# Comparative Analysis of the Impact of Quantitative Easing on the United States and Japan

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**Abstract.** Quantitative easing is a nonconventional expansionary policy that has been used in times of economic downturns. It has significantly impacted different economies in the past. In these past years, Covid-19 has had a huge influence over the world and negatively affected the economy, it has brought society's attention to quantitative easing as a solution to recession. This article uses a comparative analysis of historical data (federal funds rate, bank balance sheet, etc) to analyze the impact of past quantitative easing on the economy in the US and Japan. The result is that in both economies, past QE is effective in helping the economy recover in a short time. The reason behind the policy-making decision and the result of quantitative easing in the US and Japan is very similar, the strategy while implementing quantitative easing is also identical. Proving that QE has a similar impact on the US and Japan's economic system. This indicates that in the future other countries can take into consideration of QE's effect on the US and Japan when making economic decisions.

**Keywords:** Quantitative easing, Covid-19, United States, Japan.

## 1. Introduction

Quantitative easing (QE) is an expansive monetary strategy that permits the central bank to buy securities to boost the amount of money in circulation. The purpose of such policy is to further reduce long-term interest rates when interest rate and federal funds rate cannot be lowered by other conventional expansionary policies. Due to the large number of government bonds involved, authorities usually don't resort to quantitative easing when the economic problem can be solved by other monetary policies. QE in history has had a huge impact on different economies, however, whether those impacts are universal among different countries remains questionable. Since 2020 the Covid-19 pandemic, countries all over the world have experienced different levels of depression, quantitative easing seems to be an ideal policy to help the economy to recover. Therefore it is important to know will Quantitative easing have a similar effect on a certain country compared to the countries that have already implemented quantitative easing before. This article tries to compare the effect of quantitative easing on the US and Japan's economies using historical data to find the similarities and differences. This will help future policymakers to make better decisions as they can have better expectations of QE's effect based on how identical the country is to the US/Japan economy.

## 2. QE's Impact on World

### 2.1 QE's Impact on the US

#### 2.1.1 QE during 2008

The United States expands the supply of base money to carry out quantitative easing programs, thereby imposing seigniorage on the world. The U.S. was able to increase its fiscal spending and maintain its deficit policy due to this policy, but it also resulted in the continued depreciation of the dollar, a sharp increase in the prices of primary goods around the world, and a sharp decline in the market value of the country's foreign debt. This section of the article will demonstrate how quantitative easing impacts the US economy through the F1ederal Reserve's action during 2008 and 2020's quantitative easing.

QE during 2008-2014 was in response to the 2008 financial crisis. The United States had its sharpest recession since World War II during the financial crisis of 2008, with a 4.3 percent decline in gross domestic product. The Fed made the decision to utilize quantitative easing to avert the crisis because existing instruments of expansionary policy were no longer effective. The Federal Reserve (Fed) unveiled QE1 during the Federal Open Market Committee meeting on November 25, 2008, announcing that it will buy mortgage-backed securities (MBS), U.S. Treasury notes, and bank debt totaling $600 billion from member banks. The Fed thought that further money was needed after QE 1. Almost $4 trillion was added to the money supply and the Fed's balance sheet through the Fed's four rounds of quantitative easing. It was the biggest expansion from a stimulus package in history up until 2020. In November 2008, the Fed's balance sheet was less than $1 trillion; in October 2014, it was $4.4 trillion. The balance sheet more than doubled [1].

**Table 1**. Total assets of the federal reserve

| Dates | Total assets (millions of dollar) |
|---|---|
| 30-Jul-2008 | 918625 |
| 8-Oct-2014 | 4450260 |

The overall result of QE 2008 was ideal. The United States economic recovery has benefited greatly from quantitative easing, which has increased base currency supply, collected seigniorage, and assisted the government in raising fiscal expenditure. This unconventional policy did save the US from a depression worse than the Great Depression. The Federal Reserve's balance sheet significantly grew as a result of the central bank's massive asset purchases and thus helped the US to recover from the 2008 recession. Since QE1 was launched, the federal funds rate has significantly dropped and has remained low for a long period of time.

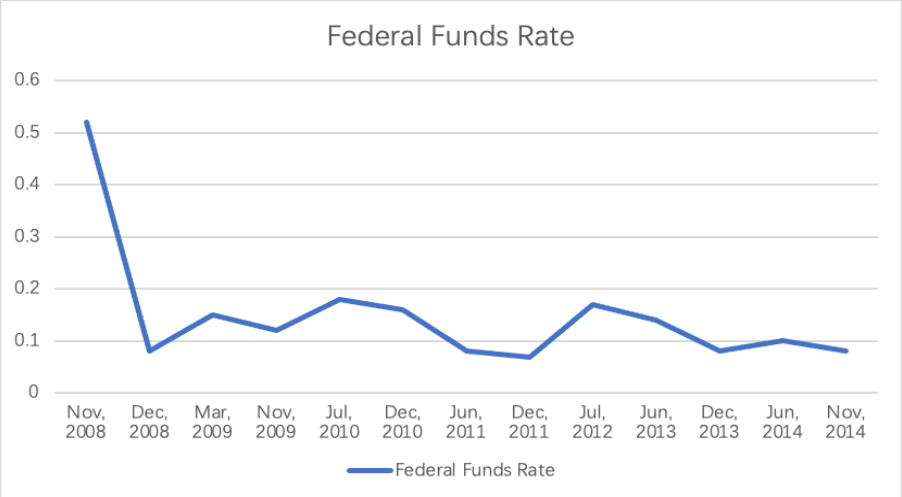


**Fig. 1** US federal funds rate

Because of the low fed funds rate, both consumers' and companies' interest rates are low.This helped the economy as customers can now benefit from this low federal funds rate by refinancing their mortgages, vehicle loans, or credit cards. Banks that borrow money at low interest rates can now pass the cheaper cost of debt on to consumers. A downside of the lowered fed interest rate is that the government can now borrow and spend inexpensively. Through 2008 to 2009, the US public debt has reached near 20 trillion and causes worry that once the Fed leaves the government market, the government is unable to pay such a big number [2,3].

### 2.1.2 QE during 2020

Another example of how quantitative easing has helped the US economy during the crisis is the Fed's quantitative easing policy in 2020. The widely dispersed new coronavirus (Covid-19) has been declared a global pandemic on March 11, 2020, by the World Health Organization. The pandemic has imposed many restrictions in order to restrict the spread of the virus, such as travel bans, lockdowns, and mandatory closure of non-essential businesses. These restrictions on economic activities all negatively impacted the economy in general. In response to the negative impact of Covid-19 on the financial market and the economy, on March 15, 2020, it is announced that Mortgage-backed securities worth $200 billion and Treasury securities worth $500 billion will be purchased as part of the Federal Reserve's quantitative easing program. Soon after on March 27, 2020, in order to aid the economy's recovery from the epidemic, President Trump signed an economic relief package (the Coronavirus Aid) and Congress passed the CARES Act, totaling more than $2 trillion [4].

Just like QE in 2008, QE 2020 also did help the US economy to recover from the pandemic. Before the WHO declared COVID-19 to be a pandemic on March 11, 2020, most industries had already had negative anomalous returns. However, with the release of the quantitative easing plan by the Fed on March 15, 2020, and the passage of the Cares Act by Congress on March 27, 2020, these negative returns by industries didn't last for a long time. From the sampling of 49 industry portfolios, most industries experienced negative cumulative abnormal returns after 10~30 days since the WHO announced Covid-19 as a global pandemic [5]. However, 60 days after the announcement these industries have positive cumulative abnormal returns, indicating that the announcement of the quantitative easing plan and the CARES Act was effective in boosting industries' confidence.

Compared with the situation in 2008, many industries that were performing well at the time were also experiencing negative abnormal returns as they are affected by the bank's corrupt event. Even after Congress approved the bailout plan on October 3, 2008, many industries took a period of time to recover. However, we can plainly observe that the industries began to recover from their poor results after the introduction of QE1 in November 2008. Both the 2008 financial crisis and the 2020 global pandemic are events that have negatively affected the US economy and financial markets. Individuals and businesses all suffered during these two time periods. As the evidence listed above, it is reasonable to say the QE is effective both in helping the economy as a whole to recover and also boosting investor confidence in the US economy.

## 2.2 QE's Impact on Japan

Early quantitative easing monetary policy boost in Japan is not immediately apparent. Japan has adopted the quantitative easing monetary policy in line with the United States since the financial crisis in an effort to help the economy recover. but the more cautious effect of the policy promotion is relatively not obvious. According to the Japanese government's monthly report from March 2001, the country is experiencing "moderate deflation." Both the Japanese government and the bank of Japan did not recognize the 1% deflation as mild deflation before the announcement [6]. A week after the announcement, Japan has begun its unconventional monetary policy--quantitative easing. During the QE process, with the acquisition of around 18 trillion yen worth of government bonds, the bank reserve grew from 5 trillion yen to 32–35 trillion yen. The limit on holdings of government bonds was set at the number of notes held by the Bank of Japan prior to the first round of QE. However, the Bank of Japan notes regulations were implemented with the intention of preventing the easy monetization of the budget deficit. Therefore, quantitative easing in this case was executed as a conventional policy, as the Bank of Japan believed that the liability side of currency insurance was supported on the asset side by long-term assets. The result of QE at this stage is that the Japanese economy fell into a recession again, with continuous negative growth in real GDP, sluggish foreign trade, declining exports, widening commodity trade deficit, and the consumer price index's annual growth rate started to decline. Shinzo Abe, the prime minister of Japan, has suggested a series of economic stimulus measures, the centerpiece of which is the implementation of the quantitative easing monetary policy. These measures include unrestricted monetary easing, greater government

spending, structural transformation, and ardent advocacy for its adoption. By purchasing bonds and other assets on the open market, the Bank of Japan has started a fresh round of significant quantitative easing with the goal of doubling the base money supply. By introducing liquidity into the financial system, banks are compelled to lend at reduced interest rates, boosting the amount of money in circulation throughout the economy, encouraging investment, and aiding the nation's economy in its recovery.

**Table 2**. comparison of the Bank of Japan balance sheet

| **Balance sheet** | **2013.3.31** | | **2007.1.10** | |
|---|---|---|---|---|
| **Property** | **AMT** | **PROPORTION** | **AMT** | **PROPORTION** |
| Gold | 441,253,409 | 0.27% | 441,253,409 | 0.39% |
| Cash | 323,540,126 | 0.20% | 145,197,953 | 0.13% |
| Repurchased assets were not received | 0 | 0.00% | 4,522,297,643 | 4.00% |
| Japanese government debt | 125355626798 | 76.29% | 80,596,414,816 | 71.30% |
| Commercial paper | 1,245,715,573 | 0.76% | 0 | 0.00% |
| Corporate debt | 2,887,292,458 | 1.76% | 0 | 0.00% |
| Stock trust assets | 1,409,805,570 | 0.86% | 1,632,074,491 | 1.44% |
| Exchange rate trust assets | 1,544,000,809 | 0.94% | 0 | 0.00% |
| Real estate trust assets | 117,481,388 | 0.07% | 0 | 0.00% |
| Deposit out-of-insurance credit | 25,487,067,000 | 15.51% | 20,011,800,000 | 17.70% |
| Foreign currency assets | 4,987,209,797 | 3.04% | 5,034,919,366 | 4.45% |
| Institutional deposits | 22,803,167 | 0.01% | 0 | 0.00% |
| Other | 490,506,498 | 0.30% | 653,058,018 | 0.58% |
| **SUMMATION** | 164,312,302,598 | 100.00% | 113,037,167,618 | 100.00% |
| **Liabilities** | **AMT** | **PROPORTION** | **AMT** | **PROPORTION** |
| Bank bill | 83,378,274,888 | 50.74% | 77,114,898,662 | 68.22% |
| Current deposits | 58,128,929,684 | 35.38% | 8,467,211,052 | 7.49% |
| Other deposits | 191,123,604 | 0.12% | 25,180,637 | 0.02% |
| Government deposits | 1,494,128,994 | 0.91% | 6,054,665,494 | 5.36% |
| Unpaid repurchase agreement | 14,505,493,650 | 8.83% | 15,066,549,740 | 13.33% |
| Other | 664,602,618 | 0.40% | 643,847,341 | 0.57% |
| Equity liabilities | 3,237,012,172 | 1.97% | 3,120,815,323 | 2.76% |
| Capital | 100,000 | 0.00% | 100,000 | 0.00% |
| Special statutory reserve | 2,712,636,985 | 1.55% | 2,543,899,365 | 2.25% |
| **SUMMATION** | 164,312,302,598 | 100.00% | 113,037,167,618 | 100.00% |

In response to the latest round of quantitative easing, Japan's economy appears to be accelerating. With the Bank of Japan's new round of quantitative easing, a number of positive economic growth trends have emerged: export competitiveness has significantly improved; external demand and export trade is recovering; manufacturing requests and industrial production have continued to rise; corporate earnings and employment growth have both increased; and in July 2013, the unemployment rate dropped to 3.8%, the lowest level since the financial crisis of 2008. Further boosting domestic consumer demand, a significant rise in the monetary base, and lower long-term market rates have

reduced deflation and had a significant stimulative effect on domestic demand growth, such as private consumption and investment, which has been consistently slow [7,8].

## 3. Comparison between US and Japan

The reason why the US and Japan choose to use quantitative easing when faced with a financial crisis and how they executed this expansionary policy is similar. For both countries, quantitative easing was a solution to further lower interest rates when all the other expansionary policies had been used. In the case of Japan, they first printed money, and bought short-time securities, to lower the targeted interest rate and the federal funds rate. All banks now have more reserves because Japan has raised the amount of currency and reserves in circulation. As a result, there will be less demand for reserves, which will cut the cost of borrowing them and lower the interest rate. When the interest rate reaches zero, this strategy is unable to reduce it further. In order to further lower the interest rate, in this case, there is no use to keep purchasing short-time securities, so Japan decided to keep printing money and purchased long-term Japanese treasuries, and corporate bonds to bring all this newly created money into circulation. This is an act of pure quantitative easing. The process in which the US used quantitative easing is not that different from Japan. The US initially bought short-term securities in an effort to reduce short-term interest rates, increasing the amount of reserve in circulation, and lowering the federal funds rate. When the interest rate and federal funds rate both hit zero, Just like in Japan, the US decided to print more money and use it to buy assets, which the Fed does not traditionally do. However, Ben Bernanke, the Federal Reserve chair at the time, believes that the US is implementing "credit easing" instead of quantitative easing. Bernanke believes that the difference is where you direct the extra money printed. He stated that the end goal for the US is to increase the demand for some types of securities that have caused a problem in the financial debt market and the mortgage-backed security market, while Japan is just printing money to simply add money in circulation. Though mechanically the strategy used by the US and Japan is the same.

For both nations, Quantitative easing is effective in helping the economy to recover from the recession. In the US, the federal reserve used quantitative easing in both economic downturns (2008 and 2020), and it was effective in helping short-term industry confidence, aiding people who were heavily affected by the crisis, and successfully lowered interest rates to help the economy recover. The results from Japan's quantitative easing are similar. However, it is also noticeable that for both nations, QE modestly increases inflation at the same time it boosts GDP. An increase in consumer demand and money supply indicates an increase in inflation since QE promotes economic expenditure [9,10].

## 4. Conclusion

This article has used historical data and comparative analysis to illustrate that the implementation of quantitative easing and its effectiveness in helping the economy to recover from depression in a short time between the US and Japan is quite identical. Both countries picked quantitative easing to solve the current financial crisis to increase the money supply and bring down the interest rate. Through a comparison of the bank balance sheet before and after where QE is implemented, it is proven that QE has helped both countries to fight depression. QE has raised individual and industry confidence, bringing down the interest rate to stabilize the economy. The similar reason for choosing quantitative easing and its similar positive effect on the economy during the recession can be due to some similarities in the US and Japan's economic systems and the close economic relationship between the two economies. For example, the two economies are both developed countries and have relatively market-free economies, integrated via trade, capital flows, and goods and services. Therefore, the similar effect of QE on the US and Japan can be referred to by policymakers when expecting QE's effect in countries that are in a similar economic system as the US and Japan. This can be useful information, especially in this time of pandemic when many countries are looking for

solutions to the economic downturns. However, this article has only compared quantitative easing's effect on the US and Japan. Other countries that have implemented QE before were not taken into account, many negative sides of QE and flaws of this policy might not be taken into consideration. Also, the result of this article might not be suitable for developing countries. In the future, more studies should be done regarding QE in different countries to further include the varieties in the data to more effectively examine the effects of QE.

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