Impact of quantitative easing on the U.S. economy

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Abstract. The US economy is facing instability due to high inflation and high credit card debt. Central banks have adopted quantitative easing (QE) as a monetary policy tool to promote economic growth and reduce the risk of deflation. QE measures originated from the 2008 global financial crisis to counter the threat of recession and deflation. This paper examines the impact of quantitative easing on the U.S. economy in four stages through data, image analysis and collection of related literature. Quantitative easing is a high-risk monetary policy. However, while quantitative easing stimulates the economy by lowering interest rates, it can also lead to inflation and borrowing pressures. This paper applies a combination of qualitative analysis and quantitative analysis, has been about the theory of monetary policy on the basis of the process of successive QE is summarized, and the Federal Reserve's aggressive interest rate hikes in the past two years to review. Finally, this paper analyzes the impact of QE, an unconventional monetary policy on the economy, and analyzes the future forecast. The research in this paper can be a certain reference for the monetary policy to cope with the crisis and unconventional situations.

Keywords: Quantitative easing, Global financial crisis, U.S economy, Interest rate.

1. Introduction

The current state of the U.S. economy, in addition to the high inflation rate that continues unabated, other data and facts show the instability of the U.S. economy. Data from the Federal Reserve Bank of New York show that Americans' credit card card debt totaled $986 billion in the first quarter of 2023, the highest amount since the New York Fed began tracking it in 1999 [1]. As of the first quarter of 2023, Americans owed $1.78 trillion in federal and private student loan debt [26]. As interest rate hikes rise, the risks associated with U.S. CommercialRealEstate (CRE) are trending toward accelerated outbreaks, escalation, and spillover. Of the nearly $6 trillion in CRE debt, about half is bank loans and is relatively concentrated in small and medium-sized banks. For small and medium-sized banks, commercial real estate loans account for nearly 30% of their total assets [1]. With the current policy ineffective, the Fed needs to consider other monetary policies, such as quantitative easing. Quantitative Easing (QE) refers to a monetary policy instrument employed by central banks with the aim of fostering economic expansion and mitigating the risks associated with deflation. The origins of this strategy can be attributed to the global financial crisis that commenced in 2008, which resulted in numerous nations experiencing economic downturns and disruptions in financial markets. During the period of the financial crisis, a considerable number of banks and financial institutions faced the imminent threat of insolvency, resulting in a constricting of credit markets and challenges in securing loans for both businesses and individuals. Furthermore, the decline in economic activity resulted in the potential threat of deflation, characterized by a decrease in prices and a subsequent decrease in consumer buying capacity. In light of these challenges, numerous central banks initiated the adoption of quantitative easing measures.

The definition and purpose of the quantitative easing programme are first explained in this document. Four separate phases of the implementation of quantitative easing (QE) are introduced in the text. This study looks at how the US economy was affected by the four phases of quantitative easing (QE). In order to do this, an analysis of Federal Reserve data on interest rates and inflation rates from 2008 to 2020 is conducted. In addition, it assesses the benefits and drawbacks of each phase in order to ascertain the total impact of quantitative easing on the American economy.

The second section of the paper is titled "Basic Facts Analysis," followed by a section on pros and cons analysis, a section on how QE affects the economy, and a section that concludes the entire essay.

2. Basic Facts Analysis

2.1. Definition of quantitative easing

Central banks, including the Federal Reserve, use a monetary policy strategy known as quantitative easing, or QE. The goal of quantitative easing (QE), a monetary policy tool used by central banks, is to lower interest rates, increase the money supply, and promote lending to individuals and businesses by purchasing securities [2]. The principal aim is to promote economic activity during a financial crisis and guarantee the ongoing accessibility of loans. By buying government bonds and other securities, central banks add to the amount of bank reserves in the economy in order to carry out quantitative easing. By increasing the money supply, interest rates are lowered more significantly and the banking industry is given more liquidity, which allows banks to offer loans under more advantageous terms.

2.2. How does QE work?

The devaluation of asset prices brought on by market volatility has made it harder to get loans. American consumers were severely impacted by the sudden drop in the value of their residential properties, which led to the loss of a large amount of their perceived home equity. The increasing levels of debt led to a notable decrease in consumer spending. Simultaneously, the organizational issues that investment banks face have spread to include commercial banks. The ambiguity around the values of their assets was the main cause of the balance sheet's deteriorating. The combination of increased commercial bank risk aversion and the number of investment bank failures led to an increase in borrowing costs. There was a natural decline in the overall credit flow, which decreased demand for goods that require financing [3].

Consequently, the economy has entered a self-sustaining cycle. Businesses and families both showed a decrease in economic activity as a result of the drop in asset prices. This showed up as a decline in the quantity of homes that families bought and a delay in the capital expenditure by businesses for increased output. As a result, the decline in asset prices and economic activity continued.

Prior to everything else, the Federal Reserve purchases assets. The central bank uses freshly produced bank reserves known as quantitative easing (QE) to purchase long-term Treasuries from well-known financial institutions, commonly known as primary dealers, through open market operations. when there is a sudden inflow of fresh money into the economy. Financial institutions gain access to more cash reserves as a result of these transactions, which gives them the ability to hold onto the money, lend it to people or businesses, or use it to buy other assets. In this case, the financial system's liquidity is increasing. when lending becomes less accessible or when borrowing requirements rise. The regular operation of the financial markets is ensured by this approach. Bondholders receive lower returns when interest rates decline and the Federal Reserve buys large quantities of Treasury bonds and other fixed-income assets. This phenomenon causes bonds to appreciate in value. Lower interest rates have the effect of making borrowing money less expensive, which encourages people and businesses to take out loans for large expenditures and so promotes economic growth. Investors adjust their asset portfolios as a result. Investors tend to shift their investments towards assets with higher returns, such stocks, as a result of the declining yields on fixed income assets. There's a chance that quantitative easing may lead to significant gains in the overall stock market.

In the end, people's confidence in the status of the economy is growing. By implementing quantitative easing (QE), the Federal Reserve has given assurance to financial markets and the economy as a whole. Both consumers and businesses are more likely to take out loans, make stock market investments, hire more employees, and spend more money overall. These elements are all involved in boosting the economy.

2.3. QE1-QE4

The United States implemented four quantitative easing programmes from 2008 and 2020. These programmes are referred to as QE1, QE2, QE3, and QE4, respectively. The execution of quantitative easing through the Federal Open Market Committee's (FOMC) interest rate lowering and the US federal government's purchase of Treasury bonds was the fundamental similarity between all four quantitative easing programmes. An outline of the many stages of quantitative easing that the US has instituted is given in this section. The United States implemented four quantitative easing programmes from 2008 and 2020. These programmes are referred to as QE1, QE2, QE3, and QE4, respectively. The execution of quantitative easing through the Federal Open Market Committee's (FOMC) interest rate lowering and the US federal government's purchase of Treasury bonds was the fundamental similarity between all four quantitative easing programmes. An outline of the many stages of quantitative easing that the US has instituted is given in this section.

2.3.1. QE1

"QE1" is the initial phase of quantitative easing as implemented by the Federal Reserve. The Federal Reserve greatly expanded its regular open market operations at this time. The entity purchased the debt from financial institutions with which it was linked. The debt was made up of consumer loans, Treasury bills, bonds, and notes, as well as mortgage-backed securities. The New York Federal Reserve Bank's trading department is where the Federal Reserve used to acquire the aforementioned assets [4].

The Federal Reserve declared the start of Quantitative Easing 1 (QE1) on November 25, 2008. Ben Bernanke, the chairman of the Federal Reserve, announced a proactive strategy to confront the 2008 financial crisis. $100 billion in various forms of debt and $500 billion in mortgage-backed securities were purchased by the Federal Reserve [5]. The securities were insured by Freddie Mac and Fannie Mae. These two government-established organisations aim to stimulate the housing market [6]. In December 2008, the Federal Reserve proceeded to decrease the federal funds rate to almost zero while bringing down the discount rate to 0.5% [7]. Even more, the Fed started giving banks interest for meeting reserve requirements. By then, every significant tool available to the Fed for implementing an expansionary monetary policy had run its course. Consequently, the central bank turned to quantitative easing as its main instrument to end the crisis [4]. The Federal Reserve's record-breaking $1.75 trillion in securities holdings at the start of 2009. The central bank decided to extend the first round of quantitative easing (QE1) in response to the worsening economic conditions in an effort to counteract the recession's deepening. In that same month, it was announced that an extra $750 billion in mortgage-backed securities, $100 billion in Fannie and Freddie debt, and $300 billion in longer-term Treasurys were to be purchased over the course of the next six months [8].

2.3.2. QE2

QE2 lasted seven months, from November 2010 to June 2011. Upon its debut, the Federal Reserve declared its intention to acquire $600 billion worth of Treasury bills, bonds, and notes by March 2011. The Federal Reserve's holdings of assets had a notable expansion during the period from November 2010 to June 2011, with an increase from slightly above $2 trillion to beyond $2.6 trillion, as figure 1 showed below [9].

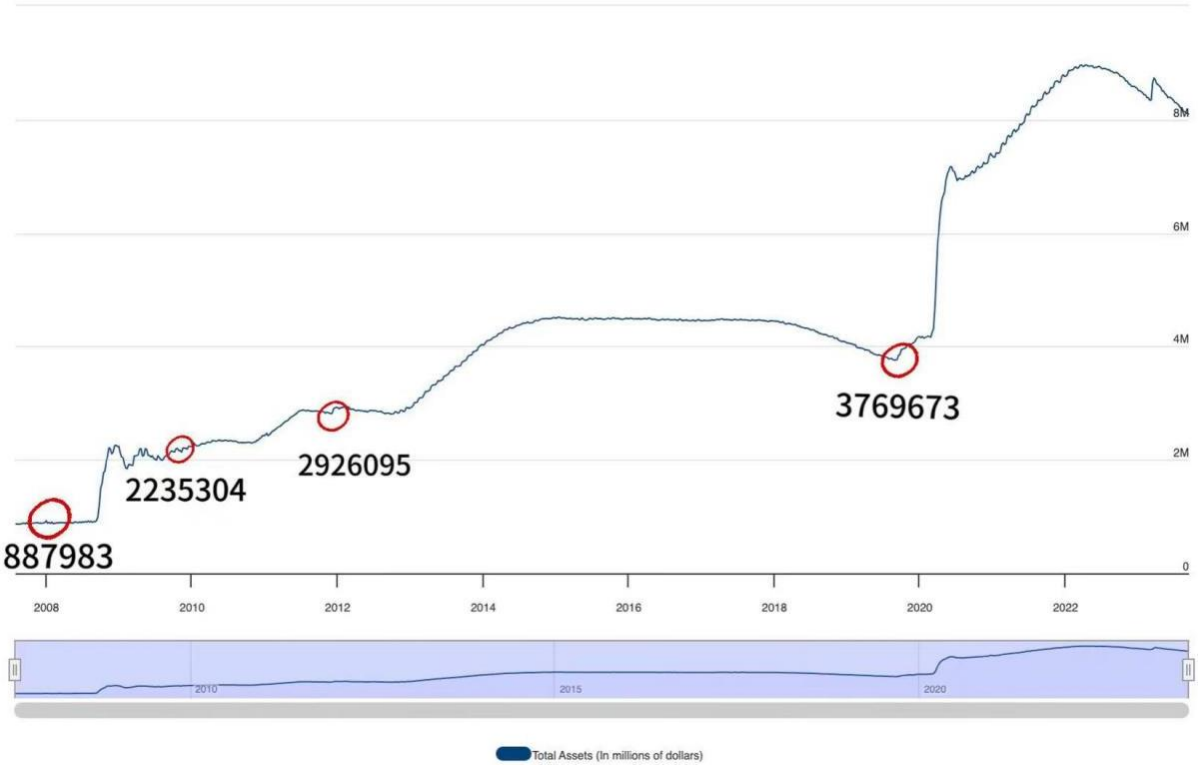


Figure 1. Total Assets of Federal Reserve

The Fed purchased bank securities to maintain interest rates low. This typically motivates them to lend more, boosting the money supply and economic development. The Fed desired that banks lend more, but this did not occur. However, banks retained the extra credit. It was used to write off foreclosures and saved for emergency situations. After the recession, banks reported a dearth of creditworthy applicants. Since 2007, many lenders have tightened their requirements to prevent poor debt, but they have not stated this.

2.3.3. QE3-QE4

The Federal Reserve launched its third round of quantitative easing, or QE3. The initiative ran from January 2013 to October 2014 [10]. In order to carry out QE4, the Federal Reserve created credit and bought U.S. Treasury bonds with an extended duration. Every month, the Federal Reserve bought $85 billion worth of Treasury securities from member institutions through its Trading Desk, which is located at the New York Federal Reserve Bank [11]. The nation's central bank first focused on the unemployment rate during QE4. This suggests that there were two goals for the Federal Reserve. The goal was to reduce the risk of inflation and promote economic growth at the same time. Before then, the Federal Reserve has prioritized containing inflation above fostering employment expansion.

2.4. The current progress of the Fed rate hike

In order to effectively contain inflation, the Fed must carry out further rate hikes, as evidence of lowering inflation is being closely examined by policymakers in addition to the robust performance of the labour market and economy. Powell (2023) simultaneously hinted that the Fed might decide to keep interest rates unchanged at its September meeting as officials evaluate the new data as well as the changing risks and outlook. Powell has also reaffirmed the central bank's commitment to maintaining a suitably strict monetary policy stance to drive inflation towards the desired 2 percent. However, he has also highlighted the cautious approach taken by policymakers in deciding whether to continue tightening or to hold the policy rate steady while they await additional data. As illustrated in Figure 2, the U.S. interest rate is currently 5.25–5.5%, indicating a growing trend.

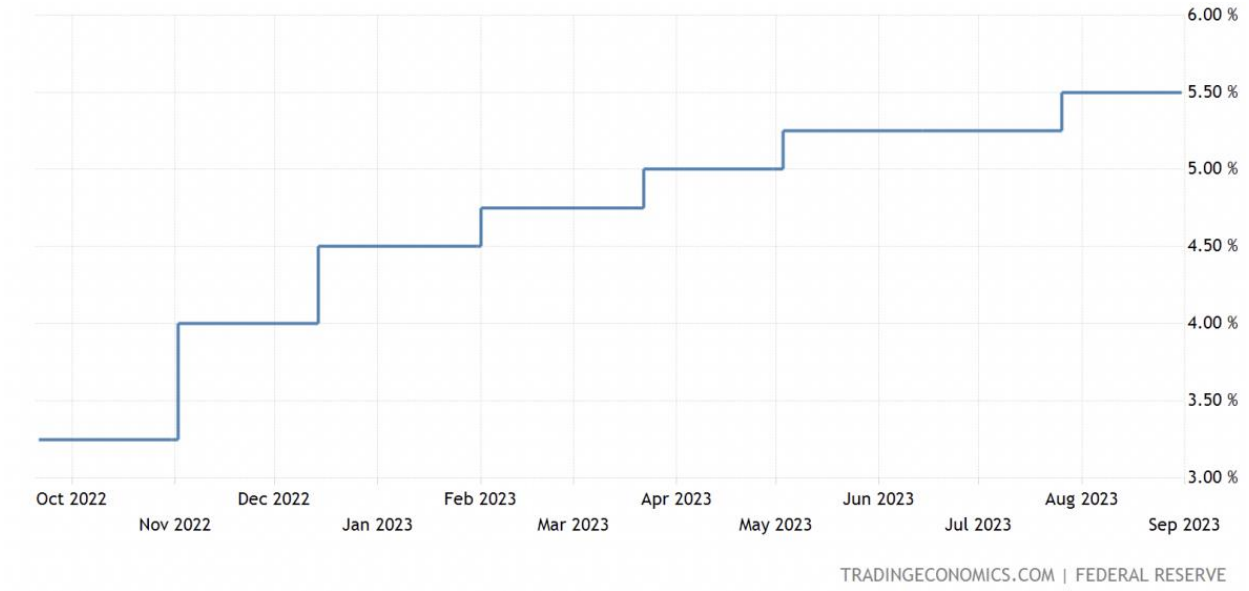


Figure 2. Interest Rate of federal Reserve

The US Federal Reserve increased its benchmark rate by 25 basis points to 5.25–5.5% on Wednesday in line with expectations. In an effort to combat persistent, high inflation, this raises US benchmark interest rates to their highest point since 2001[12]. Over the long term, the Committee aims to attain maximum employment and inflation at a rate of two percent. The Committee resolved to increase the federal funds rate target range to 5-1/4 to 5-1/2 percent in order to support these objectives [12]. On the other hand, FOMC projects that the interest rate will ultimately hover around 2.5% [13].

3. Pros and Cons analyzing

3.1. The economic consequences of QE1 and QE2

Quantitative easing is a non-traditional monetary policy that central banks have implemented in reaction to the present economic challenges. It is seen by some analysts as an expedient means of stimulating a nation's economy during periods of severe economic turmoil. The enactment of quantitative easing offers the variety of benefits listed below.

Firstly, it is important to consider the concept of low-risk lending with regard to banks. Quantitative easing is most frequently employed in economic contexts when interest rates are gradually declining to zero. Particularly in light of the current low interest rates, increasing banks' reserves helps to lower the economic risk associated with banks' lending to the general public. The second argument promotes consumer expenditure. Achieving market equilibrium through increased consumer spending and investment fund availability and attractiveness is the main goal of quantitative easing. Lower interest rates make it more likely for private and business borrowers to be approved for loans for purchases, which stimulates the economy. The third component is responsible for the increase in asset prices. When implemented, quantitative easing programmes raise the value of bonds by substituting funds that prior bondholders can use to reinvest in other securities on different financial markets.

Even while quantitative easing may jeopardise the long-term stability of the financial system, it is nevertheless a significant and comprehensive policy intervention meant to foster rapid economic expansion.

First, QE could lead to inflation. It is comparable to bringing money into circulation—which can lower bond yields and cause inflation—to create money out of nothing. Inflation is the gradual rise in prices for goods and services over a given period of time. It devalues money, such as the US dollar, with the result that living expenditures go up. Second, there is stagflation. Tagflation is the term for

an increase in prices for goods and services without a corresponding improvement in the state of the economy. The purpose of the central bank's acquisition of financial assets is to enable external investment. That being said, there's no assurance the plan will succeed because people tend to save less during a deep recession or global financial catastrophe. Furthermore, quantitative easing affects a country's currency value. Quantitative easing (QE) has the ability to depreciate a country's currency dramatically in the event that other countries forego QE. This implies a decrease in the number of products that one unit of money can purchase abroad, or the foreign buying power of a country's currency.

3.1.1. QE1

While QE1 had numerous major flaws, it was mostly effective. There are many benefits to using QE1. At first, financial institutions received liquidity infusions from the Federal Reserve. Moreover, the Federal Reserve is able to create "money creation," which helps banks weather the negative consequences of the subprime mortgage crisis. Moreover, the introduction of QE1 had a significant effect on the decline in interest rates. Low borrowing rates helped to keep the housing market afloat.

Still, QE1 is not perfect. The main problem was that it didn't work to make banks lend. The Fed did not operate as planned because it lacked the power to force banks to lend it. Second, there was an unprecedented amount of potentially dangerous assets on the Fed's balance sheet. Experts began to worry that the subprime mortgage issue had been taken on by the Federal Reserve. They were afraid that the company would be bankrupted by the large amount of bad loans, just like they had bankrupted banks. Nonetheless, the Federal Reserve can print money indefinitely to pay off any dangerous debt. It might wait for the debt to improve until the real estate market did. These "bad" loans then became "good" ones at that point. They had enough collateral to keep themselves afloat. This naturally brought up the third problem with quantitative easing. In the end, inflation or maybe hyperinflation could result from it. As the Federal Reserve prints additional money, the value of existing dollars declines. This lowers the buying power of all currencies over time. In turn, this leads to inflation.

On the other hand, the Federal Reserve sought to produce a modest degree of inflation. This phenomenon can be explained by its function in reducing deflationary pressures in the real estate market, which is marked by a notable 30% decrease in prices from their 2006 peak [14]. Not until the economy is functioning well does inflation occur. The Fed would have preferred to have that issue. During the same time span, the assets listed on the Fed's records would have grown in value. The Fed would sell them with no reluctance at all. The money supply would be reduced and inflationary pressures would be reduced as well by selling assets. Figure 3 illustrates how QE1 reduced interest rates by nearly one full percentage point. Rates for a 30-year fixed rate mortgage decreased from 5.21% in April 2010 to 3.98% in November 2011 [15].

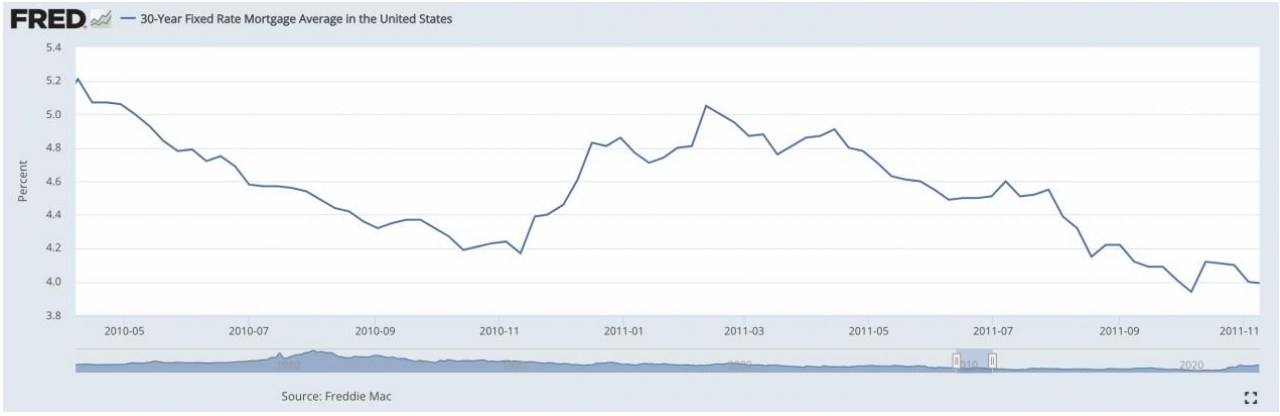


Figure 3. 30-Year Fixed Rate Mortgage Average in the U.S.

The housing market remained sustained due to the presence of these low rates. Furthermore, they compelled investors to explore alternate options. Unfortunately, there were instances where the reliance on oil and gold led to a significant surge in prices. However, the historically low interest rates played a crucial role in facilitating the revival of the American economy.

3.1.2. QE2

The Fed's Refocus Was Caused by the QE2 Programme. The Fed's QE2 programme was an attempt to induce moderate inflation. When prices gradually and consistently rise over time, buyers are more likely to buy now to lock in the present price. First, QE2 kept interest rates low in order to encourage lending. The Fed's policy of encouraging mild inflation also averted deflation. However, QE2 was insufficient to persuade banks to lend money. Rather, investors created commodity bubbles in gold and other commodities.

When the Federal Reserve announced QE2, investors began purchasing Treasury Inflation Protected Securities (TIPS). Many people began buying gold as a means of protecting themselves against inflation. Gold prices rose sharply as a result of the asset bubble's inflation, peaking at $1,895 per ounce in September 2011[17]. The Fed ended QE2 in June 2011. It increased the value of its securities to $2.6 trillion [18]. Investors would have preferred if the Federal Reserve had raised interest rates or sold off its holdings. The people polled were more concerned about inflation than the state of the economy.

3.2. The consequences of the current rate hike

In an effort to combat chronic U.S. inflation, the Federal Reserve increased its benchmark interest rate by 0.25% to 5.5% at this time, the highest level in 22 years. After a decline of 12 months, consumer prices increased by 3% in June. Although the yearly inflation rate is at its lowest point in nearly two years, the Fed intends to bring it down below 2% [19]. By increasing interest rates to make borrowing and investing more costly, the Fed hopes to decrease the demand for labour, products, and services in the economy.

Raising the federal funds target rate is part of the Federal Reserve's strategy to increase the cost of lending overall throughout the economy. High interest rates drive up the cost of loans for businesses and individuals alike, which means that interest payments must be made at a larger pace. The interest rates that commercial banks charge one another for short-term borrowing are directly impacted by the federal funds rate. An increase in interest rates translates into higher borrowing costs, which could cause banks and other financial organisations to become less interested in borrowing money. Individuals who choose to postpone financially demanding endeavours because they cannot or will not shoulder the additional expenditures. At the same time, it encourages people to save money so they can earn higher interest rates. As a result of this action, the money supply in the economy is reduced, which lowers inflation rates and modifies economic activity. This phenomenon is known as the "economic cooling effect."

The high interest rate causes the unemployment rate to rise, but it can also cause the inflation rate to fall in order to reach a level below 2% [20].

4. How does QE impact the economy?

Selecting QE also sends a powerful message to markets, as central banks such as the Fed do. They are announcing to the market players that they will not hesitate to keep purchasing assets in order to maintain low interest rates. The programme known as quantitative easing (QE) showed some degree of success in fulfilling some goals, but failed to achieve others and simultaneously created several asset bubbles. When hazardous subprime mortgages were taken off bank balance sheets, confidence was first restored, and banking operations were then enhanced. It also had a significant impact on stabilising the US economy by supplying the required funding and boosting confidence, both of which helped the nation recover from the crisis. Additionally, it kept interest rates low enough to encourage the housing market's revival. This explains why QE1 was seen as a success because it successfully lowered interest rates by almost one percentage point [21]. Moreover, one could contend that even though the Federal Reserve may not have achieved all of its goals, the way this policy has been implemented has stimulated economic growth. Although the banks were given the funds, they decided

not to use them. As an alternative to using the funds for lending, banks decided to use stock buybacks and dividends to raise the price of their shares, which caused it to climb threefold.

Contrary to popular belief, the quantitative easing (QE) strategy did not lead to the expected widespread inflation. Nonetheless, because money became more accessible as a result of the interest rate reduction strategy, asset bubbles did develop. An asset bubble occurs when the price of a specific asset, such real estate, rises far above its fundamental value. For example, the housing bubble—which was sparked by quantitative easing (QE)—led to a notable increase in real estate values. Still, the rising costs showed a disconnection from the homes' inherent worth.

The gross domestic product, or GDP, is the total monetary or market worth of all completed goods and services produced inside a country's borders over a specific period of time. Because it is a broad indicator of total domestic production, it provides a comprehensive evaluation of the status of the economy in a given country [22]. The whole amount of public and private consumption, government spending, investments, growth in private inventories, paid-in building expenses, and the international balance of trade are all included in determining a nation's GDP. The value is increased by exports and decreased by imports [22]. According to research study methodology, the actual impact of quantitative easing (QE) on GDP and inflation remained modest and very variable, with findings indicating that QE had an impact on GDP ranging from 0.2% to 1.5% and on inflation from 0.1 to 1.4% [23]. There is disagreement over research regarding how quantitative easing policies affect the overall economy. Estimates indicate that the GDP increased by 2% overall as a result of the first three quantitative easing programmes. Regarding the impact of quantitative easing programmes on GDP, other estimates differ significantly. The effects of quantitative easing on consumer confidence, stock prices, and inflation have not been conclusively studied.

5. Conclusion

A non-traditional monetary strategy called quantitative easing (QE) is used by central banks to boost economic growth in times of economic uncertainty. It entails lowering interest rates, encouraging loans with low risk, boosting consumer expenditure, and raising asset values. But quantitative easing (QE) can also cause stagflation, inflation, and depreciation of a nation's currency, which could endanger the stability of the financial system in the long run.

The evidence in the essay suggests that the negative effects of quantitative easing on the US economy outweigh the positive ones. Because of the complex interactions between a number of factors that impact the economy, such as macroeconomic dynamics and current market conditions, a number of scenarios emerge that are difficult to forecast, which makes it difficult for people to make traditional quantitative easing evaluations. It is possible that worst-case situations will result in economic disruption and a rise in unemployment rates.

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