

# Diverging Monetary Policies, Global Capital Flows and Financial Stability

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## 2015 Conference Summary

**When:** Oct. 15–16

**Where:** Hong Kong Monetary Authority, Hong Kong

**Sponsors:** Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute, Hong Kong Monetary Authority, the European Central Bank and the Board of Governors of the Federal Reserve System



The Globalization and Monetary Policy Institute co-sponsored a conference, “Diverging Monetary Policies, Global Capital

Flows and Financial Stability,” jointly with the Hong Kong Monetary Authority (HKMA), the European Central Bank (ECB) and the Board of Governors of the Federal Reserve System Oct. 15–16. Papers were selected by an organizing committee consisting of Stephen Cecchetti (Brandeis University), Hongyi Chen (HKMA), Luca Dedola (ECB), John Rogers (Board of Governors) and Mark A. Wynne (Federal Reserve Bank of Dallas).

Peter Pang, deputy chief executive of the HKMA, delivered the opening remarks, noting the timeliness of the conference as the Fed was poised to raise rates (which it subsequently did in December), and the ECB and Bank of Japan were very much in accommodative mode. While normalization in the United States was signaled well in advance, he said the concern in many emerging-market economies was macroeconomic imbalances that had developed in those economies in the exceptionally low-interest-rate environment that has prevailed since the end of 2008. How those imbalances would be resolved was also worrisome.

Stronger fundamentals and limited currency and maturity mismatch in foreign liabilities should make Asian emerging-market economies better able to deal with a reversal of capital flows. But the weaker global economy and the slowdown in China will present challenges, as will the greater globalization of the region’s financial markets.

The sharp divergence in developed-world monetary policies is best shown in the

paths of Fed and ECB shadow policy rates in 2015 (*Chart 1*).

Researchers Jing Cynthia Wu and Fan Dora Xia, of the University of Chicago Booth School of Business and Merrill Lynch, respectively, estimate a short-term shadow policy rate using a term structure model that takes into account longer-term interest rates. Thus, this shadow rate can be used as an indicator of monetary policy when the actual short-term rate is constrained by the zero lower bound. The goal of many nonconventional monetary policy actions, such as forward guidance and the bond-buying quantitative easing measures in recent years, has been to lower longer-term interest rates. By lowering these long-term rates, the central bank engages in monetary easing that could be represented by a reduction in the shadow policy rate. The chart shows that over the course of 2015, the shadow federal funds rate went from -3 percent to 0 percent, coinciding with the Fed’s interest rate increase in December. At the same time, the ECB began a quantitative easing policy, and during 2015, the ECB’s shadow policy rate went from 0 percent to -4 percent.

Pang’s remarks were followed by the opening keynote address, delivered by ECB Vice President Vítor Constâncio. Constâncio focused on monetary policy spillovers, specifically the medium-term impact of such spillovers, which he noted were not well understood. Spillovers from U.S. monetary policy are relatively large, he argued, due to the dominant role of the dollar in the global financial system.

Central banks have domestic mandates for price and financial stability, but they also have a role to play in stabilizing the global

financial system. While there is substantial literature that finds that by focusing on domestic mandates in a rules-based manner, central banks can best achieve global stability, Constâncio argued that simply keeping their own houses in order is no longer enough to ensure stability in our new, globalized world. He concluded by arguing that global challenges require both domestic and global responses and cautioned against complacency.

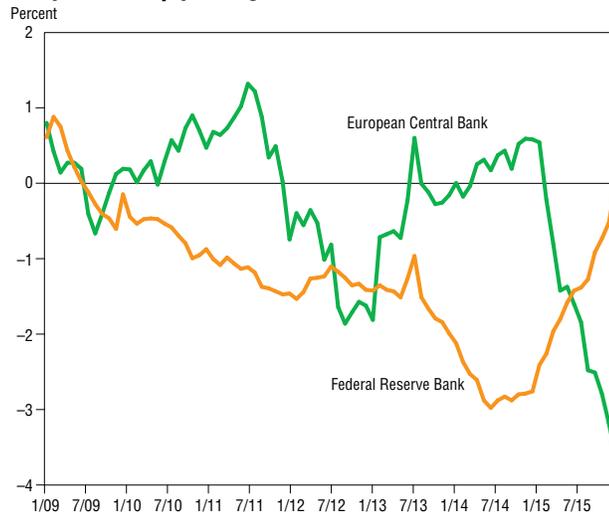
### Expanding Capital Flows

Central to all stories about the spillovers of monetary policy are international capital flows that have grown at an extraordinary rate with the onset of financial globalization. In the first paper presentation of the conference, “The Two Components of International Portfolio Flows,” Frank Warnock of the University of Virginia, along with co-authors Shaghil Ahmed and Stephanie E. Curcuru from the Board of Governors and Andrei Zlate from the Federal Reserve Bank of Boston, showed that when it comes to international portfolio flows, there are two parts that must be distinguished: an active component and a passive component.

The active component is the one that reflects decisions made in the present, while the passive is capital flowing to destinations based on decisions made in the past. For example, the active component of a capital flow occurs when an investor actively sells one asset to purchase another. An example would be a U.S. investor selling Brazilian equities and using the proceeds to purchase Mexican equities. The passive component of capital flows is the new savings that are allocated based on preexisting portfolio weights. An example would be an investor who saves a given percentage of his income each month and allocates a fixed percentage of those savings to Brazilian and Mexican equities.

Warnock and his co-authors propose a measure to distinguish between the two components, the so-called normalized relative weight. They use this measure to see if the distinction between the two types of flows matters.

Chart 1  
Shadow Fed Funds Rate and Shadow European Central Bank Policy Rate Sharply Diverge in 2015



SOURCE: Wu and Xia (2014).

Viewing the active and passive components together would suggest that emerging-market economies' (EMEs') capital flows massively increased after the global financial crisis of 2007–09; thus, the share of U.S. foreign portfolio investment in EMEs increased.

However, when Warnock and his co-authors isolate the active component of flows, this shift isn't apparent. They then use simple reduced-form regressions to examine the drivers of the two components of flows. They find that the Chicago Board Options Exchange (CBOE) Volatility Index, or VIX, matters for both types of flows but is less significant for portfolio reallocations, suggesting that the VIX is mainly capturing an income effect. They also find that capital controls (or capital flow management measures) are sometimes significant when considering total flows but are never significant when considering active flows, suggesting that capital controls do not affect active portfolio decisions but instead work through valuation changes.

During discussion of the paper, it was noted that a potential caveat accompanying the analysis is an implicit assumption that passive flows are completely on autopilot. While that

may be true to an extent, investors at least make a rational decision not to rebalance their portfolios. Thus, passive flows may be directed by decisions made in the past but are only passive because of a decision made now not to change previous allocation decisions.

The second paper in the capital flows session, “Capital Flows and Domestic Financial Market Structure,” was presented by Signe Krogstrup of the Swiss National Bank and co-authored with Linda Goldberg of the Federal Reserve Bank of New York. Krogstrup and Goldberg pose a pair of questions in their paper: How do capital flows respond to global risk, and what determines this response?

To answer those questions, they construct a Global Risk Response (GRR) index that measures the correlation between a country’s exchange rate pressure index (a weighted average of exchange rate depreciation and change in reserves over a period) and the VIX. A positive GRR means that a country’s currency appreciated during times of high risk and was the recipient of safe-haven capital flows. They then look at what factors drive a country’s GRR and find that

a country’s gross foreign asset position has a strong effect, particularly on gross foreign portfolio assets.

If a country has a large stock of foreign portfolio assets, its GRR is higher. Based on their findings, Krogstrup and Goldberg argue that capital flows by residents and changes in domestic financial market structures may play a more important role in a country’s capital flow response to a global risk shock than previously thought. However, as noted in the discussion of the paper, their findings rest on an empirical analysis of what happens with asset positions. A more complete picture would incorporate the response of international liabilities as well.

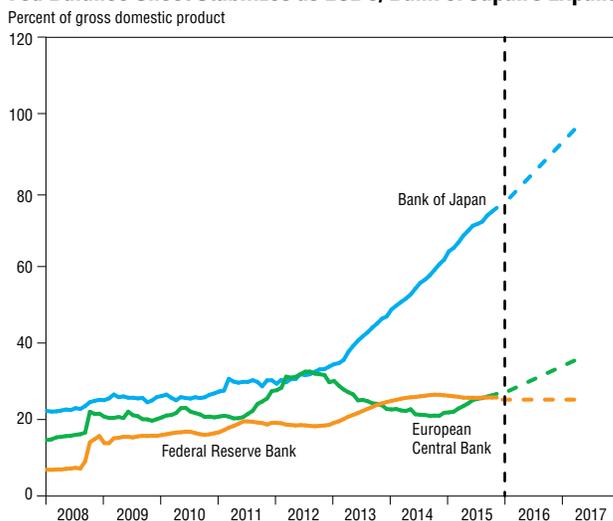
### Global Liquidity and the Dollar

The second session addressed the issue of global liquidity. There has been a dramatic increase in U.S. dollar liquidity in the global financial system since the financial crisis, and there is keen interest in understanding what will happen to dollar credit as the Fed begins to remove monetary policy accommodation. Eric Wong of HKMA, along with co-authors Dong He of the International Monetary Fund (IMF) and Andrew Tsang and Kelvin Ho of HKMA, asked in their paper, “Asynchronous Monetary Policies and International Dollar Credit,” how a divergence of unconventional monetary policies in the U.S. relative to the euro area and Japan affected the supply of international dollar credit.

The sizes of central-bank balance sheets since the crisis—measured as a percentage of gross domestic product (GDP)—are shown in Chart 2. The Fed’s balance sheet stabilized in 2014. Meanwhile, the Bank of Japan’s balance sheet has increased rapidly since 2013, coinciding with the adoption of its new quantitative easing policy; the ECB’s balance sheet has been expanding since the beginning of 2015. The chart presents the forecasts for balance sheet expansion through March 2017, assuming that current quantitative easing policies by the ECB and the Bank of Japan remain unchanged.<sup>1</sup>

Wong and his co-authors note that much

Chart 2  
**Fed Balance Sheet Stabilizes as ECB’s, Bank of Japan’s Expand**



NOTE: Dashed lines indicate projected balance sheet positions.  
SOURCE: National central banks; Organisation for Economic Cooperation and Development; Haver Analytics; authors’ calculations.

of the international lending in dollars is actually intermediated by European and Japanese banks. So while the Fed could tighten, if the ECB and the Bank of Japan continue to loosen, European and Japanese banks would be more likely to lend, mitigating some of the effect of Fed tightening on U.S.-dollar credit. They show in their empirical work that while the Fed's expansionary monetary policy was the primary driver of dollar credit growth in Japan and Europe in 2013, by 2015, the Fed's balance sheet alone should have led to a decline of international dollar credit. However, because of continued balance sheet expansion by the ECB and the Bank of Japan, dollar credit actually increased.

Foreign-currency-denominated bond issuance by corporations in EMEs surged in the wake of the global financial crisis as firms sought to take advantage of low interest rates in advanced economies. The scale of the bond issuance has given rise to concerns that these liabilities may become a source of problems for EMEs as monetary policy accommodation is removed. Two of the biggest issuers of foreign-currency-denominated bonds are Brazilian energy company Petrobras and Russian natural gas producer Gazprom. Both encountered difficulties in 2015. However, these problems were not due to a currency mismatch between their liabilities and revenues, as both companies were perfectly hedged in terms of their dollar exposure. Rather, they encountered difficulties due to the energy price collapse.

Soyoung Kim of Seoul National University and Hyun Song Shin of the Bank for International Settlements examined how global liquidity is transmitted to EMEs in their paper, "Offshore EME Bond Issuance and the Transmission Channels of Global Liquidity." They argue that we are seeing possible shifts in these transmission channels. According to their analysis, a U.S. credit shock has a positive effect on EME GDP and a negative effect on interest rates. This is consistent with what many others have found. They also find that the same shock has a positive effect on bond issuance in EMEs.

More importantly, the researchers find that bond issuance response has changed over time. Splitting their sample into precrisis (2000–06) and postcrisis (2010–14) periods, they find that a U.S. credit shock had a positive effect on onshore bond issuance in the precrisis period and no effect on offshore issuance. In the postcrisis period, the same shock had no effect on onshore issuance and a positive effect on offshore issuance. While the onshore/offshore distinction sheds some light on potential vulnerabilities, it does not get to the crucial question of the currency of denomination.

Before the global financial crisis, conventional wisdom on capital controls was that they were largely detrimental and ought to be avoided if at all possible. In the aftermath of the crisis, there has been a rethinking of the usefulness of capital controls, with the IMF noting that "... in certain circumstances, capital flow management measures can be useful."

Furthermore, in a widely cited paper, Hélène Rey (2015) argued that the classic trilemma of international finance had morphed into a dilemma, and that in an era of financial globalization, "...independent monetary policies are possible if and only if the capital account is managed."

In their paper, "Capital Controls and Monetary Policy Autonomy in a Small Open Economy," Scott Davis of the Dallas Fed and Ignacio Presno of the Universidad de Montevideo ask how the use of capital controls affects the conduct of optimal monetary policy in a small open economy that is subject to surges in capital inflows. In recent years, many EMEs, including many with formally floating currencies, have used monetary policy to manage the capital account. Davis and Presno study optimal monetary policy in a standard small open-economy dynamic stochastic general equilibrium (DSGE) model and show that using the domestic monetary policy instrument to manage the capital account can even be optimal under certain circumstances.

Measures to restrict capital flows (whether optimal or not) significantly im-

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prove the ability of the central bank to use its monetary policy instrument to satisfy domestic objectives, knowing that these capital controls limit the effect of destabilizing capital flows.<sup>2</sup> In his presentation, Davis was careful to note that the analysis in his paper is a positive, not normative analysis. The question is how using capital controls affects the conduct of optimal monetary policy, not whether capital controls are optimal or not. In the discussion that followed, several important avenues for future research were identified. For example, are capital controls simply addressing a symptom of a problem rather than the fundamental issue itself, which in the Davis–Presno model is a credit constraint? A related question is why some small open economies are more comfortable than others with letting the exchange rate handle the adjustment to capital flows.

The final paper for the first day was “International Capital Flows and Unconventional Monetary Policy,” by Curcuru, Chiara Scotti and Aaron Rosenblum of the Board of Governors. It was presented by Curcuru. Most studies of the effects of unconventional monetary policy examine the impact on asset prices, while relatively few focus on the effects on capital flows. Curcuru and her co-authors use an event study approach to document the response of international capital flows to an announcement of an unconventional monetary policy action such as a large-scale asset purchase program. An important innovation in the paper is the use of high-frequency data on capital flows from Emerging Portfolio Fund Research (EPFR). The primary finding is that unconventional monetary policy actions by advanced-economy central banks do not seem to result in excess capital flows to emerging-market economies.

### **Transmission Channels and the Trilemma**

The second day of the conference began with a presentation of “Risk Taking and Interest Rates: Evidence from Decades in the Global Syndicated Loan Markets,” by Viktors

Stebunovs from the Board of Governors, co-authored with Seung Jung Lee from the Board and Lucy Q. Liu from the IMF. The idea of a risk-taking channel for monetary policy has gained currency in recent years as central banks pushed interest rates to their effective lower bound.

The idea behind this channel is that as the Fed cuts rates, banks have an incentive to make riskier loans in search of yield. Stebunovs and his co-authors argue that there are really two risk-taking channels—one that operates through a short-term cost of funds channel and the other that operates through a returns-on-safe-assets channel. They are primarily interested in how active a channel is internationally. When the Fed cuts rates, is there riskier lending to non-U.S. borrowers? If so, this means that a non-U.S. central bank may have limited controls on the credit cycle in its own country.

To capture the riskiness of lending, they proxy for average borrower riskiness by using the average lending spread over Libor (the London interbank offered rate). They then regress this spread on the federal funds rate as well as the 10-year Treasury bond rate to quantify the two channels. In the 1995–2007 period, they find that increases in the federal funds rate had a negative effect on the risk spread for syndicated loans to non-U.S. borrowers (evidence that this risk-taking channel is active internationally), but changes in the 10-year Treasury rate had no effect. In the post-2008 period, increases in the 10-year Treasury rate had a negative effect on spreads, evidence of the safe-returns risk-taking channel. Of course, the risk-taking channel is potentially operative for the actions of central banks other than the Fed, and the authors noted that in ongoing work, they are looking to document the effect in other currencies.

The penultimate paper of the program, “International Financial Spillovers to Emerging Market Economies: How Important Are Economic Fundamentals?” by Ahmed and Brahim Coulibaly of the Board and Zlate of the Federal Reserve Bank of Boston, was presented by Zlate. It is widely believed that

EMEs with stronger fundamentals (low debt, strong growth and sustainable public finances) are better placed to deal with financial market volatility in times of economic stress. Zlate and his co-authors ask whether the differing economic fundamentals of EMEs can explain their heterogeneous responses to the global financial crisis.

They construct a vulnerability index (which includes current account, external liabilities and foreign exchange reserves) and show that this index had an effect on financial performance during the 2013 taper-tantrum episode—the period of rapid Treasury yield increases that followed indications the Fed would end quantitative easing. Simply put, EMEs with better fundamentals saw less of a deterioration in their financial markets during this episode. They also found some evidence of a similar effect during earlier episodes. One caveat to their findings: They are based on a very small number of observations.

The conference concluded with a presentation of “Trilemma, Not Dilemma: Financial Globalisation and Monetary Policy Effectiveness,” by Georgios Georgiadis, co-authored with Arnaud Mehl, both of the ECB.<sup>3</sup> Georgiadis and Mehl revisit the question posed by Rey (2015)—namely, does increasing financial globalization reduce the ability of a central bank to conduct monetary policy targeted at domestic objectives? Put differently, does financial globalization mean that a central bank no longer has control of long-term interest rates and that long rates are driven by global factors?

They point out that while monetary transmission is weakened by “global financial cycle effects,” it is simultaneously strengthened by net foreign currency exposure effects (the Fed tightens to cool the U.S. economy; the dollar appreciates; U.S. households with net positive foreign currency exposure in their assets are poorer, which creates a wealth effect that will reduce consumption spending in the U.S.).<sup>4</sup> They find evidence that both these effects are active, so the impact of financial globalization on the monetary transmission mechanism will depend on the

relative strength of the two effects.

To assess the strength of the monetary transmission mechanism, they estimate impulse response functions. They then regress the trough response of GDP to a monetary policy shock on net foreign exchange exposure and gross external assets and liabilities as a share of GDP and show that the two variables are significant and with the expected signs. They calculate the strength of these two channels in the euro area, other advanced economies and EMEs and argue that the net effect is around zero in the euro area—perhaps some evidence that financial globalization has weakened the monetary transmission mechanism—but the effect has led to a stronger monetary transmission mechanism in both other advanced economies and EMEs.

## Conclusions

Cross-border investment positions have grown steadily over the past 15 years and did not diminish in any meaningful sense in the aftermath of the global financial crisis. Flows to EMEs increased after the crisis as policy rates were reduced to their effective lower bound in the advanced economies and investors reached for yield. U.S. monetary policy, in particular, spills over to EMEs, with potential implications for macroeconomic and financial stability in those countries as U.S. policy normalizes.

As Stephen Cecchetti noted in his conference lunch remarks, the world effectively has two dollar-based financial systems—one based in the U.S. that is backed by the Fed, and another outside the U.S. that has effectively no central-bank backing. Cecchetti argued that global financial stability will require a global U.S. dollar safety net, and the semi-permanent swap lines that five foreign central banks have with the Fed go some of the way toward providing that safety net.<sup>5</sup> How well those swap lines will work in practice remains an open question.

## Notes

<sup>1</sup> Specifically, for the forecasts of the size of the balance sheet past 2015, we assume that the ECB will continue to expand the size of its balance sheet by 60 billion euros per month through March 2017, which is the stated end of the ECB's quantitative easing measures. This is a balance sheet expansion of about 7 percent of GDP per year. The Bank of Japan will continue to expand its balance sheet by 80 trillion yen per month through at least March 2017. This is a balance sheet expansion of about 16 percent of GDP per year.

<sup>2</sup> Davis' essay “The Trilemma in Practice: Monetary Policy Autonomy in an Economy with a Floating Exchange Rate,” which is on page 2 in this annual report, addresses this very same topic, especially the fact that in recent years, there is evidence that EME central banks with a floating currency still tend to use their domestic monetary policy to manage the capital account.

<sup>3</sup> This paper was also presented at the conference that the institute co-sponsored with the Swiss National Bank in Zurich in July 2015, summarized elsewhere in this report.

<sup>4</sup> For a formal model of this channel, see Meier (2013).

<sup>5</sup> For more detail on the role of the swap lines during the global financial crisis, see the contributions by Stephen Cecchetti and Donald Kohn to the Bordo and Wynne (2016) volume.

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