Monetary Policy "Contagion" in the Pacific Basin: A Historical Inquiry

Linda Tesar

Thank you for the opportunity to discuss this thought-provoking paper on monetary policy in emerging markets by Professor Edwards. As Professor Edwards clearly explains in the paper, his objective is to estimate the impact of changes in the U.S. federal funds rate on monetary policy in emerging markets. The sample for his analysis consists of six emerging markets—three Latin American economies (Chile, Colombia, and Mexico) and three Asian economies (Korea, Malaysia, and the Philippines). The data are weekly over the period January 2000 through June 2008. The central question is whether there has been a "contagion" of U.S. monetary policy to emerging markets through the "import" of Federal Reserve policies. The extent of contagion is measured by the reaction of the foreign central bank, as reflected in the Taylor rule, to a change in the U.S. policy rate.

Before turning to the specifics of the analysis, it might be useful to place the monetary regimes in the six emerging markets in some context. In general, the countries included in the study had independent central banks and were inflation targeters. During this period, financial markets were becoming more tightly integrated with the rest of the world. Across the six countries there was variation in the extent of exchange rate management, ranging from relative exchange rate flexibility to a dollar peg in Malaysia. Despite the official focus on inflation targeting, however, one doesn't have to look far beyond official policy statements to realize that the exchange rate was an important policy variable and that international conditions and the size of foreign-currency reserves placed significant constraints on monetary policy choices. This is important because, to the extent other things matter that aren't in the Taylor rule as specified in the paper, we might be concerned that the methodology is not picking up all of the signals and constraints that affect monetary policy choices in emerging markets.

The paper estimates an error correction model that captures the relationship between the foreign country's policy rate and a number of variables

and their lags that enter into the central bank's policy rule. Those variables include the lagged foreign policy rate (level and rate of change), the U.S. federal funds rate, the foreign country's inflation rate, the expected depreciation of the exchange rate, and a measure of expected U.S. inflation. Contagion in this context is a significant coefficient on the U.S. federal funds rate after controlling for the factors listed above. Note that because the data are weekly, typical measures of economic activity such as GDP or unemployment that are available only at a monthly or quarterly frequency cannot be included in the regression.

The general findings are that the coefficient on the federal funds rate is significantly positive in both the set of Latin American and the set of Asian economies. In Latin America, "long-term policy contagion" (the dynamic spillover effects as estimated from lagged coefficients) is large; in Asia, it is significant but magnitudes are smaller. There is also weak evidence that countries with more capital mobility have greater "contagion" than countries with less capital mobility.

The paper interprets positive spillover effects—significant coefficients on the federal funds rate—as evidence of contagion. Specifically, to quote the paper (italics mine), "if, *for whatever reason*, a particular central bank feels that it needs to mimic (or follow) advanced countries' policy actions, then there will be policy 'contagion' and the actual—as opposed to theoretical—degree of monetary policy autonomy will be greatly reduced." This is a very strong statement regarding monetary policy contagion. In effect, if an emerging market changes its interest rate along with the Fed, this is defined as a "contagious" spread of U.S. policy and calls the emerging market's monetary autonomy into question. The conclusion rests strongly on the assumption that the error correction model is picking up all of the things that could make the policy responses correlated even when the central bank is pursuing independent monetary policy objectives.

This interpretation of the results raises the following question: are there other reasons that interest rates might move in concert, even after controlling for expected inflation differentials or expected exchange rate movements? Are there situations where the central bank in the emerging market is making autonomous and optimal choices, but shocks or external circumstances result in correlated policy responses? I can think of at least four possibilities, though there are likely many more.

First, financially integrated economies could experience common real shocks, such as the slowing of global growth, a shift in Chinese demand, or a fall in global oil prices. The estimation method controls for a number of financial variables but does not have real variables at a high (i.e., weekly) frequency.

While the expected exchange rate could, in principle, pick up some of the effect of the common shock, the difficulty in forecasting real and nominal exchange rates makes this unlikely.

Second, changes in expectations about the future, such as a downward revision in expected growth rates, could cause the United States to alter its path of interest rates. If emerging markets share those revised expectations about the future, it may be optimal to change interest rates along with the United States. Again, this would hardly indicate a contagious spread of U.S. monetary policy.

Third, news about future inflation or the exchange rate will trigger movements in the policy rate. In writing about monetary policy in Chile during the time period covered by this paper, De Gregorio, Tokman, and Valdés (2005) note that "first, monetary policy could be adjusted if the *new information modifies the expected path of inflation*. And second, news may trigger an intervention policy under exceptional circumstances, such as the adverse economic effects of an overreacting exchange rate." Such news about future variables may not be picked up under the current specification of the Taylor rule and may lead to a spurious inference that U.S. variables are driving the local policy rate.

A fourth reason that policy variables may move together is due to the transmission of shocks from one country to another. Canova (2005) adopts a vector autoregressive approach to identify shocks to U.S. demand, supply, and monetary policy on Latin American economies. He finds that the interest rate channel is a crucial amplifier of U.S. monetary disturbances, while the trade channel plays a negligible role. A contractionary U.S. monetary shock induces a significant and instantaneous increase in Latin American interest rates which, in turn, are accompanied by capital inflows, price increases, depreciation of the real exchange rate, and improvements in the trade balance. Given that the majority of domestic fluctuations in the continent are of foreign origin, he concludes that Latin American policymakers must carefully monitor international conditions to disentangle the informational content of U.S. disturbances in order to properly react to external imbalances. The question is, when the foreign central bank does this, is it contagion or is it an optimal response to foreign market conditions?

The discussion up to this point is predicated on the assumption that the Taylor rule is an accurate description of the monetary policy reaction function. There is much evidence that in many countries, for much of the time, the Taylor rule is a useful way to summarize monetary policy responses. However, there is also a good bit of evidence that central bankers reserve the right to deviate from the rule. As just one example, the Banco de la Republica listed the following as objectives of monetary policy in this period: to include stable inflation, to

maintain an adequate level of international reserves, to limit excessive short-run volatility of the exchange rate at short horizons, and to moderate exchange rate movements that endanger the financial and external stability of the economy. (See Chang 2007 for a summary of monetary policy in Latin America.) To the extent these additional goals are not captured by the specification of the Taylor rule, the model is misspecified and the evidence of policy "contagion" may simply be endogenous responses of the central bank to the external environment to attain policy objectives not included in the rule.

Finally, even when the Taylor rule is the "true" rule governing monetary policy, interest rates may *still* be correlated across countries. Since 2001, policy rates across industrialized countries with independent central banks have followed a steady downward path, even though few of those countries would say that they are importing their policy from abroad. In some recent work with Christopher House and Christian Proebsting (2015), we develop a multicountry model that includes the United States and countries in Europe, some with fixed exchange rates within the euro area and some with floating exchange rates outside of the euro area. We calibrate the economies to capture their relative size, their bilateral trade relationships, and the share of government in the domestic economy. All countries pursue a Taylor rule that specifies the nominal interest rates as a function of output, inflation, and the lagged interest rate. For the European Central Bank (ECB) rate, gross domestic product (GDP) is the weighted average of euro-area members' GDP and inflation. The central bank does not care about the exchange rate and is entirely backward looking. We consider a shock to the ECB policy rate. The change in the interest rate affects output and inflation in other countries, inducing changes in foreign interest rates (smaller, but in the same direction). In other words, there is a "contagious" spread of ECB monetary policy. I'm not suggesting that this model fully explains the results in Professor Edwards's paper. My main point is that ad hoc specifications will only take us so far and that it is important to understand the underlying shocks as well as the structural model before interpreting correlations as contagion.

So to conclude, the paper does a nice job of documenting the connections between U.S. and emerging market interest rates. Labeling such connections "contagion" is provocative, but I'm not sure it's fully convincing. In order to call such effects contagion, one needs to control for all of the factors that would result in a co-movement of policy rates. The results would also be more convincing if the analysis explicitly controlled for episodes of intervention. Policy rates responded to other factors such as a desire to manage the exchange rate and to accumulate the reserves during this period. Finally, I think it is

possible to generate policy rate co-movements in models where central banks are autonomous and place no weight on the exchange rate. The transmission of shocks through trade and financial markets can result in interest rates moving together. It is important to control for those automatic transmission mechanisms before drawing strong conclusions about the lack of autonomy in central bank policy.

REFERENCES

Canova, Fabio. 2005. "The Transmission of US Shocks to Latin America." *Journal of Applied Econometrics* 20(2), pp. 229–251.

Chang, Roberto. 2007. "Inflation Targeting, Reserves Accumulation, and Exchange Rate Management in Latin America." In *Papers and Proceedings*, proceedings of the 2nd Annual International Conference of Economic Studies. Fondo Latinoamericano de Reservas (FLAR) and Latin American Development Bank (CAF).

De Gregorio, José, Andrea Tokman, and Rodrigo Valdés. 2005. "Flexible Exchange Rate with Inflation Targeting in Chile: Experience and Issues." IDB Working Paper 450.

House, Christopher, Christian Proebsting, and Linda L. Tesar. 2015. "Austerity in the Aftermath of the Great Recession." University of Michigan Working Paper.