financial crisis, there was a resurgence of capital flows to emerging market economies (EMEs)—followed by an even sharper reversal in the aftermath of the U.S. sovereign downgrade. Recent months have seen capital flows to EMEs resume again. This article summarizes recent research on what causes these mercurial movements of capital flows to emerging markets, and what factors determine how much capital countries receive during surge episodes.

After collapsing during the 2008 global financial crisis, capital flows to emerging market economies (EMEs) surged in late 2009 and 2010, raising both macroeconomic challenges and financial-stability concerns. By the second half of 2011, however, capital flows receded rapidly, eliminating much of the cumulated currency gains, and leaving EMEs grappling with sharply depreciating currencies in

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The LIC-BRIC Linkage: Growth Spillovers



Issouf Samake, Yongzheng Yang, and Catherine Pattillo

Trade and financial ties between low-income countries (LICs) and emerging market economies (EMEs) have expanded rapidly in recent years. This leads to the potential for economic developments in EMEs to exert spillovers on LICs growth. The most likely and important source countries of such spillovers are the so-called BRICs—Brazil, Russia, India, and China. This article summarizes recent IMF research on these spillovers.

Research on business cycle transmission has regained attention in the wake of the recent global financial crisis. The IMF has recently carried out several studies that examine spillovers from systemically important countries (notably, the United States, European Union, Japan, and China) to the rest of the world (IMF, 2011a–2011e). Similar to earlier IMF work in this field, Bayoumi and Swiston (2007), Helbling and others (2007), and Kose and others (2003) almost exclusively focus on spillovers among advanced and major emerging market economies,

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their wake. The trend seems to have reversed again since the beginning of 2012, with flows to EMEs rebounding, and in some cases reaching the peaks seen in 2010 and early 2011.

While such volatility is nothing new—historically, capital flows have been episodic—it has reignited questions about the nature of capital flows to EMEs. Several commentators argued that the immediate post-crisis surge was largely a result of country-specific determinants—or domestic "pull" factors such as improved macroeconomic fundamentals, better institutional quality, and lower country risk in EMEs (Fratzscher, 2011). But if so, the sharp reversal following the U.S. sovereign downgrade and rise in market risk-aversion is certainly puzzling—after all, the EMEs in question did not experience overnight a marked change in fundamentals.

The debate on what drives capital flows dates back at least to the mid-1930s—when the U.S. was contending with a surge in capital inflows—and helped shape the post-war international monetary order and the IMF's *Articles of Agreement*. The debate resumed in the 1990s when, as a result of capital account liberalization (as well as recovery from the 1980s debt crisis), many EMEs—especially in Latin America and Asia—began to attract substantial portfolio flows from private foreign investors. Subsequent studies analyzed the determinants of these flows by characterizing them as "push" and "pull" factors. Push factors reflect external conditions (or supply-side factors) that induce investors to increase exposure to EMEs—for example, lower interest rates, weak economic performance in advanced economies, lower risk aversion, and booming commodity prices. Pull factors are recipient country characteristics (or demand-side factors) that affect risks and returns to investors such as macroeconomic fundamentals, official policies, and market imperfections.

Since, in equilibrium, flows must reflect the confluence of supply and demand, it is not surprising that most studies on the determinants of capital flows to EMEs find that both push (supply-side) and pull (demand-side) factors matter (for example, Papaioannou, 2009; IMF, 2011). But studies examining the volatility of capital flows present a more mixed picture. For example, Mercado and Park (2011) find a dominant role for domestic pull factors as well as regional contagion in determining the volatility of capital flows, while Broto and others (2011) find that both global and domestic factors affect capital flow volatility, but the significance of the former has increased in the last decade.

More recently, some studies have attempted to characterize the dynamics and determinants of large capital inflows—or surges—on the grounds that their characteristics may be different from more normal variations. Additionally, from a policy perspective, large upward swings are of particular interest both because of their greater impact on the exchange rate and competitiveness, and because they are more likely to overwhelm the domestic regulatory framework, thus raising financial-stability risks. Reinhart and Reinhart (2008) and Cardarelli and others (2009) catalog net capital flow surges in both advanced and emerging economies, and show a strong correlation between these episodes and global factors such as U.S. interest rates, world output growth, and commodity prices, as well as with local characteristics, notably the current account deficit and real GDP growth. Forbes and Warnock (2011) use gross capital flows to differentiate between episodes of surges, stops, flight, and retrenchment, and find that global risk aversion, liquidity, and growth matter for surge occurrence. But in contrast to most other studies, they find that advanced economy interest rates are unimportant—though this may be because their sample comingles advanced and emerging economies (so any effect of higher advanced economy interest rates in reducing flows to EMEs may be offset by their positive impact on flows to advanced economies).

"While such volatility is nothing new—historically, capital flows have been episodic—it has reignited questions about the nature of capital flows to EMEs."

Focusing on EMEs, Ghosh and others (2012a) identify surges based on net flows and document three stylized facts. First, surges have become more common in recent years—with the share of surge observations almost tripling from the 1980s to the last decade—and are synchronized internationally. Second, surges are relatively concentrated even in periods of high global capital mobility, with never more than half of the EMEs in the sample experiencing them at any point of time, and some experiencing them repeatedly. Third, the amount of capital received in a surge varies considerably across countries.

To explain these patterns, Ghosh and others (2012a) examine systematically the factors causing surges, and the magnitude of flows conditional on surge occurrence. Their results indicate that global factors, including U.S. inter-

est rates and global risk aversion, are key determinants of whether capital surges toward EMEs—which helps to explain why surges are synchronized internationally and why they recur. At the same time, whether a particular EME experiences a surge also depends on its own attractiveness as an investment destination; hence, pull factors—particularly, economic growth, external financing need, capital account openness, and institutional quality—matter, which explains why some countries do (and others do not) experience surges when aggregate flows toward EMEs rise. Although conditional on the surge occurring, pull factors—including the nominal exchange rate regime, extent of real exchange rate overvaluation, capital account openness, and external financing needs—are important in determining the surge magnitude, while global factors appear to play a limited role.

In addition, Ghosh and others (2012a) differentiate between surges caused mainly by changes in residents' liabilities (liability-driven surges), which are associated with the investment decisions of foreigners, and those caused by changes in foreign assets (asset-driven changes), which are associated with the investment decisions of domestic residents. They find that surges to EMEs are mainly liability-driven—though asset-driven net flow surges have been increasing in recent years. The factors driving the two types of surges turn out to be quite similar: lower U.S. interest rates encourage capital to flow to EMEs while increased global market uncertainty leads capital to flow out toward traditional safe-haven assets. Foreign investors are equally attuned to local conditions as domestic investors, but tend to be more sensitive to changes in the real U.S. interest rate and global market volatility, and are also more subject to regional contagion than domestic investors.

A related strand of literature examines the ending of surge episodes, and finds that they are associated with a higher likelihood of debt, financial, and currency crises (Reinhart and Reinhart, 2008; Furceri and others 2011). The domestic macroeconomic policy response over the surge episode however seems to matter in how a surge episode ends—for example, Cardarelli and others (2009) find that growth declines have been significant after episodes that are associated with fiscal expansions and greater resistance to exchange market pressures. Similarly, Ghosh and others (2012b) find that EMEs are more likely to experience a hard landing (defined as a reversal of net flows) when there is a deterioration of fiscal and external balances, and a domestic lending boom over the surge episode; but there is also some evidence that countries with higher foreign exchange reserves tend to experience a soft landing. Moreover, changes in global conditions matter—with an increase in U.S. interest rates, for example, raising the likelihood of a hard landing.

The research to date clearly points to the key role of global factors in pushing large flows of capital to EMEs. While improved fundamentals in EMEs—particularly relative to the advanced economies—imply that they are likely to remain attractive destinations to investors at least in the medium term; inasmuch as the global factors could reverse abruptly, some variability in capital flows appears inevitable. The challenge for policymakers is to craft the right mix of macroeconomic and prudential policies (including possibly temporary capital controls (Ostry and others, 2011)) factoring in whether the surge is liability- or asset-driven, and to formulate "rules of the road" to ensure multilaterally consistent policy responses, so that as the history of surges repeats, the consequences are more benign.

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with limited attention to transmission to LICs, including spillovers from major EMEs such as BRICs.

Several recent Fund studies, however, have examined the impact on LICs of the global financial crisis and the prospects for recovery. IMF research (2009; 2010) found that the shocks that reverberated around the globe in 2008–09 affected LICs mainly through real economy channels, primarily trade, foreign direct investment (FDI), and remittances; financial channels played a minor role because of the limited exposure of these countries to the financial sector in advanced economies. It was noted that the pace of recovery in LICs would vary across regions mirroring growth in their key trading partners.

Berg and others (2011) examined the short-run effects of the 2008–09 global financial crisis on growth in (mainly non-fuel exporting) LICs. They found that for many individual LICs, 2009 was not extraordinarily calamitous; however, aggregate LIC output declined sharply because LIC economies were unusually synchronized. They also found that the growth declines were on average well explained by the decline in export demand, and as the global economy recovered, their growth should rebound sharply. Compared to previous episodes of global crises, the terms-of-trade decline had a relatively small impact on LIC growth.

Neither the IMF (2009 and 2010) nor Berg and others (2011) differentiated the role of EMEs from that of advanced countries in determining the impact of the crisis and the pace of recovery. In these studies, the external shocks to LICs were mostly treated as global. However, the IMF studies did look at the impact of a global downturn on LICs in different regions based on these countries' regional trade shares. More recent IMF studies (2011f; 2011g) also differentiated commodity importers from commodity exporters in examining their vulnerabilities to exogenous shocks. The relative resilience of the BRIC economies during the 2008–09 crisis suggests that LICs' trade and financial ties with EMEs may have helped them cushion the severe contraction of import demand in advanced countries. Moreover, the mild terms-of-trade effect in 2009 compared with previous global crises owe to a large extent to the continued, albeit slower, growth of EMEs during the crisis.

In light of the ever-increasing importance of EMEs—BRICs in particular—for LIC economies, an IMF team undertook a major project to examine the growing linkages between LICs and BRICs—trade, FDI, and development financing. Key results of this project were summarized in an IMF paper (2011h), and reported in detail in several background papers (Mlachila and Takebe, 2011; Mwase, 2011; Mwase and Yang, 2011; Samake and Yang, 2011; Yang, 2011). Although the main focus of that project was to analyze the benefits as well as the challenges posed by the growing LIC-BRIC linkages, its detailed analysis of each of these linkages made it clear that the relationship is sufficiently strong to have a material impact on LICs' growth performance. In what follows, we summarize the key findings on growth spillovers based on Samake and Yang (2011).

"Several recent Fund studies, however, have examined the impact on LICs of the global financial crisis and the prospects for recovery."

The study by Samake and Yang employs several techniques to investigate the extent of business cycle transmission from BRICs to LICs through both direct and indirect channels. A global vector autoregression (GVAR) model is estimated to quantify the direct impact on LIC growth cycles of bilateral trade, FDI, productivity, and exchange rates, while a structural VAR model is used to estimate the effects of BRIC demand and technological change on global commodity prices, demand, and interest rates, which in turn affect growth in LICs. The indirect effect on LICs, obtained by feeding VAR results into the GVAR model, forms part of the overall spillover. Finally, an existing model (Berg 2011) is used to simulate the short-run impact of BRICs on growth in LICs during the global financial crisis.

The estimation results show that there are significant direct spillovers from BRICs to LICs. The most important direct channel of transmission is trade, although productivity improvements in BRICs and FDI flows from BRICs to LICs also matter. Trade accounts for around 60 percent of the impact on growth in LICs and is the most significant and persistent channel of transmission of shocks for all regions. The response in African LICs is particularly strong, reflecting the growing trade ties that these countries have forged with BRICs in recent years. The direct impact of BRICs' productivity changes, in turn, represents around 13 percent of the total impact. Asian LICs seem subject to the strongest impact of BRIC productivity change, probably reflecting the

closer integration of Asian LICs into global manufacturing supply chains, in which BRICs (particularly China and India) play a critical role. The FDI channel also matters but, compared with other spillover channels, its impact on LIC growth is more modest.

Spillovers from BRICs to LICs through global demand and price channels are also significant, though generally smaller than the direct spillovers. BRICs' demand and productivity growth exert considerable influence over changes in some global variables. Spillovers through world commodity prices are the largest in the short run, and those through global demand and interest rates are generally small or negligible. In particular, roughly one third of changes in world oil prices can be attributed to shocks originating in BRICs. Such indirect impact of BRIC demand and productivity through global markets accounts for around 30 percent of the total impact of BRICs on LIC growth.

The overall (direct and indirect) impact of BRICs on low-income-country growth appears to be both substantial and becoming larger. A 1 percentage point increase in BRICs' demand and productivity leads to 0.7 percentage point increase in LICs' output over 3 years and 1.2 percentage points over 5 years. These magnitudes are broadly similar to the direct impact of demand and productivity increases in advanced economies in the literature. (A forthcoming study by Dabla-Norris and others (2012) also reports similar estimates of the spillovers from a selected group of emerging market economies to LICs.) The impact has increased from the pre-2007 period; simulations show that LIC growth would have been 0.3 percentage point to 1.1 percentage points lower during the crisis had BRIC GDP declined at the pace at which advanced economies did.

These results have significant policy implications. They point to the potential that increasing linkages with BRIC economies could change the volatility of LIC growth in the short run and contribute to their sustainable growth rates in the long run. Particularly, increasing LIC-BRIC trade and financial ties will only strengthen their business cycle synchronization over time. As long as BRIC business cycles are not fully synchronized with those of advanced countries, these growing ties should help dampen growth volatility in LICs. Thus, in assessing the macroeconomic policy prospects and growth potential in LICs, greater attention should be paid to developments in BRICs and other EMEs as well as their linkages with LICs both via direct and indirect channels.

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Conversations with Visiting Scholars

Prakash Loungani Interviews IMF Fellow Olivier Coibion

Loungani: Congratulations on your selection as an IMF Fellow. Is this your first stint at a policy institution?

Coibion: Thanks, I'm thrilled to be here! I worked for a year at the CEA (U.S. Council of Economic Advisers) in 2000–01. It gave me an enduring sense of how economic theory and empirical methods can help address policy questions and make a difference in people's lives. And because I happened to be there during the transition from the Clinton to the Bush administration, it was fascinating to see the change in style and personalities—and in the dress code. The suits got much more sober and I even had to start wearing a tie once the Bush administration was in place.

Loungani: Dress is casual at the IMF over the summer. You will see the suits out in full force in the fall. What will you work on during your year here?

Coibion: I'll continue some of my work on inequality. One project will look at links between inequality and financial crises, which folks at the IMF have also studied. I've also been studying the impact of monetary policy on inequality—who gains, who loses when the Fed changes its policy. This gets debated in policy circles a lot, but not much in academia. Ron Paul says that expansionary monetary policies, or debasing the currency as he always puts it, raises income inequality; people on the left like Jamie Galbraith say the opposite.

Loungani: What do you find?

Coibion: Expansionary monetary policy has typically reduced U.S. inequality in the short run. This suggests that when the central bank can't cut interest rates any more—when rates hit the so-called "zero lower bound," as is the case at present—inequality will be higher than it would be otherwise. To avoid these additional increases in inequality at a time of crisis, the government should use other tools, such as targeted fiscal policies. I hope to do some more work on this while I'm here. More generally, I'll be studying how best to sequence fiscal and monetary policies when the multipliers—the impact of the policies on the economy—associated with each may vary with the state of the economy.

Loungani: Do you think the Fed has done enough to promote recovery?

Coibion: I think the zero lower bound [on interest rates] has certainly limited the size of their response. They would be lowering rates further if they could. But as the IMF's latest review of the U.S. economy noted, the Fed still has a few options to further support economic activity, given the weak

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state of labor markets and given the significant downside risks that still exist.

Loungani: Do you think that to avoid hitting the zero lower bound in the future, central banks should raise the target rate of inflation?

Coibion: No, I don't. A higher inflation rate also has economic costs. Therefore, raising the target inflation rate will confer the benefit that we'll be less likely to hit the zero lower bound. But such episodes are rare; and the high benefits conferred on rare occasions have to be balanced against the small but frequent costs of having higher inflation. In some of my research, it turns out that the costs consistently outweigh the benefits for inflation rates above 2 percent. So rather than raise the target rate of inflation to deal with future episodes like the Great Recession, I'd prefer the more aggressive use of temporary policies designed for precisely this kind of episode, such as additional quantitative easing or fiscal policy.

Some Recent Articles by Olivier Coibion

"The Optimal Inflation Rate in New Keynesian Models: Should Central Banks Raise their Inflation Targets in Light of the ZLB?" (with Yuriy Gorodnichenko and Johannes Wieland), forthcoming in *Review of Economic Studies*.

"Why Are Target Interest Rate Changes So Persistent?" (with Yuriy Gorodnichenko), forthcoming in *American Economic Journal: Macroeconomics*.

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Seven Questions on Monetary Transmission in Low-Income Countries

Prachi Mishra and Peter Montiel*

There are strong a priori reasons for believing that the monetary transmission mechanism in low-income countries (LICs) is fundamentally different from that in economies with more sophisticated financial systems. A review of the existing literature also suggests little confidence in the strength of monetary transmission in low-income countries. It is important to distinguish between the "facts on the ground" and "methodological deficiencies" explanations for the absence of evidence for strong monetary transmission. There is evidence that "facts on the ground" are an important part of the story. If this conjecture is correct, the stabilization challenge in developing countries is acute indeed, and identifying the means of enhancing the effectiveness of monetary policy in such countries is an important challenge. This piece addresses the main questions in the literature on the monetary transmission mechanisms in low-income countries.

Question 1: What are the assumptions underlying the discussion of monetary transmission in advanced countries?

As argued in Mishra, Montiel, and Spilimbergo (2012), the conventional description of monetary transmission relies on effective arbitrage along several margins: between different domestic short-term securities, between domestic short-term and long-term securities, between long-term securities and equities, between domestic and foreign securities, and between domestic financial and real assets. A discussion on monetary transmission is therefore clearly intended to apply to an economy with a highly developed and competitive financial system. As such, it implicitly assumes the following institutional setup, which is typically taken for granted in discussions of monetary transmission in advanced countries:

(i) A strong institutional environment, so that loan contracts are protected and financial intermediation is conducted through formal financial markets.
(ii) An independent central bank.
(iii) A well-functioning and highly liquid interbank market for reserves.
(iv) A well-functioning and highly liquid secondary market for government securities with a broad range of maturities.
(v) Well-functioning and highly liquid markets for equities and real estate.
(vi) A high degree of international capital mobility.
(vii) A floating exchange rate.

Question 2: Do we expect monetary transmission in a low-income country context to be different from what we are familiar with in industrial countries?

Yes. There are strong a priori reasons for believing that the monetary transmission mechanism in low-income countries (LICs) is fundamentally different from that in economies with more sophisticated financial systems. First, the complete absence or poor development of domestic securities markets suggests that both the short-run and long-run interest rate channels should be weak. Second, small and illiquid markets for assets such as equities and real estate would tend to weaken the asset channel. Third, in countries that are imperfectly integrated with international financial markets and tend to maintain relatively fixed exchange rates, the exchange rate channel would tend to be completely absent, or relatively weak.

Question 3: Which channel of monetary transmission, if any, is likely to be at play in low-income countries?

In general, the financial structure of low-income countries should lead us to expect the interest rate, asset, and exchange rate channels to be weak or nonexistent in such countries. By a process of elimination, the bank lending channel remains the most viable general mode for monetary transmission in LICs.

Question 4: What conditions would determine the strength of the bank-lending channels? Are these conditions likely to hold in LICs?

The relevant properties of the bank lending channel concern two links in the causal chain from monetary policy actions to aggregate demand: that between monetary policy actions and the availability and cost of bank credit, and that between the availability and cost of bank credit and aggregate demand. When the formal financial sector is small, as is true in the vast majority of low-income countries, the second of these links is likely to be weak. But the link between

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monetary policy actions and the availability and cost of bank credit may be weak as well. Specifically, the literature suggests that bank-lending channels may be undermined by two factors: (i) if the banking industry is noncompetitive, changes in banks' costs of funds may be reflected in bank profit margins, rather than in the supply of bank lending. (ii) If a poor institutional environment increases the cost of bank lending, banks may conduct lending activity in a manner that weakens the effects of monetary policy actions on the supply of loans.

Question 5: Is there any cross-country evidence on the strength and reliability of the bank-lending channel in LICs?

Mishra, Montiel, and Spilimbergo (2012) examine broad cross-country differences in the links between central bank policy actions and bank lending rates by computing some simple correlations among the relevant financial variables in advanced, emerging, and low-income economies. They focus on the association between central bank policy rates and money market rates, as well as that between money market rates and bank lending rates. In doing so, they seek to unearth suggestive empirical regularities, rather than to identify specific causal relationships. They find a much weaker link between the policy instrument and market rates in LICs than for advanced and emerging economies, both in the short and in the long run. The short-term partial correlation between money market rates and lending rates is also significantly weaker among LICs than among either advanced or emerging economies, and while differences in long-term effects are not as pronounced, they remain weaker in low-income countries. Most importantly, changes in money market rates explain a much smaller proportion of the variance in lending rates in low-income countries than in either advanced or emerging economies.

Question 6: What does the country-specific evidence on monetary transmission in LICs suggest?

There is indeed a large VAR-based empirical literature examining the effects of monetary policy innovations (as measured through a variety of monetary policy variables including, but not limited to, policy interest rates) on aggregate demand (as indicated by the behavior of output and/or prices) in a large number of individual LICs. This literature does not restrict the specific channels through which monetary policy may affect aggregate demand. Mishra and Montiel (2012) conclude that it is very hard to come away from their review of the evidence with much confidence in the strength of monetary transmission in low-income countries. They fail to uncover any instances in which more than one careful study confirmed results for the effects of monetary shocks on aggregate demand that are similar to the consensus effects in the United States or other advanced countries. The question is how to interpret this state of affairs. As suggested by Egert and Macdonald (2009) (for the case of transition economies in Central and Eastern Europe), it is likely to reflect some combination of the "facts on the ground" and shortcomings in the empirical methods that have been applied to this issue.

We suspect, however, that "facts on the ground" may indeed be an important part of the story. The failure of a wide range of empirical approaches to yield consistent and convincing evidence of effective monetary transmission in low-income countries, and that the strongest evidence for effective monetary transmission has arisen for relatively prosperous and more institutionally-developed countries such as some Central and Eastern European transition economies (at least in the later stages of their transition) and countries such as Morocco and Tunisia, make us doubt whether methodological shortcomings are the whole story.

Question 7: So, what are the policy implications?

We interpret the evidence in Mishra, Montiel, and Spilimbergo (2012), as well as that of the broader VAR-based literature, as creating a strong presumption that in the financial environment that tends to characterize many LICs, monetary policy is likely to have both weak and unreliable effects on aggregate demand. If this is true, the stabilization challenge in developing countries is acute indeed, and identifying the means of enhancing the effectiveness of monetary policy in such countries is an important challenge.

When domestic monetary policy is weak and unreliable activist policy is less desirable, and the adoption of policy regimes that raise the stakes associated with attaining publicly-announced monetary objectives should be postponed or their design should be modified to take the uncertainty about monetary policy effects into account. In addition, weak and unreliable monetary transmission diminishes arguments for floating exchange rates as well as for capital account restrictions under fixed exchange rates.

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Seven Questions on Monetary Transmission in Low-Income Countries *(continued from page 9)*

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