

Potential Risks of Implementing Quantitative Easing Monetary Policy

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Abstract: As a result of the global recession caused by the 2020 COVID-19 pandemic, many countries adopted unconventional monetary policies. In response to the phenomenon of hyperinflation, the implementation of quantitative easing policies became the solution for many central banks to stabilise inflation. This paper will discuss quantitative easing monetary policy, the unlimited expansion model of monetary policy in support of fiscal policy, and quantitative tightening monetary policy, using the measures implemented by the Federal Reserve and the European Central Bank in response to the COVID-19 epidemic and their effects as examples. It is concluded that by analysing the forms that quantitative tightening can take, it is pointed out that the central bank maintains the market with complete certainty by signaling to participants that it is going to start implementing quantitative tightening and stating that it will only lead to a natural loss of bonds and won't involve any active sales, but at the same time it will limit the flexibility of the central bank's policy.

Keywords: quantitative easing, inflation, quantitative tightening, the monetization of fiscal deficit, forward guidance

1. Introduction

As a result of the Great Recession caused by the global financial crisis of 2008, there was a sharp increase in global inflation, but throughout the 2010s, inflation remained at a stable value until the beginning of the global inflationary crisis in 2021 in the context of a massive pandemic and the Russo-Ukrainian war. In contrast to the inflation caused by the financial crisis of 2008, the combination of many factors, such as the economic context and the political context, had a driving effect on hyperinflation.

Junior et al. found that the most powerful policy tools to respond to the persistent economic depression in the country caused by the COVID-19 epidemic were increased government spending and expansionary monetary policy by constructing a three-country Dynamic stochastic general equilibrium model (DSGE) [1]. However, the zero lower bound constraint on the policy interest rate deepens the recession, while quantitative easing monetary policy is effective in mitigating the decline in private sector consumption, inflation, and output. However, there is still controversy today as to whether quantitative easing leads to hyperinflation. Drawing on the Great Crisis of 1929, Liu and Ahn suggest that quantitative easing (QE) can lead to inflationary pitfalls [2]. Most countries have already adopted quantitative easing monetary policy in response to the recession and, following this, have accelerated the pace of quantitative tightening to reverse QE in order to stabilize inflation. The

United States adopts monetary policy to support the unlimited expansion of its fiscal policy model, including cash checks to consumers, unemployment benefits, rent assistance, and food stamps.

The ECB has been raising interest rates since July 2022, and in June 2023, its main refinancing rate, marginal lending rate, and deposit facility rate will increase to 4.00 percent, 4.25 percent, and 3.50 percent, respectively, with the deposit rate at its highest level since 2001. However, the effects and risks of implementing quantitative tightening to stabilize inflation in today's context still need to be studied in depth, and the feasibility of tightening policies and the future trend of the global economy need to be further explored.

Therefore, after analysing the relationship between quantitative easing and inflation, this paper will derive the reasons for, and the effects and risks of, the monetisation of fiscal policy, mainly in the United States, and discuss the challenges and prospects of quantitative tightening in the light of recent policies implemented in various countries, with a view to analysing the policy's responsiveness to the systemic inflationary pressures in the economy and to deepening the understanding of the optimal monetary policy.

2. Related Work

2.1. Quantitative Easing

The QE transmission mechanism is generally considered to be the policy signaling channel, the portfolio restructuring channel, and the bank liquidity channel [3]. Bernanke conducted a study on the ineffectiveness of interest rate policies and the tightening of the money supply during the Great Depression, arguing that it is necessary to increase the money supply to deal with the crisis, and that quantitative easing can avoid deflation, bring people inflationary expectations, stimulate people to consume in advance, and boost demand [3].

2.2. Theories of Money Demand

Under the assumptions of economic theory, QE will make inflation higher.

According to Fisher's equation:

$$MV = PT$$

M represents the quantity of money in the economy, V represents the velocity of money circulation, P represents the price of goods, and T represents the total quantity of goods and services.

The quantity of money in the economy times the velocity of money in circulation is always equal to the quantity of goods in the economy times the price of goods. Assuming that the quantity and velocity of money circulating in the economy remain constant over a short period of time, there will be a positive correlation between the quantity of money printed in the economy and the price of goods. Therefore, a quantitative easing policy that creates more money will push up commodity prices. However, in times of financial crisis, the velocity of money circulation may decrease significantly, so an increase in M will be needed if the product on the right-hand side of the equation is to remain constant.

2.3. Quantitative Tightening (QT)

One method of influencing interest rates to rise is known as quantitative tightening (QT). QT is the process by which a central bank sells its accumulated assets to reduce the money supply circulating in the economy, i.e., the process by which the central bank shrinks its inflated balance sheet. QT reverses QE, destroying some of the money created by QE, and has the opposite effect of QE on

yields and asset prices, as well as house prices, by pushing up long-term interest rates and leading to a fall in asset prices.

2.4. Monetisation

Monetisation, also known as "money-financed fiscal programs" or "money printing", usually occurs when governments finance themselves by issuing non-interest-bearing liabilities. That is, currency in circulation or central bank reserves, if the central bank can avoid paying interest on those reserves. Monetisation can help governments ease economic pressures during a mass pandemic. It can be used directly to finance extraordinary expenditures, such as wage subsidies and transfers to consumers facing high energy prices, policies that would go some way towards easing deflation and stimulating moderate inflation. By increasing inflation, it could reduce the value of its outstanding debt to some extent.

3. Large Scale QE and High Inflation

3.1. Comparative Analysis of the Current Round of QE with the QE Implemented in 2008

The current round of QE and the 2008 QE have some commonalities in terms of background, market performance, and policy responses, but there are still major differences in terms of causes, specific tools, economic impacts, and effects [4]. By collecting data on the percentage change in base money and the Consumer Price Index (CPI) in the United States, the relevant data for 2008/09 and 2021/22 are analysed in comparison, as figure 1 shows:

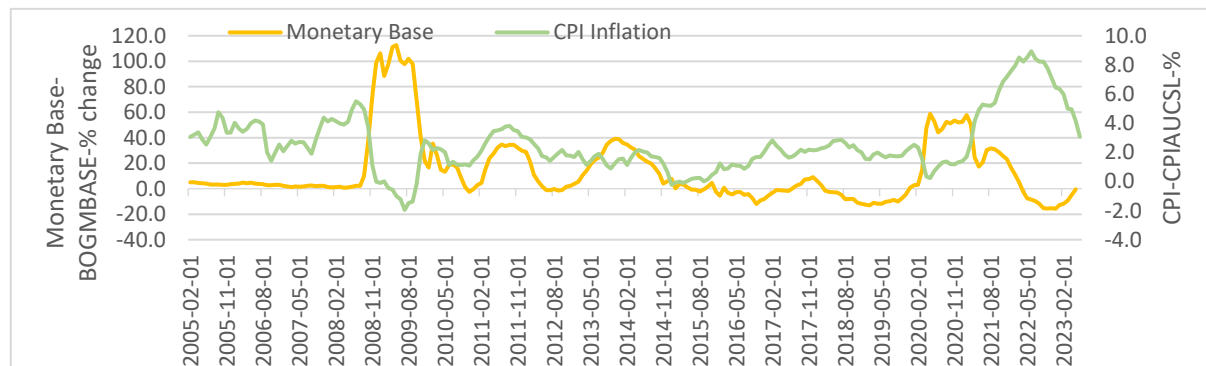


Figure 1: US Monetary Base and Inflation.

Figure 1 shows that the Federal Reserve's use of quantitative easing in 2009 was not accompanied by an increase in base money that triggered inflation. This suggests that U.S. inflation was somewhat unaffected by the increase in the monetary base. Excluding volatile cost drivers (food and fuel), core inflation remains below the 2 percent inflation target. In 2022, on the other hand, the United States experienced severe inflation following the implementation of quantitative easing. Thus, quantitative easing does not automatically lead to higher inflation.

The reason is whether the money created by the Fed circulates in the economy. Quantitative easing during the Great Recession led to a large increase in the monetary base, and the Fed created money to buy bonds from commercial banks. However, the commercial banks did not lend this money out, so the growth in the US money supply (M2) did not change much. This suggests that the money released by the Fed did not go directly into the real economy. The central bank has increased base money, but this is essentially saved rather than spent. But the outbreak of a massive pandemic in 2020 causes the Fed, which is still far from completing its tapering goals, to have to re-release more reserves, causing M2 to rise by a significant amount.

3.2. Potential Causes of High Inflation

3.2.1. Money Supply

The Federal Reserve began a new round of quantitative easing in 2020 to increase liquidity in U.S. banks with \$700 billion worth of asset purchases, including Treasury bonds and mortgage-backed securities. This quantitative easing program has significantly increased the Fed's balance sheet. Other central banks around the world, such as the Bank of England and the European Central Bank, have also resorted to increasing the money supply to stimulate their economies. As of May 3, 2023, the Fed's balance sheet had reached approximately \$8.5 trillion.

3.2.2. Expansionary Fiscal Policy and Strong Recovery

A rapid recovery is a driving factor for higher inflation [5]. Although tight monetary policy stabilized the output gap and inflation, the government adopted quantitative easing in monetary policy in 2021. In addition, direct transfers to households and businesses in 2020 caused savings accumulation and broad money aggregates to rise sharply, providing balance for a spending boom as the economy reopened. Fiscal stimulus in the United States in early 2021 further boosted aggregate demand.

3.2.3. Global Supply Chains

At the onset of a large-scale pandemic, economic activity decreases. Employment and consumer demand increase quickly after the economy reopens. Business activity was unable to meet the rapidly growing consumer demand because problems in the global supply chain remained unresolved. The Supplier Lead Time Index in IHS Markit's PMI Business Survey reflects the extent of supply chain delays in an economy and can be seen as a measure of the extent to which supply and demand are in balance and how any such imbalances may affect future prices [6]. The indicator suggests that supplier delivery times have lengthened significantly in recent months and have proved to be even longer than during the initial COVID-19 shock.

3.2.4. Energy Price

The outbreak of a large-scale pandemic causes oil prices to plummet as the embargo disrupts transport and travel, which account for two-thirds of global energy consumption [7]. For oil-exporting countries, a significant drop in the price of oil can have a severe impact on the volume of their exports and fiscal revenues, and governments may reduce government spending as a result.

The war in Ukraine has become another factor exacerbating the economy's downturn by triggering an energy and food crisis. Increased energy costs will affect food prices and the prices of non-energy industrial products, and this will push up food inflation and underlying inflation [8].

4. Monetization

4.1. Theoretical Foundation

Take the underlying Fisher equation and break it down:

$$MV = P_1T_1 + P_2T_2$$

P_1 represents the price of assets, T_1 represents total assets, P_2 represents the price of everyday consumer goods and services, and T_2 represents the quantity of everyday consumer goods and services.

Monetary policy is related to P_1T_1 . the implementation of loose monetary policy will increase M , but most of the money issued by the central bank is used to buy assets. P_1 will rise, but this part of the money is not circulated into real economic activities, so the velocity of money circulation can't start. Fiscal policy is related to P_2T_2 . The fiscal stimulus will make most people spend the money when they get it, and the money will quickly enter the circulation system, making the circulation speed increase dramatically, thus stimulating the economy to start recovering. In other words, when both monetary and fiscal policies are implemented simultaneously, MV will increase dramatically in a short period of time and push P_2 up. When the prices of everyday consumer goods rise to a certain level, i.e., hyperinflation, the central bank will try to curb inflation by raising interest rates, which may lead to a debt collapse and puncture the asset bubble.

4.2. Wage Subsidies During the Crisis

As mass pandemic outbreaks and embargoes have led to a surge in unemployment, at least 40 countries have adopted the policy of 'temporary wage subsidies' as a means of mitigating the effects of the economic crisis. Blanchard notes that rising inflation and tight labour markets may prompt workers to demand nominal wage increases to catch up with or even exceed inflation, creating a wage-price spiral [7].

4.3. The Monetisation of Fiscal Deficit Used in the US

Before the epidemic, the US was in a prolonged period of low inflation, and with the zero-interest rate floor constraining monetary policy, the Federal Reserve used QE to support unlimited expansion of fiscal policy as a way to alleviate the low velocity of money circulation and the liquidity trap dilemma. And after the epidemic, the United States is to use monetary policy to support fiscal policy in unlimited expansion mode.

The current round of QE, compared with the QE policy implemented during the 2008 financial crisis, has resulted in much larger increases in $M2$, government spending, government debt held by the Federal Reserve, and transfer payments than at the same stage of the 2008 crisis recession (Figure 1). Since the outbreak of the crisis, the U.S. Treasury has dramatically increased the size of its new debt issuance, and the resulting funds have been distributed directly to consumers in the form of cash cheques. This is in addition to the implementation of programs such as wage assistance and food stamps, which have led to a significant increase in government transfers and personal income. As the increase in public debt and fiscal spending in the United States has far outpaced the expansion of bank credit, this fiscal spending has created money and bank credit more exogenously, with a shorter lag in its effect than that of monetary policy. Effective demand by U.S. households recovered rapidly after this, with U.S. consumers purchasing nearly \$1 trillion more in goods in 2021 compared to before the outbreak. A clear monetisation of US fiscal policy can be observed. Fiscal and monetary policies implemented after the epidemic were much more accommodating, directly affecting the increase in personal income [9].

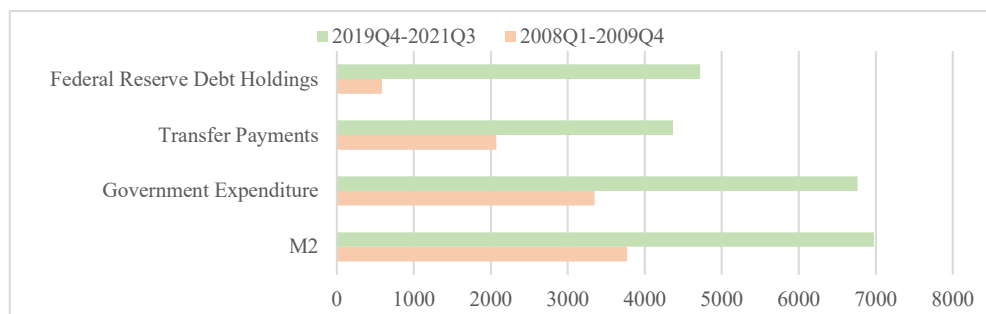


Figure 2: Comparison of fiscal and monetary indicators in the US in 2008 and in the post-pandemic recession (in US\$ billions, and data are quarterly averages).

5. Reversing the Policy of Quantitative Easing

5.1. Quantitative Tightening

One of the risks of the implementation of quantitative easing monetary policy is quantitative tightening, also known as reversing quantitative easing. The Federal Reserve, the European Central Bank, and several other countries have begun to raise interest rates since 2022. Supply shocks are a key reason for the current high inflation, but strong demand also continues to push the envelope, forcing many central banks to accelerate the pace of interest rate hikes due to inflationary pressures.

5.2. Effect

The fiscal vulnerabilities associated with high government debt may create new and complex interactions between public debt management and central banking [10]. In high-debt economies, a tightening of monetary policy is very likely to result in a "Fisherian" debt deflation, with a significant increase in the risk of recession. With a tight monetary policy, interest rates will increase significantly and firms are likely to invest less, expand less and employ less. Employment will fall and consumers will cut back on spending, leading to a fall in aggregate social demand, which will ultimately be transferred to commodity and asset prices, resulting in a sharp fall in commodity and asset prices, and ultimately deflation.

Quantitative deflation can take two different forms. First, the central bank never actively sells its holdings of government bonds. It simply waits for them to mature. When they mature, the government gives the central bank cash because the government has to pay back the money it borrowed when it initially sold the bonds. The government raises money by collecting taxes, which it takes from the private sector, such as households and companies. So the bonds enter the market before they are ready to mature. Based on the preferred-habitat model, Bin found that during a crisis period with risk aversion being doubled, 2.2 trillion dollars of passive tapering over three years is equivalent to a 74 basis point increase in the federal funds rate [11].

The second way is for the central bank to actively sell bonds on the secondary market. It means that bonds held in the SOMA portfolio are sold before maturity. This form of quantitative tightening will create uncertainty and worry in the financial markets because they do not know how much of all the government bonds the central bank will sell, how fast the tightening will take place, or whether there will be a change in the price of government bonds or the level of long-term interest rates. The impact of active sales in the medium to long run is greater than that of passive sales. So this approach would shrink the balance sheet more quickly than passive roll-off.

The central bank's main strategy is to stabilize the market by sending a message to participants that QT is going to begin while stating that it is just a natural loss of bonds and won't involve any aggressive sales. By looking at the profile of assets on the central bank's balance sheet, market

participants can deduce the precise rate at which liquidity or funds will flow back from the market to the central bank. Thus, this QT strategy does not create any uncertainty in the market.

However, this approach limits the room for maneuver of the central bank. Central banks may indicate that inflation is actually worse than they thought and therefore need to tighten the financial environment faster. But they can't tighten monetary policy fast enough because they have already made a commitment that they will only reverse quantitative easing. As bonds mature, money will naturally flow back to the central bank from the private sector to the government sector.

Taken together, this approach would produce a great deal of predictability and increase market confidence, but it would also limit the central bank's policy flexibility, which may have limited responsiveness to systemic inflationary pressures in the economy.

6. Conclusion

This paper analyses the QE used by the Federal Reserve during the Great Recession in 2008 and the current round of QE used during the mass pandemic for comparative analysis, and finds that the current round of quantitative easing led to price increases, while the 2008 QE did not lead to price increases. There are some differences between the two rounds of QE in terms of causes, objectives, and tools, and the velocity of money circulation was slower in 2008 than in the current round. Thus, QE is an inflationary tool, but there are still other factors that lead to an increase in inflation, including an increase in the money supply, expansionary fiscal policy and the economic recovery, the collapse of the supply chain, and energy prices.

In addition, this paper analyses the response taken by some developed countries in the past year and finds that most central banks use QT and continuous interest rate hikes to reverse QE and reduce inflation. Monetary tightening is necessary to control inflation, but in the current context of slowing global growth, one should be wary of overly aggressive policies that could lead to a rising risk of recession.

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