International Spillover of U.S. Monetary Policy

Reuven Glick
Federal Reserve Bank of San Francisco

Remarks prepared for Panel Presentation
Conference on “Spillovers of Unconventional Monetary Policy”
Peterson Institute for International Economics, Washington, DC
October 15, 2015

Disclaimer: The views presented are mine alone and do not necessarily represent the views of the Federal Reserve Bank of San Francisco or the Board of Governors of the Federal Reserve System
Channels of International Transmission of U.S. Monetary Policy

• **Interest rate channel**
  – Effect of changes in U.S. current and expected short-term policy rate on foreign interest rates

• **Risk-taking channel**
  – Effect of Fed asset purchases on risk premia and longer-term rates through global portfolio substitution
    • E.g. Chen, Filardo, He, and Zhu (IMF, 2015)
    • Gilchrist, Yue, Zakrajsek (Jackson Hole, 2015)

• **International credit channel** (e.g. Rey, 2013; Shin et al 2014)
  – Effect on international bank lending and portfolio flows through use of $ as funding and investing currency.

• **Exchange rate adjustment**
  – Depends on exchange rate policy and flexibility
U.S. monetary policy has spillover effects through the exchange rate

LSAP1 day, 12/16/2008

US $ depreciated after US monetary easing “surprise”

Taper Tantrum Day 5/22/2013

US $ appreciated after US monetary tightening “surprises”
EME currencies also depreciated during the taper tantrum

$/FX Depreciation to Taper Tantrum,
May 22, 2013, 2 day window

$/FX, % Change
Foreign currencies respond strongly to Fed inactions as well.

Foreign currencies appreciated after US monetary easing “surprise” when Fed decided not to begin liftoff.
Outline

• Discuss recent research with Sylvan Leduc on effects of US monetary policy on the dollar

• Talk about implications for other countries
1. Examine the effects of U.S. monetary policy “surprises” shocks on U.S. dollar

2. Compare effects following announcements during
   • “conventional,” pre-crisis, policy period when federal funds rate above lower bound, and
   • “unconventional” policy period when federal funds rate at lower bound

3. Use intraday data to better isolate effects of announcements on exchange rates
1. Both conventional and unconventional period surprises about level and path of monetary policy have significant effects on the dollar exchange rate.

2. Effects during unconventional period announcements are much larger than those of during conventional period.
Empirical Analysis Details

• Use data from January 1994 through December 2014 on days of FOMC announcements and other selected days

• Use intraday data (+20m) on changes in short- and long-term interest rate futures to measure monetary target and policy path surprises

• Look at intraday (+20m, +60m, +1 day) responses of US$ rate against pound, Canadian $, euro, yen to better isolate the reaction to monetary announcements
Empirical Specification

- Use a simple pooled regression framework:

\[
\Delta S_{FX/$,t} = \alpha_1 TS_t + \beta_1 PS_{ST}^t + \gamma_1 PS_{LT}^t + D^{Unconv}(\beta_2 PS_{ST}^t + \gamma_2 PS_{LT}^t) + \epsilon_t
\]

- \(TS_t\) = Fed funds target surprise, i.e. \(\Delta\) in Fed Funds futures
  (e.g. Kuttner, 2002)

- \(PS_{ST}^t\) = short-term policy path surprise, i.e. \(\Delta\) in 1-year Euro$ rate
  (e.g. Gurkaynak, Sack, Swanson, 2005)

- \(PS_{LT}^t\) = long-term policy path surprise, i.e. PC of \(\Delta\)s in 2, 5, 10, 30 yr TBs
  (e.g. Wright, 2012)

- Estimate regression on 180 announcement days:
  - Between April 1994 to December 2014
  - Break dummy in November 2008
Dollar response to policy surprises larger during unconventional period

Depreciation of $ in response to Monetary surprises (1 stdev), +60m

![Graph showing depreciation of $ in response to monetary surprises.](Image)

Target, conven period
ST Path, conven period
LT Path, conven period
ST Path, unconven period
LT Path, unconven period

Dollar response to policy surprises larger during unconventional period

Dollar depreciates in response to monetary easing (+) surprises
US is not only country with spillover effects on global economy

EME currencies depreciated in response to Rmb depreciation Aug. 11, 2015
Extent of depreciation related to trade linkages with China

Greater share of trade with China → greater depreciation
Implications for other countries of higher US rates and appreciating dollar?

1. Price effect of more expensive imports raises domestic inflation
2. Capital outflow effect
3. Balance sheet effect raises foreign currency cost of dollar-denominated debt
4. Relative price effect makes foreign countries’ exports more competitive, depending on actions of competitors
5. Income effect of greater US demand on foreign country exports raises foreign output

Net Effect? Is 4+5 > 1+2+3?
What Does Empirical Literature Say?

• Net spillover effects are positive or neutral
  • e.g. Powell, Board of Governors, 2014; Arteta, Kose et al, World Bank, 2015

• Net spillover effects are negative, depending on country
  • e.g. Rajan, 2013; Taylor, 2014

• Risks?
  • Balance sheet exposure high because of corporate debt of nonfinancial firms in EMEs (IMF, WEO, Ch. 3, 2015)
  • Risk premia risk sharply
Lessons for Policymakers as US Normalizes its Monetary Policy