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Central bank announcements of asset purchases and the impact on global financial and commodity markets

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A B S T R A C T

We present evidence on the effects of large-scale asset purchases by the Federal Reserve and the Bank of England since 2008. We show that announcements about these purchases led to lower long-term interest rates and depreciations of the U.S. dollar and the British pound on announcement days, while commodity prices generally declined despite this more stimulative financial environment. We suggest that LSAP announcements likely involved signaling effects about future growth that led investors to downgrade their U.S. growth forecasts lowering long-term US yields, depreciating the value of the U.S. dollar, and triggering a decline in commodity prices. Moreover, our analysis illustrates the importance of controlling for market expectations when assessing these effects. We find that positive U.S. monetary surprises led to declines in commodity prices, even as long-term interest rates fell and the U.S. dollar depreciated. In contrast, on days of negative U.S. monetary surprises, i.e. when markets evidently believed that monetary policy was less stimulatory than expected, long-term yields, the value of the dollar, and commodity prices all tended to increase.

1. Introduction

The financial crisis that started in the summer of 2007 led to the worst U.S. recession since the Great Depression and monetary policymakers responded by implementing unprecedented programs to stabilize financial markets and restore economic growth. By the end of 2008 the U.S. Federal Reserve had lowered the federal funds rate to near zero and communicated its intention to keep the rate low for an

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extended period. Constrained by the zero lower bound on nominal interest rates, the Federal Reserve also engaged in "unconventional" monetary policy, including the large-scale purchases of mortgage-backed securities and debt issued by Fannie Mae, Freddie Mac, and Ginnie Mae, in addition to buying longer-term Treasury securities. These actions led to a ballooning of the Federal Reserve's balance sheet which jumped to nearly $3 trillion by mid-2011, from $800 billion at the start of the crisis.

The financial crisis was clearly not confined to the United States and quickly traveled to Europe where central banks also introduced extraordinary measures to contain its effects. As in the United States, the Bank of England (BOE) initially lowered its policy rate and in March 2009, when the policy rate reached 0.5 percent, the Bank's Monetary Policy Committee announced that it would start buying public and private assets, as well as gilt Treasury securities. As in the United States, the Bank of England's asset-purchase program has been financed by the issuance of central bank reserves, leading to a sharp increase in its balance sheet. More recently, in the fall 2010, the Bank of Japan also announced a new asset-purchase program plan.

In this paper we present empirical evidence on the impact of these asset purchase programs on domestic as well as international financial asset prices in order to present a broad description of market reactions to announcements of large-scale asset purchases (LSAPs) by central banks in the midst of the recent financial crisis. More specifically, we study the joint reaction of long-term interest rates, exchange rates, and commodity prices. Commodity prices are forward-looking variables that in principal respond rapidly to worldwide economic news. In conjunction with the responses of other financial variables, they can help assess how market participants interpret new economic information.

To identify the market's reaction to LSAP announcements by the Federal Reserve and the Bank of England we need to correctly date when the market first learned about the central banks' intentions to intervene in financial markets. Starting with Gagnon et al. (2010), some papers have attempted to identify these announcements using central bank communications (see, for instance, Neeley (2010) and Krishnamurthy and Vissing-Jorgenson (2011)). In the case of the Federal Reserve, statements by the Federal Open Market Committee (FOMC) and speeches by Chairman Bernanke that provide indications about the Federal Reserve's intent to buy or sell assets in particular markets are typically used. Similar statements can also be exploited to identify news of large-scale asset purchases by the Bank of England. We follow an analogous strategy in this paper.

In addition to correctly dating when the news of asset purchases reached market participants, one also needs to control for market expectations when assessing the impact of the announcements on financial variables. To do so, we use the surprise component of monetary announcements constructed by Wright (2011) for the United States. Using high-frequency data and longer-term interest rate futures, Wright (2011) identifies a set of monetary policy surprises between 2008 and 2010, some of which are associated with news about LSAPs. For the U.K., we rely on the work of Joyce et al. (2010) who proxy market expectations using Reuters surveys of London City economists about their forecast of the total amount of asset purchases by the Bank of England.

We first show that U.S. asset purchase announcements generally brought about more stimulative financial conditions, lowering the 10-year U.S. Treasury yield and depreciating the dollar on days of LSAP announcements, particularly during the first round of the program (LSAP1) between November 2008 and the first half of 2010. These findings are consistent with those of Gagnon et al. (2010) and Neeley (2010). In our analysis, we also show that commodity prices tended to fall, on average, on announcement days, particularly during LSAP1. In particular, indices for energy prices and precious metals tended to decline significantly during this round of announcements. Our results suggest that market participants viewed LSAP announcements by the Federal Reserve as signaling lower future economic growth in the United States, which jointly lowered long-term interest rates, the value of the dollar, and commodity price on the days that policy news was released.

We find analogous results in the case of asset purchase announcements by the Bank of England. These announcements reduced U.K. interest rates and also depreciated the pound, similarly to the findings of Joyce et al. (2010), and had some, but relatively small, effects on commodity prices. Intuitively, economic developments in the U.K. economy should matter relatively less than those in the United States for global markets like commodities.

Our findings also show that the unconditional effects of LSAP1 on financial and commodity prices differ significantly from those following LSAP2. Krishnamurthy and Vissing-Jorgenson (2011) also