

The Global Impact of U.S. Monetary Policy

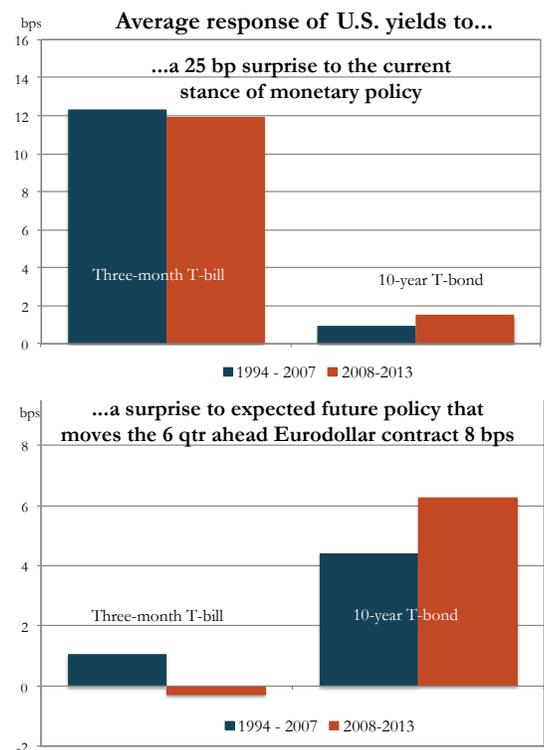
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Assets around the world react to U.S. monetary policy announcements. The response of asset prices to unconventional monetary policy actions, such as large-scale asset purchases and changes in forward guidance, is similar to when conventional policy is utilized, though there are some differences. For example, foreign bond yields are affected less than U.S. bond yields, particularly in response to changes in the Fed's current stance of monetary policy.

In the U.S., monetary policy changes the relative supply of particular assets in financial markets to influence interest rates in a manner that promotes the macroeconomic goals of maximum employment and price stability. Short-term interest rates have historically been adjusted via Federal Reserve interventions in short-term Treasury markets. In the aftermath of the financial crisis, however, the Federal Reserve has adopted unconventional measures that extend operations into markets of longer-term Treasury and mortgage-backed securities. In particular, large-scale asset purchases remove some of these assets from the market and thereby, reduce longer-term interest rates. Since investors arbitrage price differentials between assets with similar risk-reward profiles, monetary policy has the potential to affect the prices of a wide range of assets. Another monetary policy tool is forward guidance, which are communication efforts by the Federal Reserve intended to provide guidance about the likely stance of future monetary policy. Guidance about future policy can affect market expectations and impact longer-term interest rates. We study the response of equity markets, interest rates and exchange rates around the world to surprise changes in U.S. monetary policy, and compare the response when the Federal Reserve employs unconventional measures compared to more conventional policy actions.

The first step of the analysis is to produce a measure of monetary policy surprises. We measure policy surprises by comparing the price of financial assets whose payoffs are directly tied to current and future monetary policy immediately before and after monetary policy announcements. A statistical procedure averages price changes of federal funds futures contracts and Eurodollar contracts to produce two measures of monetary policy: the *current* stance and the *expected future* stance of monetary policy.

The chart on the right shows how yields on short- and long-term Treasury debt move after unexpected changes in current (top) and future policy (bottom). The top panel shows when current policy tightens by 25 basis points, the yield on the three-month Treasury bill also increases, but by only about 12.5 basis points. The 10-year T-bond is largely unaffected by changes in current Fed policy. The bottom panel shows the opposite response occurs to changes in future policy. Ten-year yields change following announcements about future policy, while short-term yields are unaffected. The blue bars show the average change in yields to current and expected future policy in a period when monetary policy is implemented through the conventional means of adjusting the federal funds rate. The orange bars show the response in a period



when policy is implemented primarily with unconventional tools. By comparing each blue bar to its neighboring orange bar, we see that the reaction of Treasury yields to monetary policy is largely unchanged since the adoption of unconventional policy.

The second chart displays the average change in yields on foreign sovereign debt of nearly 50 countries after U.S. monetary policy surprises. The response of foreign debt to U.S. monetary policy is similar to that of domestic yields, although with a smaller magnitude. Prior to 2008, short-term yields responded primarily to the current stance of policy. Comparing the blue and orange bars, yields on foreign sovereign debt responded much less to the current stance of U.S. monetary policy after 2008. This may reflect the global low interest rate environment. In contrast, the response of foreign interest rates to changes in expected future monetary policy is broadly similar since the introduction of unconventional policy tools.

Other assets also respond to U.S. monetary policy. For example, equity markets tend to decline after the Fed tightens current policy. Interestingly, the response of equity markets to expected future policy appears to have changed since 2008. Prior to 2008, equity markets declined when the FOMC signaled tighter future policy. Since 2008, the reaction is the opposite: equity markets tend to increase when the Fed signals tighter future policy. This change may reflect markets associating tight monetary policy in the future with a stronger economy. The value of the dollar is also affected by monetary policy. When the Fed raises either current or expected future interest rates, the dollar tends to gain value. The response of the foreign exchange market to monetary policy has become more volatile since 2008.

Finally, we compare the response of financial markets in emerging economies to those in advanced economies. On average, assets in emerging market economies respond to U.S. monetary policy similarly to assets in advanced economies. However, assets in countries with close financial and trade ties to the U.S.—such as Canada, Europe and Mexico—have the largest response to U.S. policy.

Overall, we confirm that monetary policy announcements affect asset prices worldwide. The impact of unconventional monetary policy does not appear to be substantially different than conventional policy. However, our analysis is limited in that it analyzes only price changes the day immediately following a monetary policy event. If, for example, the persistence of the response of asset prices to unconventional policy were different than in response to conventional policy—for example, due to a search for yield—our analysis would not capture this fundamentally differential impact on financial markets.

* For more, see *“Global Effects of U.S. Monetary Policy: Is Unconventional Policy Different?”* by Travis Berge and Guangye Cao in *Economic Review, Federal Reserve Bank of Kansas City: First Quarter 2014*. The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.

