Quantitative Easing Impact on Market Liquidity and Inflation

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Abstract. Quantitative easing (QE), mainly including large-scale purchasing, affects the market and economy by liquidity channel. This channel includes two aspects: loan supply and liquidity increases caused by large-scale purchasing. The influence of QE on liquidity is not clear enough. Also, whether such a liquidity creation will lead to inflation needs to be emphasized. This article provides an in-depth analysis of the impact of quantitative easing (QE) on liquidity creation and explores the potential relationship between QE and inflation. The article, based on investigating previous research, gives an overview of the process of quantitative easing's impact on liquidity creation through large-scale purchasing and lending channels. Meanwhile, the article discusses the possibility of quantitative easing leading to inflation. In conclusion, large-scale purchasing creates market liquidity by increasing loan supply and affecting the securities market. Furthermore, the investment shows that quantitative easing would not generate inflation. The article provides an overview of liquidity creation caused by QE and the potential possible relation between QE and inflation and provides a reference to the future.

Keywords: Quantitative easing; Market Liquidity; Inflation.

1. Introduction

Quantitative easing (QE), which is a most essential macro policy for central banks to stem financial crisis is a common and integral policy to stimulate the economy. As the global financial crisis emerged in 2008, most major central banks rapidly distributed policies for lower interest rates. Affected by the series of policies, the overnight federal funds were near to almost zero. Despite this, there is still no significant effect on economic growth, and the threat from the crisis, such as disinflation, remains. Aiming to handle such an unusual dilemma, the central bank, especially the Federal Reserve of the United States, came up with an approach, which included maintaining low interest rates (almost zero) and purchasing long-term security, known as quantitative easing (QE). As a consequence, these ways provided enough stimulus to boost the economy. Nowadays, this process, conducted by the Federal Reserve during the 2008-09 financial crisis, is known as QE1.

So far, there is a vast of literature that explains the effectiveness of quantitative easing. Fabo has mentioned that QE is more effective than academic expectations [1]. Kapoor explains that quantitative easing yields additional stimulus for boosting the economy when there exists a threat of disinflation [2]. Furthermore, they also mentioned that QE will generate larger effects on inflation. Christensen explains that as the stagnant economic situations caused by the epidemic, the Federal Reserve used aggressive easing methods to stimulate the economic [3]. There still exists the demand for how QE works to affect the market through liquidity channels.

Hence, this article aims to figure out the quantitative easing influences market liquidity, which will determine the tendency of economy and is highly affected by QE. On the one hand, low interest rates transfer inherent assets into liquid assets. On the other hand, the quantity of long-term security purchased by the central bank also led to higher market liquidity. Also, the article focuses on the potential consequences caused by QE: Though QE can provide additional stimulus to the market by increasing market liquidity, whether higher market liquidity will cause inflation will be perceived in the article.

2. Market Liquidity Creation

2.1. Basic Approaches of QE

As a general role, there exist two approaches to ease monetary policy—adjusting interest rates and changing the quantity of currency. Also, the achievement of QE is based on these two methods. In the initial step, the interest rates will be lowered by the central bank. Though QE is an unconventional means of macroeconomic regulation, this approach can still be considered as a relatively normal method. However, this approach is limited for market regulation because when the interest rates come to a low value (near zero), which represents that it is difficult to stimulate the market liquidity, but there are no signs of development in the economy, the central bank should still keep interest rates low. This also disables the ability to raise interest rates temporarily.

2.2. Significance of Creating Market Liquidity

Once the interest rates are cut to near zero, large-scale purchasing, including assets and credits, by the central bank, is the significant means of QE. The genuine intention of purchasing is to develop the market liquidity. With the liquid creation through QE, the central bank can use this injection to invest in more liquid assets. During the process, more liquidity in the market will be created that can stimulate the economy. However, there also exists other purposes of conducting QE, such as stabilizing the market and easing the financial burden on the government. For example, QE1, exciter in 2008 by the Federal Reserve, aimed to stabilize the market by purchasing GSE's direct liabilities. Another example is QE2, conducted in 2010, which mainly purchasing national debt, was aimed at relieving government fiscal deficits.

2.3. Main Approaches of Liquidity Creation

2.3.1. Lending through QE Creates Increase in Lending Supply

During the process of QE, the creation of market liquidity is achieved from two channels: the lending channel and the purchasing channel. Firstly, for lending channels, QE can easily lead to the increase of credit supply from bank lending. Through QE, the central purchases credit to the reserve account of a bank, which can create new reserves or deposits [2]. This can result in a shift of loan supply, which will increase the reserve of loan supply. So, the consequence is that more credits will be attributed through commercial banks so that liquidity will be created. Kapoor also provided evidence that the reserves and total deposits increased during QE1, QE3, and QE4 [2]. Luck showed in their article that QE3 induced extra commercial and industrial lending [4]. However, quantitative easing through the lending channel can also be implemented by another approach, such as reducing reserve requirement ratio. This approach can also lead to an increase in the mobility of the market. Once the central bank decreases the reserves requirement ratio, the deposits for lending will increase.

2.3.2. Large-Scale Purchasing Led to Liquidity Creation

Another crucial channel for QE, the purchasing channel, can be achieved by purchasing different kinds of bonds and national debts. For example, the main conduit of QE1 and QE3 for the Fed is purchasing long-term bonds that are directly related to GSE and mortgage-backed securities. When it comes to QE2 and QE4, the Fed adapted strategies that purchase national debt directly. The purchasing channel is highly related to the lending channel through purchasing bonds. The purchases of long-term bonds can release more working capital for commercial banks. Hence, more credits will be provided so that more liquidity will be injected into the market to stimulate the economy. Furthermore, purchasing securities and bonds can increase demand for these assets in the market, which also boosts liquidity. For example, the ECB's Corporate Sector Purchase Program (CSPP) developed corporate bond operations, encouraged borrowing, and improved the liquidity of bonds [5]. Moreover, Bank funding liquidity comes from sufficient reserves, including reserves, and at the central bank so the stimulus of the central bank is essential during crisis periods when the liquidity of bank and market is deficient [6]. Besides, purchasing national debt, which is an approach to release

the financial stress of the government. It also affects the market of this bond and the consequence of this purchasing also influences the liquidity channel. For instance, QE2 Treasury inflation-protected securities (TIPS) purchase mattered the yield of TIPS so that acted on the market of TIPS [3]. Hence, purchasing bonds is a crucial liquidity transmission channel for QE.

3. The Relation between QE and Inflation

Whether it is reducing the interest rates, expanding lending channels, and large-scale purchasing, the consequence of them will lead to the growth in working capital. Therefore, QE brings out the potential possibility of inflation. This concern comes from the classical quantity theory of money supply. However, so far, QE has not caused massive inflation. Here are the reasons: First, the central bank can adjust interest rates at any time to avoid inflation of QE and control extra reserves from spilling out into the supply available to the public [7]. Second, QE through the lending channels including expanding credits and creating excess reserves by purchasing is not available to the public. Hence, though the liquid money increases, the board money does not. At last, Niwa shows that when the central bank holds a large scale of government bonds, the fiscal authority fails to achieve inflation [8]. It means that purchasing national debts will not lead to inflation, even if inflation is negatively related to purchasing national debts. However, in the current situation, there just exists a low probability of inflation caused by QE.

4. Specific Case Investigation: Impact of Quantitative Easing on Government Bond Market Liquidity in Japan

4.1. Introduction of Analysis

Following the global financial crisis, central banks worldwide have extensively employed quantitative easing to stimulate their economies. Japan, facing prolonged economic stagnation and deflation, implemented an aggressive version of this policy in 2013, known as Quantitative and Qualitative Monetary Easing (QQE). This policy led to extreme volatility in government bond prices and initially reduced market liquidity. This study analyzes the specific adjustments made by the Bank of Japan during the QQE and assesses their impact on market liquidity.

In the following text, the impact of the Bank of Japan’s QQE policy, initiated in 2013, on the liquidity of the government bond market will be examined. The following text specifically addresses how three policy adjustments—increased purchase frequency, reduced auction volume, and decreased variability in purchase amounts—contributed to enhancing market liquidity. As the consequence, these adjustments improved market participants' expectations about future purchases, thereby reducing market uncertainty and enhancing liquidity.

4.2. Methodology

The study, based on the article of Iwatsubo, employs an event study approach, analyzing market liquidity data before and after the policy implementation [9]. By comparing changes in bid-ask spreads, effective spreads, and Amihud’s liquidity measure (ILLIQ), the following evaluate the impact of the policy changes on market liquidity.

4.3. Analysis of the Bank of Japan’s Policy Changes

The BoJ's QQE involved three significant changes to their purchasing strategy to address liquidity concerns, which includes increased purchasing frequency, decrease in purchase amount, and reduced variability in purchase amounts. First, the increased purchasing frequency, helped market participants anticipate when purchases would occur, allowing them to plan and execute their strategies more effectively. Second, a decrease in purchase amounts can be regarded as smaller, more frequent purchases helped reduce the shock to the market, mitigating large-scale disruptions. At last, reduced

variability in purchase amounts, refers to consistency in purchase volumes and decreased uncertainty, helping stabilize expectations among investors.

4.4. Results and Discussion

According to the research, market liquidity significantly decreased at the onset of QQE. As the Bank of Japan adjusted its approach by increasing the frequency of purchases, reducing the volume per auction, and decreasing the variability of purchase amounts, market liquidity began to improve. Market participants can anticipate future buying actions better and reduce market volatility caused by policy uncertainty with the help of these adjustment policies.

4.5. Theoretical Implications

The findings underscore the importance of transparency and communication strategies in the implementation of large-scale asset purchases by central banks. By enhancing these strategies, central banks can not only reduce market uncertainty but also improve market liquidity, thus more effectively supporting the economy. More important perspectives for other central banks in formulating policies that consider market impacts are provided.

In general, the analysis of QQE policy can show an international perspective on the effects of QE policies in different national and market contexts, especially regarding strategies and outcomes in managing market liquidity, which provides evidence for QE's impact on market liquidity.

5. Conclusion

This article mainly discusses the influence of quantitative easing (QE) on market liquidity and inflation. First, QE lowers interest rates to stimulate the market initially. After that, large-scale purchases, including purchasing credits, bonds, and national debt, increase market liquidity. Purchasing credit, reserves, and bonds affects liquidity from the lending channel, leading to an increase in loan supply and demands of the market. Purchasing government bonds is an essential liquidity transmission channel for the central bank. In addition, the article also shows the impossibility of QE leading to inflation from adjusting interest rates and liquidity created by the lending channel and purchasing channel. However, it is shown that there is a low probability that QE would lead to inflation.

Quantitative easing is an efficient and significant approach to stimulate the economy for central banks as a channel to inject liquidity into the economy. Though it is effective, some potential possible outcomes of QE have not been discussed in the article such as how the market liquidity stimulates the economy is a critical factor of QE's effect and it need deeper discussion?

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