Discussion of *Impact of International monetary policy in a FAVAR approach* by Elizabeth Bucacos

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The views expressed here do not necessarily reflect the views of anyone else in the Federal Reserve System.
Overview

- Interesting and Important Question. How does U.S. Monetary Policy Affect Foreign Economies? Here Uruguay is the test case.
- Technically sound work. Includes factors (a FAVAR) to control for other influences.
- Does not find strong effects of U.S. Monetary Policy on Uruguay.
What does U.S. monetary policy do to foreign economies?

<table>
<thead>
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<th>U.S. Policy</th>
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<td>U.S. Exchange Rates</td>
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<td>U.S. domestic demand</td>
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<td>Prices of risky assets</td>
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<td>capital inflows</td>
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Based on Ammer, De Pooter, Erceg, and Kamin (2016), who.

- Highlight that Foreign monetary policy can offset negative effects.
- Conclude that U.S. monetary policy pushes both foreign and U.S. activity in the same direction.
Direct Trade linkages seem small.

An open topical question: Does U.S. monetary policy have an out-sized effect on international trade given the role of the dollar as numeraire (aka vehicle currency) for international trade?
Wide use of the dollar in Uruguay may be an important factor.

Could limit the role of Uruguay’s monetary policy to offset effects.

**Private**

Bank deposits in the private banking system

- **Foreign currency**
- **Domestic currency**

Source: BCU and author’s calculations.

**Public**

- **Foreign currency denominated GPS debt over GDP**
- **Foreign currency denominated debt over total global public sector debt**

Source: BCU and author’s calculations.
Estimates the following VAR over a sample from 1995 to 2014

\[
\begin{bmatrix}
O^*_t \\
F_t \\
O_t
\end{bmatrix}
= B(L) \begin{bmatrix}
O^*_{t-1} \\
F_{t-1} \\
O_{t-1}
\end{bmatrix} + u_t
\]

- $O^*_t$ are U.S. interest rates.
- $F_t$ Factors that summarize other variables.
- $O_t$ Uruguayan variables of interest.
Empirical Specification

\[
\begin{bmatrix}
O_t^* \\
F_t \\
O_t
\end{bmatrix} = B (L) \begin{bmatrix}
O_{t-1}^* \\
F_{t-1} \\
O_{t-1}
\end{bmatrix} + u_t
\]

\(O_t^* = (FFR_t, T10_t)\)

\(O_t^* \quad FFR_t \quad \text{fed funds rate in real terms} \quad FF_t - \pi_t \quad FF_{t}^{SR} - \pi_t \)

\(T10_t \quad 10 \text{ year treasury bond in real terms} \)
Empirical Specification

\[
\begin{bmatrix}
O_t^* \\
F_t \\
O_t
\end{bmatrix}
= B(L)
\begin{bmatrix}
O_{t-1}^* \\
F_{t-1} \\
O_{t-1}
\end{bmatrix}
+ u_t
\]

\(O_t = (rer_t, UBI_t, i_t^p, p_t^h, y_t, pb_t)\)

\(O_t\)     \(rer_t\) | Change in Uruguayan Real Effective Exchange Rate
\(UBI_t\)  \(UBI\) | Change in Uruguayan country risk indicator
\(i_t^p\)   \(i^p\)  | Uruguayan passive interest rate deflated by domestic inflation
\(p_t^h\)   \(p^h\)  | House prices in pesos
\(y_t\)     \(y\)    | Change in Uruguayan GDP
\(pb_t\)    \(pb\)   | public sector balance
Commodity Prices: Changes in real prices of food, wheat, soybeans, and oil.
Foreign GDP: Argentina, Brazil, China
Foreign GDP: Germany, Italy, Spain, UK and Mexico.
Uruguayan variables: Domestic investment to GDP ratios, real domestic wages, unemployment, public debt to GDP, public assets to GDP, public assets-to GDP ratio, total public sector income and expenditures.

Get three factors.
One factor loads on commodity prices, the second on the advanced economies foreign GDPs, and the third on the emerging market GDPs.
Empirical Results

Output Growth

House Price Growth

House prices measured in local currency drop. Are house prices measured in U.S. dollar stable?
Identification

\[ u_{R,t} = FFR_t - B_{FFR_t(L)} \begin{bmatrix} O_{t-1}^* \\ F_{t-1} \\ O_{t-1} \end{bmatrix} \]

Any difference between the realized real federal funds rate and that predicted by lagged values of the included variables is a federal funds shock.

\[ u_{R,t} = \sigma u_{R,t} e_{R,t} \]

This is the maintained assumption throughout the paper.
Handbook treatment is to identify monetary policy shocks as being changes in the Federal funds rate that are not predicted from a regression that includes both contemporaneous values of U.S. GDP, inflation, commodity inflation as well as lagged values of these and additional variables. As such, the paper could try

\[
O^*_t = \begin{pmatrix} FFR_t \\ TR10_t \end{pmatrix} = \begin{pmatrix} FF_t - \pi_t \\ TR10_t - \pi_t \end{pmatrix}
\]

**Current**

**Proposed**

\[
O^*_t = \begin{pmatrix} \chi_{US}^t \\ \pi_t \\ \pi_{com}^t \\ FF_t \\ TR10_t \end{pmatrix}
\]
This may not fix the problem, as Elizabeth did share with me results from a reordered system. 

\[
\begin{bmatrix}
F_t \\
O_t^* \\
O_t \\
\end{bmatrix}
\]

Original

Reordered VAR

Similar GDP response, but with a tighter confidence interval.
An alternative identification approach arises from using high-frequency data. Identify a monetary policy shock using differences between realized outcomes and market expectations on the day of the FOMC meeting.

- John Rogers Chiara Scotti and Jonathan Wright *Unconventional Monetary Policy and International Risk Premia*

Both of these paper measure monetary policy actions that take place not through the federal funds rate but through quantitative easing.
Forward Guidance and LSAP Factors, 2009–2015

Estimated forward guidance factor
Estimated LSAP factor
Monetary Policy Divergence.

One issue that is discussed in recent remarks by the vice Chair was the importance of monetary policy divergence. To the extent that the foreign country needs monetary policy similar to the United States, U.S. tightening could be compatible. Foreign economies may be most affected by U.S. policy actions when monetary policy conditions are most divergent. This sensitivity may vary both by country and over time.
Monetary Policy Divergence Measured using a Taylor Rule

\[ R_{\text{Taylor}} = r^* + \pi^* + 1.5 (\pi - \pi^*) + 1 \times \text{Gap} \]
Much of the discussion here and in the literature has studied the effects of "all-else-equal" monetary policy actions (i.e. in isolation). But, frequently, monetary policy is reacting to other events. As a result, the effects of monetary policy in isolation can be more than offset by the effects of these other events. As highlighted, in Ammer, De Pooter, Erceg, and Kamin (2016), the important question is whether monetary policy is stabilizing.