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Unconventional Monetary Policy and Cross-Border Spillovers

Remarks by

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Among students of central banking, the Great Recession will be remembered in part for the monetary policy innovation it prompted. Since 2008, we have seen several episodes of extreme financial conditions in major economies. In many countries, monetary policy has shouldered a large share of the policy response. Debt-deleveraging dynamics and disinflationary pressures have confronted policymakers in several economies with the classic challenge of providing accommodation when constrained by the zero lower bound. In contrast to the Great Depression, a number of central banks have found the “courage to act,” which has led to important policy innovation. While it will take many years for rigorous research to distill the lessons from this period, I will offer a few preliminary observations.<sup>1</sup>

### **The Effectiveness of Unconventional Monetary Policy**

For much of the period since 2008, many economies, including the United States, the United Kingdom, Switzerland, the euro area, and Japan, have been at or near the zero lower bound. Many economies have experienced depressed aggregate demand and large and persistent gaps between output and potential, which have led to significant reductions in the level of policy rates in order to achieve full employment and target inflation. Moreover, the neutral level of short-term risk-free rates looks to be much lower now in many countries than it had been previously. A lower neutral rate raises the likelihood that the requisite monetary accommodation when using conventional tools alone implies setting the nominal policy rate below zero. With constraints on moving nominal interest rates significantly below zero, central banks have looked to unconventional policy, such as asset purchases.

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<sup>1</sup> These remarks represent my own views, which do not necessarily represent those of the Federal Reserve Board or the Federal Open Market Committee.

The evidence suggests that unconventional monetary policy can be effective at overcoming the limitations on policy at the zero lower bound by operating through channels broadly similar to conventional monetary policy. A number of studies have suggested that the forward guidance and large-scale asset purchases conducted by the Federal Reserve boosted the levels of employment and inflation at a time when the level of short-term interest rates was constrained by the zero lower bound. For example, Engen, Laubach, and Reifschneider estimate that the Federal Reserve's forward guidance and asset purchase programs may have lowered the unemployment rate by as much as 1-1/4 percentage points and increased the level of inflation by 50 basis points.<sup>2</sup>

While conventional policy operates directly on the current and expected future path of overnight interest rates, and thereby indirectly influences longer-term interest rates, asset purchases are directly targeted at lowering yields on longer-term securities, which continue to have positive interest rates. In the so-called portfolio balance effect, the asset purchases reduce the supply of long-term Treasury and agency securities available in the market, which leads investors to bid up the price of remaining securities, thus lowering yields across a range of financial assets. Despite this difference, the channels through which asset purchases affect the economy appear similar to those of conventional monetary policy. The resulting reduction in interest rates spurs investment and purchases of consumer durables, lowers the exchange rate, and increases the prices of risky assets, such as equities.

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<sup>2</sup> See Eric M. Engen, Thomas T. Laubach, and David Reifschneider (2015), "The Macroeconomic Effects of the Federal Reserve's Unconventional Monetary Policies," Finance and Economics Discussion Series 2015-005 (Washington: Board of Governors of the Federal Reserve System), <http://dx.doi.org/10.17016/FEDS.2015.005>.

In addition, many have also emphasized an indirect effect through a “signaling channel.” By helping to shape expectations about the expected future path of the federal funds rate, asset purchases help reinforce forward guidance. Thus, asset purchases can affect longer-run interest rates by lowering the expected path of short-term rates as well as by reducing the term premium of long-duration securities.<sup>3</sup>

### **Spillovers from Unconventional Monetary Policy**

Turning to the cross-border effects, just as unconventional policy appears similar to conventional policy in its domestic effects, the analysis so far suggests that spillovers from unconventional monetary policy work through the same three channels as conventional monetary policy does.<sup>4</sup> First, when monetary policy in one country responds to a negative economic shock by easing, this action helps support domestic demand, which in turn will likely lead to greater demand for the exports of foreign countries. Second, monetary policy easing can also lead to a depreciation of the country’s foreign exchange rate, which switches domestic expenditures away from foreign exports. Finally, it eases conditions across financial markets in that country,

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<sup>3</sup> A number of observers have suggested that the market and macroeconomic effects of the initial asset purchase programs announced at the most intense period of the financial crisis may have been larger than the programs announced later in the recovery. The initial programs were important in bolstering confidence broadly and supporting liquidity in financial markets. The later asset purchase programs, particularly the flow-based program whose duration was tied to a substantial improvement in the outlook for the labor market, were important in signaling that the Federal Reserve was committed to taking all actions necessary to achieve its mandated objectives.

<sup>4</sup> For example, see David Bowman, Juan M. Londono, and Horacio Sapriza (2014), “U.S. Unconventional Monetary Policy and Transmission to Emerging Market Economies,” International Finance Discussion Papers 1109 (Washington: Board of Governors of the Federal Reserve System, June), [www.federalreserve.gov/pubs/ifdp/2014/1109/ifdp1109.pdf](http://www.federalreserve.gov/pubs/ifdp/2014/1109/ifdp1109.pdf); John H. Rogers, Chiara Scotti, and Jonathan H. Wright (2014), “Evaluating Asset-Market Effects of Unconventional Monetary Policy: A Cross-Country Comparison,” International Finance Discussion Papers 1101 (Washington: Board of Governors of the Federal Reserve System, March), [www.federalreserve.gov/pubs/ifdp/2014/1101/ifdp1101.pdf](http://www.federalreserve.gov/pubs/ifdp/2014/1101/ifdp1101.pdf); Joshua Hausman and Jon Wongswan (2011), “Global Asset Prices and FOMC Announcements,” *Journal of International Money and Finance*, vol. 30 (April), pp. 547-71; and Reuven Glick and Sylvain Leduc (2013), “The Effects of Unconventional and Conventional U.S. Monetary Policy on the Dollar,” Working Paper Series 2013-11 (San Francisco: Federal Reserve Bank of San Francisco, May), [www.frbsf.org/economic-research/files/wp2013-11.pdf](http://www.frbsf.org/economic-research/files/wp2013-11.pdf).

which can lead to financial easing in foreign markets when global financial markets are tightly integrated.

The spillovers are likely to be more positive the greater the expansion of domestic demand relative to the expenditure switching effect through the exchange rate and the greater is the easing of financial conditions. The magnitude of the relative cross-border effects from each of these three channels will depend on the size of the country that is easing monetary policy as well as its relative weight in international financial markets.

Since 2008, changes in the stance of monetary policy in major economies have often elicited strong reactions in other economies. Whether the global spillovers from changes in monetary policy were viewed as benign or challenging depends on the relative strength of the three transmission effects described earlier, the relative divergence of conditions in foreign economies, and the flexibility of their monetary policy tools to offset divergent spillovers.

To illustrate this point, let's start with a case where the effect of easing through unconventional means was broadly welcomed. From 2008 through 2009, the Federal Reserve eased policy through cuts in its policy rate and through large-scale asset purchases. That easing came in the context of a widespread global slump and severe strains in global financial markets, and in these circumstances it had significant positive international spillovers. The boost to domestic demand likely outweighed any effect via the exchange rate and contributed to an easing of U.S. and global financial conditions. Those positive spillovers were reinforced by widespread easing of conventional monetary policies by central banks across the globe in response to the depressed state of their economies.

In contrast, in 2010 and 2011, when the Federal Reserve undertook its second round of large-scale asset purchases, the global reaction was mixed. By that time, several emerging market economies were experiencing economic conditions close to full employment and strong credit growth. For many of the countries with divergent economic conditions, the combination of a market-based exchange rate and a firmly anchored monetary policy framework oriented around domestic objectives was sufficient to offset spillovers.

Others, however, saw the increased capital inflows associated with the divergence of conditions as presenting problems for the management of their own economies. One country in this category was China, which was experiencing an investment-led expansion accompanied by credit expansion.

Separately, several emerging market economies with relatively flexible exchange rates, particularly those experiencing expansions because of strong commodity prices, saw risks from the combination of capital inflows and upward pressure on exchange rates. Elevated inflows of foreign capital can present challenges in circumstances where prudential oversight and control of financial markets are not fully developed. Thus, countries such as Brazil worried that heavy capital inflows could lead to an undesirable loosening of credit conditions and leave the economy vulnerable to rapid reversals.

In the past two years, we have seen these concerns play out in reverse. During the “taper tantrum” in 2013 and again in recent months, an increase in expectations of policy divergence in the United States confronted economic policymakers in emerging markets with capital outflows and financial tightening against a backdrop of weakening economic growth and financial imbalances. For these economies, while exchange rate depreciation

can help offset weaker demand for exports and tighter financial conditions, it also puts upward pressure on inflation and may create problems for corporations with considerable foreign-currency denominated debt. In the case of China, a previously set course of tying the renminbi to the U.S. dollar led to an appreciation of the currency from mid-2014 to mid-2015 in an economy that was already slowing. Attempts to offset the effects of this undesired appreciation have had mixed results.

### **Discontinuity around the Zero Lower Bound**

If the research is correct in concluding that the channels for spillovers do not differ, these episodes should have played out little differently for conventional policy changes than they did for unconventional policy. That raises the question of why announcements of new policy actions around the zero lower bound have elicited such intense reactions. The launch of the Federal Reserve's second asset purchase program in November 2010, for instance, sparked a blistering response from several foreign policymakers. One foreign finance ministry official was famously quoted as denouncing it as "clueless," while others dubbed it the start of a "currency war." Officials from emerging markets with managed exchange rates argued that the United States "has not fully taken into consideration the shock of excessive capital flows to the financial stability of emerging markets."<sup>5</sup>

The reaction was just as striking--albeit in the opposite direction--when the Federal Reserve first announced its intention to taper asset purchases in 2013. The taper

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<sup>5</sup> See, for instance, Steven Hill (2010), "Germany Speaks Out," Op-Ed, *New York Times*, November 13, [www.nytimes.com/2010/11/13/opinion/13iht-edhill.html?\\_r=0](http://www.nytimes.com/2010/11/13/opinion/13iht-edhill.html?_r=0); Jonathan Wheatley and Peter Garnham (2010), "Brazil in 'Currency War' Alert," *Financial Times*, September 15; and Newsmax Finance (2010), "China: Fed Easing May Flood World Economy With 'Hot Money'," Newsmax Media, November 8, [www.newsmax.com/Finance/StreetTalk/China-Fed-Easing-Flood/2010/11/08/id/376288](http://www.newsmax.com/Finance/StreetTalk/China-Fed-Easing-Flood/2010/11/08/id/376288).

talk coincided with a broad reassessment of prospects in several large emerging markets in which some combination of financial, fiscal, and external imbalances had been building for some time. Spillovers through financial channels were immediate despite the fact that the anticipated reduction in asset purchases in the United States was expected to take place gradually sometime in the future.

My conjecture is that the widespread perception that unconventional monetary policy has large and disruptive spillovers may be a reflection of the discontinuity associated with discrete policy changes at the zero lower bound, along with greater uncertainty about the policy reaction function, rather than differences in the underlying channels of transmission. When policy rates are in a range comfortably above the lower bound, most of the major central banks confront a relatively narrow range of options in a relatively familiar framework of decisionmaking and communications. By contrast, over the past six years, decisions by major central banks to initiate asset purchases have neither been seen nor communicated as incremental adjustments, but instead as bold new initiatives whose cumulative intended scale, duration, or objective were announced at the outset, often against the backdrop of a public debate about the efficacy and appropriateness of various policy options.

For example, in its first two asset purchase programs the Federal Reserve committed to buying \$1.7 trillion and \$600 billion of assets, respectively, while in the subsequent flows-based program it committed to continuing monthly asset purchases until the outlook for the labor market had met a target for substantial improvement. Cumulative asset purchases averaged a little over \$1 trillion per program, which econometric estimates suggest contributed to sizable reductions in term premiums



embedded in long-term yields and a downward shift in the expected path of the federal funds rate. Similarly, in 2013, the Bank of Japan announced asset purchases at an annual pace of about 50 trillion yen and committed to continuing these purchases until inflation had moved up to 2 percent. The European Central Bank, at the beginning of this year, committed to buying 60 billion euros of assets each month at least through September of next year, or until inflation is on a path to get to close to 2 percent. In all of these cases, the policy actions themselves were large and designed to generate a significant easing in overall financial conditions, and the announcement effect likely was amplified because the policy reaction function around the zero lower bound was not well known and hence was difficult to anticipate.

### **International Coordination of Unconventional Monetary Policy**

The intense debates over cross-border spillovers of unconventional monetary policy during the crisis naturally elicited calls for global coordination of monetary policy to avoid beggar-thy-neighbor actions that could undermine growth globally. Recognizing the practical limitations of such proposals, in 2013, the Group of Seven (G-7) instead adopted a more circumscribed but achievable set of commitments. Each member committed that its monetary policy settings--unconventional as well as conventional--would be oriented to meeting its “respective domestic objectives using domestic instruments,” and “not target[ing] exchange rates.”<sup>6</sup> This agreement ensured that actions in the major advanced economies would be designed to provide accommodation targeted to supporting domestic demand, which would in turn support global demand--in contrast

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<sup>6</sup> HM Treasury (2013), “Statement by the G7 Finance Ministers and Central Bank Governors,” February 12, <https://www.gov.uk/government/news/statement-by-the-g7-finance-ministers-and-central-bank-governors>.

to classical demand-sapping beggar-thy-neighbor policies designed to shift demand by weakening the exchange rate. The agreement to use domestic policy instruments to support domestic output and inflation objectives is likely, on net, to be an important constraint against beggar-thy-neighbor policies, especially in the less charted territory of unconventional policy.

### **Implications for the United States**

Finally, it is worth considering what this implies for the United States. While traditionally the United States is viewed more as a source than a recipient of cross-border spillovers, recent events have demonstrated that U.S. economic and financial conditions can be sensitive to spillovers from advanced economies as well as from major emerging market economies. Over the past two years, we have seen divergences emerge among major economies in domestic growth prospects and the expected direction of monetary policy. Earlier in this period, the focus was on heightened deflationary risks in Japan and the euro area. The policy response to these pressures and the anticipated divergence between the policy trajectories in these economies and the United States contributed to a 10 percent real appreciation in the dollar against a basket of currencies through the spring of this year.

More recently, growth projections have been marked down for emerging market economies, which previously had been an important source of global growth. Increased recognition of the risks to the outlook for major emerging market economies pushed the dollar up further to 15 percent above its level last summer and contributed to a more general tightening of financial conditions over the summer. Much of the focus of investors and policymakers around the world has been on China, where the buildup of

past property bubbles, and more-recent stock market, bubbles, together with a steep run-up in business debt levels and questions about the policy framework, have raised concerns. In turn, growth has slowed both in many commodity-exporting countries whose exports are sensitive to Chinese demand as well as many non-commodity-producing East Asian economies that are tied to China through trade and investment and are important destinations for U.S. exports.

The feedback loop between market expectations of divergence between the United States and our major trade partners and financial tightening in the United States means that material restraint to U.S. conditions is already in place. Looking ahead, a further weakening of foreign growth could pose downside risks to the U.S. outlook. Under normal circumstances, policy in the United States could adjust to signs that spillovers from developments abroad were affecting activity in the United States. But with policy rates in the United States at the lower bound, the ability to offset spillovers from adverse developments in foreign economies with conventional policy is constrained, suggesting greater caution than normal.

In conclusion, the Great Recession has sparked innovative actions in a number of countries that have helped monetary policy escape the constraints of the zero lower bound. Just as it appears that unconventional monetary policy can provide accommodation domestically similar to conventional monetary policy, so too it appears that cross-border spillovers work through the same channels. Nonetheless, the discontinuity of discrete policy changes around the zero lower bound can amplify the effects. In response to heightened sensitivity around these spillovers, countries that have deployed unconventional policy have committed to do so in a way that targets domestic

objectives using domestic instruments, thereby helping to ensure their actions would support rather than sap global demand.