



The effect of monetary policy interventions on interbank markets, equity indices and G-SIFIs during financial crisis



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ABSTRACT

Since 2007, monetary authorities around the globe have reduced their key policy interest rates to unprecedented low levels and intervened with non-standard policy measures (i.e., monetary easing and liquidity provision) to support funding conditions for banks, enhance lending to the private sector and contain contagion in financial markets (e.g., European Central Bank, 2011). Using a detailed dataset of monetary policy interventions between June 2007 and June 2012 in the most advanced monetary areas (the Euro area, Japan, the U.S., the UK and Switzerland), we analyze their effects at three different levels, including (1) the interbank credit market, considering the 3-month LIBOR-OIS spread as a measure of financial distress (e.g., Taylor and Williams, 2009); (2) the stock market, represented by wide equity indices; and (3) the banking sector, focusing on global systematically important financial institutions (G-SIFIs). We demonstrate that different monetary policy interventions from single central banks have produced a diverse market reaction. Standard measures have been more effective than non-conventional ones in restoring the interbank market, which is fundamental for maintaining a fully operational traditional interest rate channel and for guaranteeing the normal functioning of financial intermediation. Non-traditional measures have registered a stronger stock market reaction with respect to standard interest rate decisions, both in terms of broad equity indices and single prices of large banks.

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1. Introduction

Since the financial crisis erupted in mid-2007, central banks throughout the world have run a wide set of monetary policy interventions using new instruments and techniques. The ultimate goal of monetary policy interventions implemented during the crisis has been to restore monetary stability and thus re-establish the stability of financial (and banking) systems. At the beginning of the financial crisis, central banks' interventions designed to contain the crisis seemed to be working. Although the losses in the subprime mortgage market were substantial, these losses seemed manageable, thereby leading most policy makers to hope that the worst was over and that the financial system would soon begin to recover (see Mishkin, 2010). However, a tremendous set of shocks was recorded in September 2008, such as the collapse of Lehman Brothers and AIG and the run on the Reserve Primary Fund (Mishkin,

2010). After these events, the financial crisis evolved into a global crisis generating a severe economic contraction. Overall, the financial crisis (labeled as “once-in-a-century credit tsunami”¹ by Alan Greenspan) seemed to sweep away the confidence in the ability of central bankers to successfully manage the economy (Mishkin, 2011, p. 30) as “central bank's success in stabilizing inflation and the decreased volatility of business cycle fluctuations made policy-makers complacent about the risks from financial disruptions”. The benign economic environment leading up to 2007, however, surely did not protect the economy from financial instability (Altunbas et al., 2010; Marqués-Ibáñez and Gambacorta, 2011). Indeed, it may, instead, have promoted excessive risk taking, causing the financial system to become even more fragile.

To face the crisis, the first answer of monetary authorities around the globe was to reduce their key policy interest rates to unprecedented low levels. In addition, to overcome the malfunctioning of the interbank market and keep the transmission mechanism through the interest rate channel fully operational,

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¹ Alan Greenspan described in Congressional testimony the financial crisis as a “once-in-a-century credit tsunami”.

they intervened with a number of non-standard policy measures, such as monetary easing and liquidity provision. Non-standard measures aimed to support funding conditions for banks, to enhance lending to the private sector, and to contain contagion in financial markets were implemented (e.g., ECB, 2011).

In this framework, our paper aims to answer the following central questions. (1) Which monetary policy interventions are more effective in restoring the normal functioning of the interbank market? (2) What is the effect of monetary policy interventions on equity markets? (3) What is the effect of monetary policy interventions on the stock prices of banks?

Specifically, we select a wide set of monetary policy interventions between June 1st, 2007 and June 30th, 2012, and we then estimate the market reaction around their announcement by focusing on three levels. Consistent with extant literature (e.g., Thorbecke, 1997; Ehrmann and Fratzscher, 2004; Bernanke et al., 2004; Gagnon et al., 2011; Swanson et al., 2011), we assess the effect of each monetary policy intervention by adopting an event study methodology. As outlined in Gagnon et al. (2011), the underlying assumption in such studies is that markets are efficient in the sense that all of the intervention's effects occur when investors update their expectations, not when actual measures occur. As a consequence and as highlighted in Swanson et al. (2011), a one- or two-day estimation window around a major macroeconomic announcement is sufficient to provide an unbiased estimate of the complete effect of that announcement. First, we estimate the impact on the 3-month LIBOR-OIS spread, consistent with Ait-Sahalia et al. (2012) as they estimate the impact on the interbank and liquidity risk premia. With respect to their study, this paper analyzes a much longer time interval (i.e., considering also the sovereign debt crisis). In addition, we measure a wider system effect with a focus on stock markets. To this aim, we first concentrate on broad equity indices (MSCI Switzerland, MSCI Japan, MSCI EMU, MSCI UK and MSCI USA) to capture the stock market in each monetary area (Switzerland, Japan, Euro area, the UK and the U.S., respectively). Second, we measure the impact on the stock returns of the 27 worldwide global systemically important financial institutions (G-SIFIs), as released by the Financial Stability Board on 4th November 2011.

The remainder of the paper is organized as follows: Section 2 provides a review of past literature and outlines the contribution of the paper; Section 3 describes the collection and classification of monetary policy interventions over the investigated period; Section 4 is devoted to the event study methodology applied to measure market reactions; Section 5 presents and discusses our main results. Finally, in Section 6 we draw our conclusions, outlining the limitations of this work and some directions for future research.

2. Past literature and contributions of the paper

Our paper brings together two strands of the existing literature. The first is the literature that assesses the impact of monetary policy interventions on stock markets. The link between monetary announcements and asset pricing is an important topic from the perspectives of both monetary policy makers and investors. From the monetary policy makers perspective, the asset price response to the Federal Reserve (or other central banks) policy is critical for understanding policy transmission mechanisms such as the influence of monetary actions on the monetary outputs and inflations through an indirect process based on financial markets (Bernanke and Kuttner, 2005). From the perspective of an investor, monetary policy interventions are fundamental as they are often associated with large stock price movements.

Responses to monetary policy announcements have been investigated with respect to stock prices and volatility (Bomfin, 2003; Ehrmann and Fratzscher, 2004; Bernanke and Kuttner, 2005; Chulià et al., 2010; Rangel, 2011; Rosa, 2011), international bond returns (Bredin et al., 2010), interest rates (Hausman and Wongswan, 2011; León and Sebestyén, 2012) and exchange rates (Hausman and Wongswan, 2011). While this literature has grown during the last decade, most papers (Bomfin, 2003; Ehrmann and Fratzscher, 2004; Bernanke and Kuttner, 2005; Chulià et al., 2010; Hausman and Wongswan, 2011; Rangel, 2011; Rosa, 2011) focus on the U.S. assessment of how central banks' interventions on interest rates relate to asset prices. There are, however, a few papers dealing with other currency areas (e.g., León and Sebestyén, 2012 analyze the ECB monetary policy; Bredin et al., 2010 consider the UK, U.S. and Euro areas).

The second strand of literature assesses the effectiveness of policy responses to the global financial crisis. In this case, the number of studies is much less than that for the former literature strand, and empirical analyses are generally quite narrow in scope, focusing on single measures in specific markets. For example, McAndrews et al. (2008) examine the effectiveness of the Federal Reserve's Term Auction Facility (TAF) in mitigating liquidity problems in the interbank funding market, while Baba and Packer (2009) analyze the effect of the swap lines among central banks in reducing the dollar shortage problem. It is worth emphasizing that the attention of researchers has recently moved from conventional to non-conventional measures. In this regard, Cecioni et al. (2011) provide a comprehensive review of contributions related to the impact of non-conventional measures on financial and macroeconomic variables, with reference to both the U.S. and the Euro area. The evidence suggests that these measures have been generally effective in reducing interest rates and in avoiding a larger collapse in output. Nevertheless, the authors emphasize that there is a substantial degree of uncertainty surrounding the precise quantification of these effects for several reasons, including the difficulties associated with capturing the role of non-conventional measures in contrasting credit rationing.

The key starting point for our research is the work of Ait-Sahalia et al. (2010, 2012) because, with respect to other studies investigating policy response to the financial crisis, their work assesses the effects on the credit market of a wide set of policy interventions in various countries. Specifically, Ait-Sahalia et al. (2012) examine the effect of policy announcements (fiscal and monetary policies, liquidity support, financial sector policies, and ad-hoc bank failures) on interbank credit and on liquidity risk premia in the U.S., Euro area, UK and Japan between June 2007 and March 2009. The authors assess the policy effect on the day-to-day changes in the 3-month LIBOR-Overnight Index Swap (OIS) rate spread whereby they consider the LIBOR-OIS spread as a proxy for the liquidity and counterparty risk premia in the global interbank markets. In summary, the authors show policy announcements were usually associated with reductions in the LIBOR-OIS spreads, but there is no policy action that is better than the others for containing the crisis.

Our paper contributes to the previous literature in several ways.

First, we extend the study of Ait-Sahalia et al. (2012) by considering the impact of both conventional and non-conventional monetary policy measures on the 3-month LIBOR-OIS spread (intended as a measure of financial distress, see Taylor and Williams, 2009) over a longer time period, that is, from June 2007 to June 2012. We believe this extension to be crucial in light of the most recent events that reveal that the global financial crisis did not end in March 2009 as supposed by Ait-Sahalia et al. (2012). Specifically, we intend to include three more years of observation, thus also covering the period of the Euro sovereign debt crisis.

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