

Monetary Policy Response to COVID-19

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Received: Jan 26, 2022; Revised: Apr 19, 2022; Accepted: Apr 20, 2022; Published: Apr 28, 2022

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CITATION: Sukar A. 2022. Monetary Policy Response to COVID-19. Management and Economics Research Journal, 8(2): 1-6, Article ID 1557092. DOI: 10.18639/MERJ.2022.1557092

ABSTRACT

The coronavirus pandemic presents enormous health and economic challenges to the United States and the global economy. The coronavirus disease and the measures taken to contain it led to a severe contraction of the US economy not seen since the Great Depression. The Federal Reserve made a swift response to ensure the stability of the financial market and promote economic growth. Initially, it cut the federal fund rate to its effective lower bound, expanded its long-term asset purchases, and created new reserves much of it used to finance the stimulus and keep the long-term interest rate low. Despite a massive injection of liquidity, the inflation rate remained low until the second quarter of 2021 and there was no pressure to slow the growth of the central bank balance sheet or raise the interest rate. Because of the unexpected surge of the inflation rate in early 2022 to a level not seen since 1982, the Federal Reserve began to raise the federal fund rate and indicated that it will reduce its asset holdings. If the inflation rate persists, not only contractionary monetary policy but also cuts in federal spending may be required.

KEYWORDS: Monetary Policy, COVID-19.

1. INTRODUCTION

The coronavirus pandemic presents enormous health and economic challenges for the United States and around the globe. The disease is highly contagious and has caused a significant loss of life. Countries have imposed lockdowns and social distancing policies that limit social interactions to control the disease. The lockdown policies have been somewhat effective in taming the spread of the disease but are associated with substantial economic costs as economic activities were shut down. The US GDP collapsed at an annual rate of 31.4% in April 2020 and the unemployment rate rose from a 50-year low of 3.5% in February 2020 to 14.7% in April 2020 (Chetty *et al.*, 2021). Although the development of vaccines has reduced the infection rate and the death toll, the emergence of Delta and Omicron variants of the disease continues to add to the health and economic challenges.

While both the pandemic and the financial crisis share uncertainties as a factor, the pandemic is different from the financial crisis of 2008 in some ways: First, the financial crisis was caused by dysfunctions in the financial system, while the pandemic was caused by an unexpected exogenous shock. When the coronavirus disease first started in China, many governments including the United States downplayed the disease and viewed it as a Chinese problem until the disease spread fast to other countries. Second, unlike the financial crisis that affected the demand side via the wealth effect, the pandemic crisis affected both the demand side and the supply side of the economy. On the demand side, people who have lost their jobs cut back their spending significantly. On the supply side, restriction measures to slow the spread of the disease disrupted the supply chain and lowered the economy's productive capacity. Third, before the financial crisis, the Fed had more room to reduce the interest rate as compared to the period before the pandemic crisis. The interest rates have been heading downward for many years with the trend accelerating after the Great Recession.

Because of the enormity of the problems, the Fed took multiple policy actions in response to the pandemic. First, it cut the federal fund rate which was already to Zero Lower (ZLB). With the experience of the 2008 financial crisis, the Fed turned to unconventional monetary policy tools including forward guidance and large-scale purchase of long-term government securities (LSAPs). The Federal Reserve also introduced facilities to support the flow of credit to support the wider segment of the economy (Cantú *et al.*, 2021).

This paper aims to discuss conventional and unconventional monetary policy measures undertaken by the Federal Reserve to minimize the damage caused by the pandemic shock. The paper is organized as follows. Section II highlights conventional and unconventional monetary policies. Section III presents the monetary policy response to COVID-19. Section IV discusses emergency lending policy and Section V is a summary and conclusion.

2. CONVENTIONAL AND UNCONVENTIONAL MONETARY POLICIES

Monetary policy is guided by the Federal Reserve statutory mandates of attaining full employment and stable prices. To implement its mandate, the Fed sets a target for the overnight rate in the federal fund market where banks trade reserve balances. Before the financial crisis, the Federal Reserve bought and sold securities issued by the US government in the open market to keep its policy rate near or at the target. Traditionally, the Fed changes the federal fund rate to achieve its macroeconomic goals. Changes in the federal fund rate are expected to be transmitted to other interest rates and ultimately to the real economy.

From the beginning of the mid-1980s until 2007, the Federal Reserve monetary policy was successful in achieving not only low inflation but also a low variability of the inflation rate. To the extent that low and stable actual inflation translates into an expected low and stable inflation, policymakers can have more flexibility in responding to shocks in the economy (Bernanke, 2012).

In 2007, the world was hit by a financial crisis that produced economic contraction and seemed to undermine the confidence in the ability of central banks to successfully manage the economy. The Fed first responded to the financial crisis by cutting the discount rate, extending term credit, and lowering the target rate. The Federal Reserve cut the policy rate a number of times and ultimately reduced it to a 0%–0.25% range. Despite the easing of the monetary policy, dysfunctions in the credit market continued, and in late 2008 and 2009, the Fed took some extraordinary steps to provide liquidity and support credit market funding, including emergency lending facilities and the creation of currency swaps for several foreign central banks. Although these actions averted the worst outcome of the crisis, the damage to the economy was severe.

Having lowered the interest rate to its ZLB, the Fed looked for an unconventional monetary policy to achieve financial stability and promote economic growth. Unconventional monetary policies include altering the size and composition of the Federal Reserve balance sheet by making Large-Scale Asset Purchases (LSAP) and announcements about the future path of short-term interest rates (forward guidance).

While conventional monetary policy involves the central bank buying and selling short-term securities, the unconventional monetary policy extends the purchase to long-term government securities and other risky assets such as mortgage-backed securities. The goal of LSAP also known as Quantitative Easing (QE) is to directly lower the long-term interest rates in the economy. QE can reduce long-term yields through both signaling and portfolio balance channels (Fawley and Luciana, 2012; Morgan 2012; Fawley and Neely, 2013). Since the government bond yields are benchmarks for other interest rates, a decrease in their yield is followed by other interest rates as well. The decrease in long-term interest rates can ease credit conditions and stimulate spending and investment as the cost of borrowing decreases (Joyce *et al.* 2012). For empirical evidence on the effectiveness of LSAP on long-term interest rates, please see Krishnamurthy *et al.* (2011), Gagnon *et al.* (2011), and Christensen and Rudebusch (2012).

With a forward guidance policy tool, the Federal Reserve communicates to the public about the likely future course of monetary policy. As pointed out by Bernanke (2012), clear communications about policy are especially important when the policy rate is at zero lower bound and economic conditions call for further policy stimulus. Forward guidance affects the long-term rate by reducing the market participants' uncertainty about the short-term path by extending its horizon (Kool and Thornton, 2012).

The Fed had used forward guidance successfully during the financial crisis and the fear that it would raise the inflation and devalue the US currency did not materialize (Kashkari, 2019).

3. MONETARY POLICY RESPONSE TO COVID-19

In early 2020, before the COVID-19 pandemic, the US economy was in good shape. The US economy was in its 128 months of expansion, the largest economic expansion in history, labor market conditions were strong, and the unemployment rate at 3.5% was at 50 years low. As Jeremy Powell, the chairman of the Federal Reserve indicated in his speech, the economy was expected to continue to grow and there was no threatening asset bubble to pop and no unsustainable boom to bust (Powell, 2020).

COVID-19 disease was first recorded in Wuhan, China, and by February 2020, it became clear that the disease was spreading fast and by the end of February, the important markets were faltering raising the threat of a financial crisis. The COVID-19 pandemic and the widespread shutdowns to protect public health forced many sectors to operate well below their capacity. To limit the spread of the disease, CDC recommended social distancing and closing of nonessential businesses and activities and the use of shelter at home. By mid-March, much of the economy had been shut down.

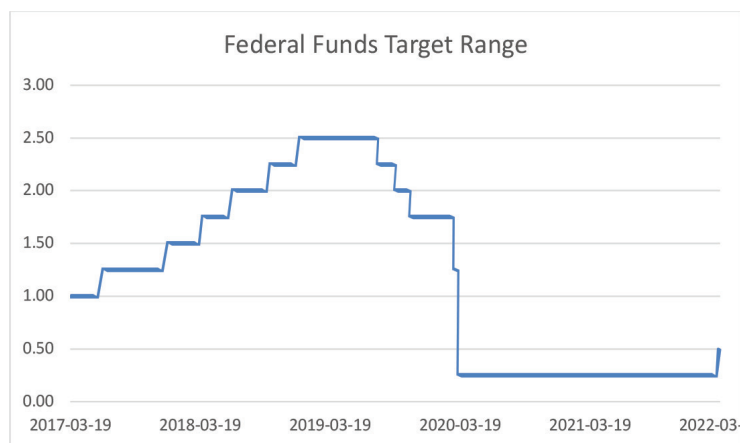
The adverse effects of these restrictive policies disrupted the supply chain and reduced economic activities including production, distribution, and trade. Gopinath (2020) identified several sectoral differences in terms of the impact of the COVID-19. Because of restrictions on mobility, the crisis has dealt a uniquely large blow to the service sector. In a typical crisis, the brunt is borne by manufacturing, reflecting a decline in investment while the service sector remains mostly stable as consumption demand is less affected. The impact of the crisis caused by the COVID-19 pandemic is different. Changes in the consumption behavior of consumers and uncertainties about the economic conditions have led households to save more. Evidence also shows that the service sector was affected by a decline in travel, dining out, entertainment and sports, and other outdoor activities. Despite a large supply shock unique to the pandemic, inflation expectations were down.

Disruption in economic activity also interrupted income earnings and other cash flows for many households, businesses, states, and local governments. In response, businesses, investors, and households sought to increase their cash holdings and other liquid assets. The rush to cash holdings led to severe strain on the financial markets.

The Federal Reserve made swift responses to ensure financial stability and promote economic recovery. The Fed has used all its tools, both conventional and unconventional monetary policy to address the economic and financial impacts of the pandemic. Traditionally, when output is below the potential level and inflation is below target, the Federal Reserve absorbs slacks in the economy by lowering the federal fund rate. Reductions in the federal fund rate are immediately reflected in a reduction in interest rates including long-term rates.

The federal fund rate is determined by supply and demand for reserve. Before 2008, the Federal Reserve used a corridor system to set the federal fund rate. According to this system, the Federal Reserve announces its target rate and adjusts its supply of reserves such that the effective federal fund rate would be close to the target. Following the large-scale asset purchase during the Great Recession, banks were awash with bank reserves and a small change in reserve supply would have minimal effect on the federal fund rate. In late October 2008, the Federal Reserve adopted a floor system, Interest on the Reserve of Banks (IORB) together with other tools used to determine effective federal fund rates. The target rate is a range because the Federal Reserve cannot mandate a set number instead it sets the target rate as a range for banks to follow (Afonso *et al.*, 2022).

In response to COVID-19, the Federal Reserve cut the federal fund rate from a range of 1.5%–1.75% to 1%–1.5% on March 3, 2020, and on March 15, 2020, it further cut the target range to 0%–0.25%, effectively reducing it to ZLB (Figure 1). The main reason to act faster than normal in cutting the federal fund rate to its effective lower bound was because the expectation that the monetary policy to be constrained soon implies an expectation that the condition will deteriorate further, which pushes the current condition even more (Curdia, 2020). This was the second time the Fed's target hit the ZLB. The first time was during the 2007–2009 financial crisis. The reduction in the policy rate was to lower interest rates more broadly including mortgage rates and encourage both consumer and business spending.



Source: Federal Reserve Bank of St. Louis, FRED.

Figure 1. Federal funds target range.

As the economic condition continued to deteriorate, there was not much the Fed could do in terms of the federal fund rate. Short-term interest rates were already low before the pandemic and the cost of capital was very cheap.

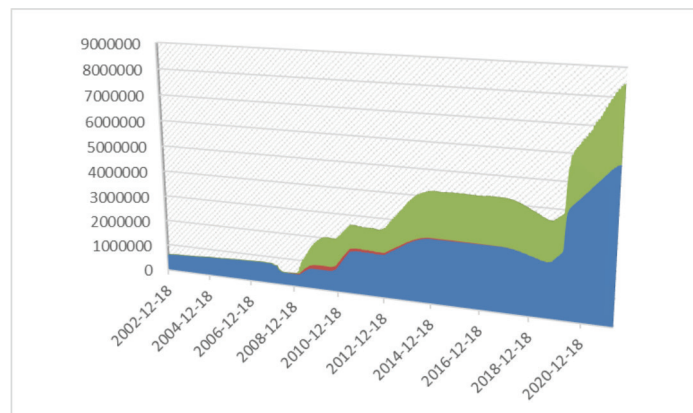
The sharp increase in the demand for cash and other liquid assets in mid-March 2020 caused strains in financial markets disrupting the flow of credit to businesses to fund daily operations. To alleviate the problem, the Federal Reserve reduced interest on reserves and the discount rate. The maturity of the loan made using the discount rate was also extended. The lower discount rate and the extended maturity have led to a substantial increase in discount window lending. The volume of lending through the discount window increased from approximately 40 million to nearly 40 billion dollars in the first quarter of 2020 and rose to nearly 140 billion dollars in April 2020 (Clarida *et al.*, 2021; Cachanosky *et al.*, 2021).

In addition to lowering interest on reserves, the federal fund rate, and the discount rate, the Fed also expanded its Repurchase Operations (Repos). The Fed used repurchase agreements to ensure that the effective federal fund rate does not exceed the upper bound. Once the pandemic started, the Fed made Repos available on a large scale in response to the higher borrowing cost in the Repos market. From March 16, 2020 to May 1, 2020, the Fed made \$1 trillion in overnight Repos available at the auctions every day and since May 2020, that figure was lowered to \$500 billion in overnight purchases available daily (Cachanosky *et al.*, 2021).

Changing reserve requirements is another monetary policy tool that the Fed uses to control the money supply. On March 15, the Fed announced that it was reducing the reserve requirements to zero for the first time in history (Labonte, 2021). The purpose of reducing the reserve requirement was to ensure that banks hold a minimum amount of liquidity.

This announcement, however, had minimal effect on liquidity as banks have been holding trillions of dollars in excess reserves following the introduction of paying interest on reserves in 2008.

With the short-term rate close to zero, the Fed revived its financial crisis policy tool of purchasing assets on a large scale (QEs). Under quantitative easing, the Fed expanded its balance sheet of Treasury securities and mortgage-backed securities (MBS). Initially, the Fed was committed to purchasing at least \$700 billion worth of securities, \$500 billion in Treasury, and \$200 billion in mortgage-backed securities (Federal Reserve, 2020). The Fed's decision to purchase long-term assets was aimed at both increasing liquidity and stimulating the economy by lowering long-term interest rates. As strains in Treasury markets and agency MBS markets continued to build, on March 23, 2020, the Federal Reserve took further action to continue to purchase treasury securities and agency securities "in the amount needed" to support the smooth functioning of the market and effective transmission of monetary policy to broader financial conditions (Federal Reserve, 2020). For the first time, the Fed also announced that it would purchase commercial mortgage-backed securities (USI, 2021). Because of Repo operations and security purchases, the Federal Reserve balance sheet expanded substantially. As we can see from Figure 2, the Federal Reserve balance sheet skyrocketed to 8.5 trillion dollars in March 2022 from around 3.7 trillion dollars at the end of 2019.



Source: Federal Reserve Bank of St. Louis, FRED.

Assets: Securities Held Outright: US Treasury Securities ALL: Wednesday Level (Blue)
 Assets: Securities Held Outright: Mortgage-backed Securities: Wednesday Level (Green)
 Assets: Securities Held Outright: Federal Agency Debt Securities: Wednesday Level (Red)

Figure 2. The Federal Reserve balance sheet.

The Federal Reserve has used unconventional monetary policy successfully twice in 12 years, to stabilize the major economic crisis. It will likely use all its tools in the toolbox if another crisis could arise in the future. Fed will use it. Even though quantitative easing works in lowering the long-term interest and helping the economy to recover, its effect on the broader economy is subject to criticism. Because quantitative easing increases the monetary base, it is argued that it could lead to an increase in the money supply and thus raise inflation.

Summers (2021) foresaw inflation coming as early as February 2021. He warned that the stimulus package on a large scale would set off inflationary pressure with a consequence for the value of the dollar and financial stability. When the inflation rate spiked up in mid-2021, the Federal Reserve downplayed the inflationary pressure, believing that it was a transitory problem caused by supply constraints. However, because of the combination of strong demand and supply constraints, inflation reached a 7.5% annual rate, which was the highest yearly rate in 40 years. As Waller (2022) pointed out, there is also a risk that public expectations about higher inflation could drive inflation even higher.

Concerned about the high and persistent inflation, the Federal Reserve raised its target from ZLB to a 0.25%–0.50% range and hinted at more raises to come. While raising interest rates discourages borrowing and spending, a rise in interest rates with the objective of curbing inflation must be combined with cuts in federal spending.

The United States has avoided hyperinflation by giving the Fed a relatively high degree of independence and by creating separation between monetary and fiscal policies (Bernanke, 2012). The policy response to the pandemic has unusually increased both the budget deficit and the Federal Reserve's purchase of treasury securities. The confluence of large-scale Fed purchases of treasury securities and the large-scale budget deficit could weaken the Federal Reserve's independence (Labonte, 2021). Purchasing government securities when the interest rate is at zero lower bound is effectively considered monetization. As Dorn (2020) argues, monetization of new federal debt can also make it easier for politicians to seek the Fed's participation in off-budget fiscal policy actions.

Another problem associated with monetary response to the pandemic is that large-scale asset purchases could lead to an asset bubble that could pose a threat to financial stability. Critics argue that QE artificially boosts liquidity that would then flows into securities market such as the stock market and artificially boost their prices (Gern *et al.*, 2015; Labonte, 2021). This fear has been accentuated by the rapid rise in the stock market, housing prices, and other assets.

4. EMERGENCY LENDING POLICY

In response to the financial disruption caused by COVID-19, the Federal Reserve extended its lender of the last resort role beyond the banking system to assist nonbank financial markets. The Federal Reserve revived the facilities used during the financial crisis and introduced new facilities to promote the smooth functioning of the financial system and the flow of credit. The new facilities include Term Asset-Backed Loan Facility (TALF) to facilitate the issuance of auto loans, equipment leases, credit card loans, and other loans. The Primary Market Corporate Credit Facilities (PMCCF) was introduced to purchase new bonds and loans from the companies so that they are better able to maintain business operations and capacities. Secondary Market Corporate Credit Facilities (SMCCF) were designed to provide liquidity for outstanding corporate bonds. These facilities were intended to streamline the flow of credit to large companies if they meet the eligibility requirements. The Fed also established the Main Street Lending Program for small- and medium-sized businesses (MSNLF and MSELF) to maintain their operation and payroll. Some argue that these programs could exacerbate fundamental deterioration as corporate leverage will rise such that companies will sell more debt to raise funds which could result in more downgrades (Labonte, 2021; USI, 2021).

The Paycheck Protection Program Liquidity Facility (PPPLF) was introduced to bolster the effectiveness of the Small Business Administration Paycheck Protection Program (PPP) to provide a direct incentive to small businesses to keep their workers on their payroll.

The Municipal Liquidity Facility (MLF) was established to purchase short-term notes directly from states and local governments to help them better manage their cash flow pressure and to continue to serve households and businesses in their communities. The facility stood ready to purchase short-term debt from US states and cities.

5. SUMMARY AND CONCLUSION

COVID-19 has caused tremendous human and economic suffering in the United States and around the world. When the economic outlook deteriorated in early 2020, consumers and businesses rushed to convert their assets into cash. The stockpile of cash and tight bank lending conditions disrupted the financial system. Assets sell-off led to an increase in interest rates and affected both businesses and consumers.

The Federal Reserve acted decisively by deploying its monetary policy tools and opening emergency lending facilities to promote economic and financial stability. It lowered its policy rate to the 0–0.25 range, made overnight purchases, and created emergency facilities. Because interest rates were already low, lowering interest rates provided very little monetary stimulus. To promote more economic stimulus, the Federal Reserve engaged in large-scale purchases of government securities, government agency securities, and mortgage-backed securities, and for the first time, it also purchased commercial mortgage-backed securities. The purchase of these assets increased liquidity and helped the financial system run smoothly. It has also increased public confidence in the Federal Reserve to stabilize the financial system. Because of the measures taken by the Fed, its balance sheet expanded to 8.5 trillion dollars.

The swift policy actions taken by the Federal Reserve and the fiscal stimulus led the economy to rebound back to its long-run track. The Federal Reserve policy helped to facilitate the economic recovery by injecting unprecedented levels of liquidity. However, monetizing much of the new federal debt also risks inflation.

The revival of inflation is an important cause of concern. The disruption of the supply chain caused by COVID-19 and the ensuing consumer spending fueled by the government stimulus and cash available led to a spike in inflation. With inflation surging above the 2% target, FOMC decided to raise its target rate and begin reducing its holding of Treasury securities and thus ending its quantitative easing policy. Keeping the interest rate at zero level bound can help avoid the risk of slowing the economic recovery, especially because of the emergence of Delta and Omicron variants. However, there is also a risk that inflation can be sustained if rapid economic growth overheats the economy and de-anchors inflation expectations.

CONFLICT OF INTEREST

None.

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