



Economic Letter

Emerging-Market Debtor Nations Likely to Follow Fed Rate Boosts

by J. Scott Davis

ABSTRACT: A Federal Reserve interest rate increase can lead to capital flows reversing and exiting emerging markets. Central banks in emerging markets that are highly dependent on outside capital will be tempted to match the Fed increase in an attempt to curb capital flight.

Mexico's central bank, Banco de México, rescheduled its monetary policy meetings in 2015 to occur immediately after those of the Federal Reserve. Mexican policymakers knew that the Fed's liftoff from a near-zero interest rate policy was imminent, and they wanted to be in a position to increase their own extraordinarily low rates as soon as their northern counterpart acted.

Mexican central bankers sought to prevent a sudden shift in capital that would result in a sharp depreciation in the peso.¹ When the Fed increased interest rates by 25 basis points (0.25 percentage points) on Dec. 16, Banco de México matched it with a 25-basis-point boost on Dec. 17.²

The tendency for a central bank in an emerging market to mimic the monetary actions of a central bank such as the Federal Reserve is well-documented.³ Usually, the intention is to forestall a shift in capital flows that would lead to a sharp appreciation or depreciation of the currency.

In a country with a pegged exchange rate, matching monetary policy actions is virtually automatic.⁴ But this tendency to mimic monetary policy actions has also been documented in countries such as Mexico with a floating exchange rate,

where the central bank is not constrained by the need to maintain an exchange rate peg and theoretically can set monetary policy as it sees fit.

Recent history provides clues regarding which emerging-market central banks seem poised to follow the Fed in tightening monetary policy. During the so-called "taper tantrum" of 2013, some emerging-market central banks were forced to act to support the value of their currencies in response to an expectation that the Fed would soon end its extraordinarily accommodative monetary policy.

The Taper Tantrum

During congressional testimony in May 2013, then-Fed Chairman Ben Bernanke first indicated that the central bank might curtail its large-scale asset purchase program known as QE3, which involved Fed purchases of Treasuries and mortgage-backed securities. Shock waves rippled through international markets; the suggestion of tapering was interpreted to mean that the days of loose U.S. monetary policy were soon ending.

Earlier, because rates were very low in the U.S., many analysts believed Fed monetary policy had prompted investors searching for higher yields to redirect capital to emerging-market countries.

This surge in capital inflows led to a sharp appreciation in currency and asset values in the recipient countries.

Once the Fed ended QE3, the reasoning went, a capital-flow reversal would occur, leading to a sharp drop in currency and asset values across the emerging world. Savvy investors would be smart to sell emerging-market assets ahead of Fed action. This led to a wave of capital outflows and triggered a crisis in many emerging markets in mid-2013 that became known as the taper tantrum.

In a bid to attract or retain capital fleeing in the expectation of higher U.S. interest rates, many emerging-market central banks raised their interest rates

following the Bernanke comments. The path of the weighted average of policy interest rates across many emerging-market countries is shown in Chart 1.⁵ The tapering statement marked the end of a two-year easing cycle across emerging markets that began in mid-2011.

In the year following the chairman's May 2013 announcement, emerging-market policy rates increased an average of 87 basis points. But this average masks considerable heterogeneity in monetary tightening among emerging markets. Countries with a deficit in their current account—the broadest measure of trade and investment—tightened quickly and sharply. Emerging-market countries with

a deficit had raised their policy rate an average 140 basis points, while those with a surplus had boosted their policy rate an average of 30 basis points.

In late summer 2013, a group of the larger countries with current account deficits was dubbed the “fragile five.”⁶ A current account deficit needs to be financed by a positive net inflow of capital. Thus, the expectation that capital flows would reverse with the U.S. policy change meant that central banks in the deficit countries found it necessary to raise interest rates to retain foreign capital.

Forms of Deficit Financing

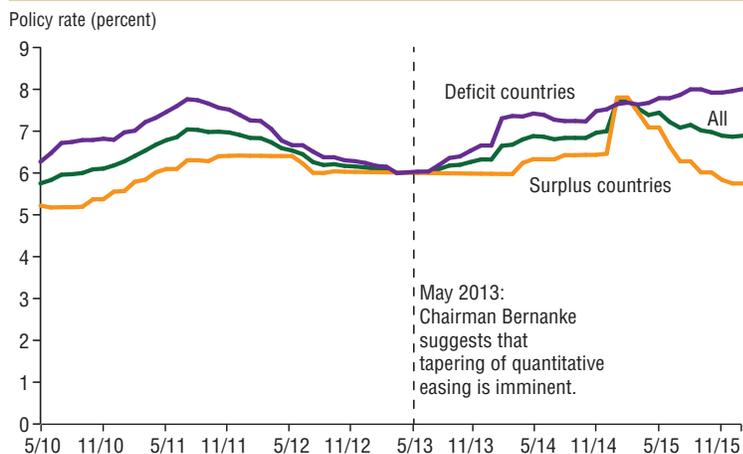
The current account is simply the negative of net capital inflows. Thus, a country with a current account deficit must have positive net capital inflows. But these capital inflows can come in many forms. Capital inflows can be in the form of foreign direct investment or equity—for example, when an American firm builds a factory or takes a stake in a company in Mexico. Or they could be in the form of debt—when an American investor buys the bonds of a Mexican company, or when Banco de México brings capital into Mexico by selling U.S. Treasuries it owns.

Equity capital inflows tend to be much more stable than debt-based inflows. It is much easier for foreigners to pull out of an investment by selling a bond than by selling a factory.

Recent research has shown that central banks in countries with a debt-financed current account deficit are much more likely to move their interest rate in concert with the Fed than policymakers in countries with a current account deficit financed by equity inflows. Chart 2 plots the path of the policy interest rate in the emerging markets, broken down by countries with positive net debt inflows and those with negative net debt flows.

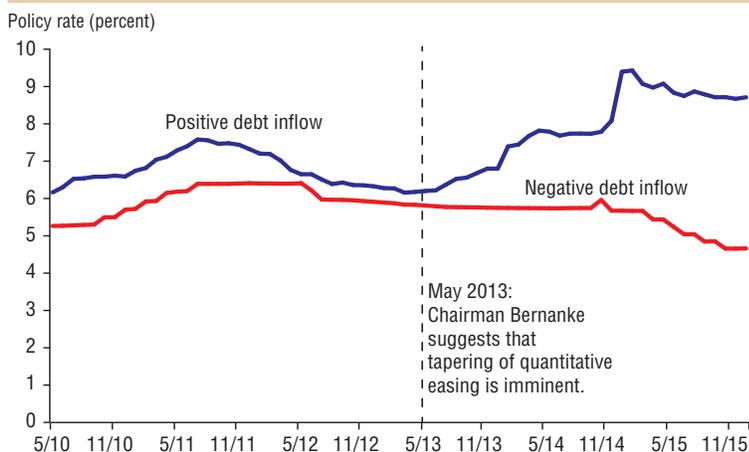
Those with positive net debt inflows were countries that at the time of Bernanke's tapering comments relied on foreign debt inflows. Central banks in those countries sharply tightened monetary policy immediately after the tapering announcement, while central banks in countries with negative net

Chart 1 Current Account Shapes Emerging-Market Responses to Possible Fed Tightening



SOURCES: International Monetary Fund; Haver Analytics.

Chart 2 Rates Rise in Emerging Markets with Positive Net Debt Inflows



SOURCES: International Monetary Fund; Haver Analytics.

debt flows did not. In the year following the Bernanke statement, central banks in countries with positive debt inflows raised interest rates an average of 165 basis points, while those with negative debt flows lowered rates an average of 9 basis points.

If emerging-market countries are divided into those with positive net equity inflows and those with negative net equity flows, this strong dichotomy disappears (*Chart 3*). Countries with positive net equity inflows still relied on inflows of foreign capital; because this capital was based on equity and not debt, there was much less fear of capital flight. In the year following the tapering announcement, countries with positive equity inflows raised policy interest rates an average of 84 basis points, while countries with negative equity flows boosted rates an average of 101.

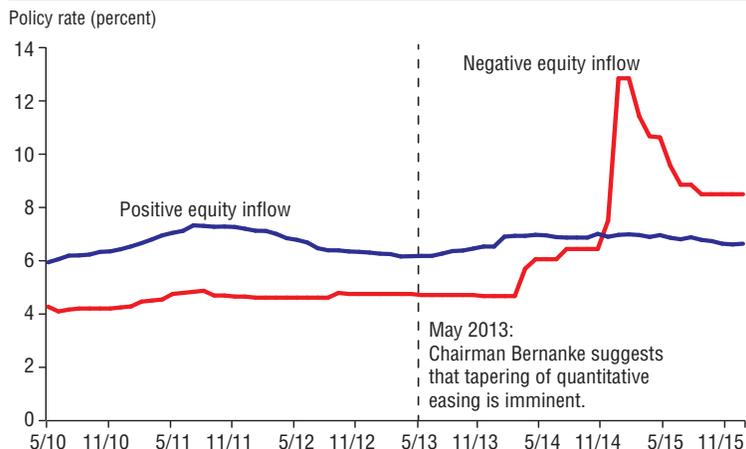
The large spike in policy rates in late 2014 for countries with negative net equity flows is entirely due to Russia, which raised interest rates by 750 basis points in December 2014. Russia had a current account surplus in 2014. The central bank was forced to act dramatically in late 2014 following a sharp fall in foreign-exchange reserves (attributable to an abrupt decline in debt-based capital inflows) due to the falling price of oil—the main Russia export—and the effects of sanctions in response to the military conflict in Ukraine. Thus, Russia provides a textbook example of how a central bank faced with a sharp fall in capital inflows may opt to increase the policy interest rate to curtail capital flight.

2016 and Beyond

Because many emerging-market central banks will be tempted to follow the Fed and tighten monetary policy, a greater reduction in global liquidity could occur than if U.S. central bankers acted alone. Thus, it's useful to consider countries likely to move in tandem with the Fed in the future.

Current account and net debt inflows as a percent of gross domestic product (GDP) in 2014 are presented in the first two columns of Table 1. Also shown are the estimates from an empirical model that illustrates the co-movement

Chart 3 Policy Rate Slower to Rise when Equity Inflows Defray Current Account Deficit



SOURCES: International Monetary Fund; Haver Analytics.

Table 1 Emerging Countries' Policy Rates Depend on Type of Capital Inflow

	Current account in 2014 as percent of GDP	Net debt inflows in 2014 as percent of GDP	Implied co-movement with U.S. interest rate with debt, equity investment treated identically	Implied co-movement with U.S. interest rate with debt, equity investment considered separately
Turkey	-5.83	4.39	0.26	0.27
South Africa	-5.45	3.77	0.26	0.26
Peru	-3.96	2.91	0.26	0.26
Nigeria	0.22	2.06	0.24	0.28
Russia	3.26	1.68	0.22	0.29
Mexico	-1.85	1.59	0.25	0.25
Indonesia	-3.09	1.25	0.25	0.24
Costa Rica	-4.36	1.15	0.26	0.23
Colombia	-5.17	1.03	0.26	0.22
Brazil	-4.28	0.89	0.26	0.22
Malaysia	4.28	0.70	0.22	0.28
Chile	-1.16	0.08	0.24	0.23
India	-1.36	-0.31	0.24	0.22
Argentina	-1.08	-0.46	0.24	0.22
Thailand	3.81	-1.17	0.22	0.25
Poland	-2.04	-1.34	0.25	0.20
Philippines	3.84	-2.71	0.22	0.22
China	2.13	-3.29	0.23	0.20
Hungary	2.20	-5.82	0.23	0.16

SOURCES: International Monetary Fund; Haver Analytics; author's calculations.

between a country's policy interest rate and the U.S. federal funds rate as implied by the country's dependence on foreign capital inflows the previous year.

The model draws on data from nearly 100 countries from 1992 to 2011. Simply

put, given a 1 percentage-point increase in the U.S. interest rate, how much does an emerging market change its policy rate? The model also attempts to quantify how a country's net capital flows might affect the tendency for a central

bank policy interest rate to move with that of the U.S.

The table's third column shows the implied co-movement when debt- and equity-based capital flows are treated equally—that is, merged into a net capital inflows aggregate, or the negative of the current account. The fourth column presents the results when debt- and equity-based capital flows are treated separately, and thus, when net debt flows and net equity flows are each allowed to influence policy.⁷

The countries in the table are ordered by net debt inflow as a percent of GDP in 2014. Countries most dependent on foreign debt financing top the list.

Measuring Differences

The results in the third column show that the model-implied co-movement is higher in countries that have a current account deficit and, thus, depend on net capital inflows—quantitatively, from top to bottom, the differences are not large. Turkey at the top of the list has a model-implied co-movement of 0.26; Hungary at the bottom registers 0.23. The virtually indistinguishable differences across emerging economies may suggest that the tendency of their central banks to tighten after the Fed does has very little to do with net capital inflows.

The *composition* of those flows in the fourth column, however, tells a different story. The implied co-movement is greater in countries that depend on positive net debt inflows, and crucially, the difference is much greater between the

countries at the top of the list and those at the bottom. Turkey at the top has a model-implied co-movement of 0.27; Hungary at the bottom registers 0.16.

It follows that, due to their dependence on debt inflows, central banks in countries such as Turkey and South Africa are much more likely to vary their interest rates in concert with the Federal Reserve than countries like Hungary or China, which do not depend on net debt inflows from the rest of the world.

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Notes

¹ "Bank of Mexico Reschedules Policy Meetings Around Fed Calendar," by Anthony Harrup, *Wall Street Journal*, July 1, 2015, www.wsj.com/articles/bank-of-mexico-reschedules-policy-meetings-around-fed-calendar-1435781494.

² Mexico subsequently raised its policy rate 50 basis points on Feb. 17, 2016, independently of any U.S. central bank action. The move came amid volatility in the global market for oil, a key export, and the falling value of the peso relative to the dollar.

³ See "The Effect of Fixed Exchange Rates on Monetary Policy," by Jay C. Shambaugh, *The Quarterly Journal of Economics*, vol. 119, no. 1, 2004, pp. 301–52; "The Trilemma in History: Tradeoffs Among Exchange Rates, Monetary Policies, and Capital Mobility," by Maurice Obstfeld, Shambaugh and Alan M. Taylor, *Review of Economics and Statistics*, vol. 87, no. 3, 2005, pp. 423–38, and "Rounding the Corners of the Policy Trilemma: Sources of Monetary Policy Autonomy," by Michael W. Klein and Shambaugh, *American Economic Journal: Macroeconomics*, vol. 7, no. 4, 2015, pp. 33–66.

⁴ Hong Kong has a tight exchange rate peg with the U.S. dollar, and Bulgaria has a tight peg with the euro. As a result, neither the Hong Kong Monetary Authority nor the Bulgarian National Bank has any independent monetary policy-setting authority; they simply mimic the respective interest rate actions of the Federal Reserve and the European Central Bank.

⁵ Countries included in the average (in order by net debt inflow as a percent of GDP in 2014) are Turkey, South Africa, Peru, Nigeria, Russia, Mexico, Indonesia, Costa Rica, Colombia, Brazil, Malaysia, Chile, India, Argentina, Thailand, Poland, Philippines, China and Hungary. These are the emerging-market countries in the Federal Reserve Bank of Dallas' G40 database, excluding Venezuela and Bulgaria.

⁶ The fragile five were Brazil, India, Indonesia, South Africa and Turkey. Broadly defined, the current account is the sum of the balance of trade (goods and services exports less imports), net income from abroad and net current transfers.

⁷ The results are taken from "Economic Fundamentals and Monetary Policy Autonomy," by J. Scott Davis, Federal Reserve Bank of Dallas, Globalization and Monetary Policy Institute Working Paper no. 267, 2016. Details of the specific regressions that produce the estimates in columns 3 and 4 are presented in this paper. In the model in which the two forms of capital—debt and equity—are treated the same, the difference between any two implied co-movements in column 3 is statistically indistinguishable from zero with a probability of 8 percent. The analogous probability for the co-movements when the two forms of capital are treated separately, as reported in column 4, is 1 percent.



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