Unconventional Monetary Policy and the Abolition of the Liquidity Trap Hypothesis of Keynes - A Case Study of Japan and the United States of America –

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Abstract

This study aims to highlight the effectiveness of non-traditional monetary policy tools in addressing the economic recession left by the global financial crisis of 2008, as well as the recession resulting from the Corona pandemic, and to eliminate the hypothesis of Keynes' liquidity trap, which until recently was a fact and a firm belief. The most important tools of unconventional monetary policy have been introduced: quantitative easing, advance interest rate guidance, negative interest rates, and interest on reserves. The effectiveness of the measures taken in Japan and the United States of America in reducing the economic recession was also analyzed. The study reached a set of results, the most important of which are: the effectiveness of monetary policy in reviving the economy in both the United States of America and Japan, and the abolition of Keynes's hypothesis about the liquidity trap. A set of conditions must be met for the success of unconventional monetary policy, the most important of which is the development of the system, financial markets and the banking system, in addition to the flexibility of the productive system.

Keywords: unconventional monetary policy, liquidity trap, quantitative easing, economic crisis.

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1. introduction

In normal times, traditional monetary policy tools, which expand the money supply and lower interest rates, are sufficient to stabilize the economy, but when the economy faces a large-scale financial crisis, traditional monetary policy instruments cannot achieve their goals. This is because the financial system is so far that it cannot allocate capital for productive uses, so investment spending collapses and a depression in the economy follows. A negative shock to the economy can also lead to a liquidity trap problem, as the central bank cannot reduce interest rates by relying on its policy more, because interest rates have reached the minimum near zero, and interest rates

cannot fall below that, because individuals and financial institutions are not willing to pay costs on the money they lend, and prefer to keep money than pay a cost or get a low return (liquidity preference). Here the economy falls into the so-called "**liquidity trap**".

When the interest rate is close to zero, monetary policy cannot lower it further, it is ineffective. Where Keynes stated in his famous book "The General Theory of Employment, Interest, and Money":

"**after the rate of interest has fallen to a certain level, liquidity-preference may become virtually absolute in the sense that almost everyone prefers cash to holding a debt which yields so low a rate of interest. In this event the monetary authority would have lost effective control over the rate of interest**" (Keynes, 2018, p. 182).

Central banks need non-interest rate instruments, known as unconventional monetary policy tools, to stimulate the economy. Unconventional monetary policy instruments take four forms: liquidity provision, asset purchases, forward guidance, and negative interest rates on central bank deposits.

The problem of the study:

Through the above, the following problem can be raised:

To what extent can non-traditional monetary policy tools reduce the liquidity trap problem and revive the economy in the event of an economic crisis?

Hypothesis of the study:

Unconventional monetary policy tools contribute to the recovery of the economy in the event that interest rates reach the minimum near zero, and get the economy out of the liquidity trap.

Objectives of the study:

The study aims to introduce non-traditional monetary policy tools, and neutralize the extent to which advanced economies have contributed to the exit of advanced economies from the mortgage crisis, and the state of economic recession left by the Corona pandemic, by presenting the policies adopted in Japan and the United States of America in the past decade.

2. Unconventional monetary policy instruments

In times of crisis, central banks need non-interest rate tools to stimulate the economy known as unconventional monetary policy tools, and unconventional monetary policy tools take four forms: liquidity provision, quantitative easing, pre-orientation of interest rates, and negative interest rates on bank deposits.

Quantitative easing

It is an unconventional tool for injecting money into the economy, aimed at lowering long-term interest rates in order to fight a recession, given that interest rates in industrialized countries fell to near zero in the wake of the global crisis in 2008. Ben s. Bernanke defined quantitative easing as an expansionary monetary policy in which the central bank purchases financial assets from private

financial institutions, reducing the returns of those assets while increasing the money supply (BERNANKE, FRANK, ANTONOVICS, HEFFETZ, & NORANDER, 2019, p. 705), a complementary measure to traditional monetary policy. Through it, the balance sheet of the central bank expands with the aim of stimulating the economy (Lindsey, 2016, p. 7). Quantitative easing essentially involves the same steps as open market purchases, but differs from them in the type, quantity, and duration of financial assets purchased, as well as in the overall policy objective. While traditional expansionary policy usually involves buying short-term government bonds in order to keep interest rates at a specific target value, central banks use quantitative easing to stimulate the economy by purchasing assets with longer maturities, thereby lowering long-term interest rates. The central bank's balance sheet is being significantly expanded, buying long-term treasury bonds, commercial debt, and mortgage-backed securities.

If the surplus reserves are low in the banking system, this low size enables the central bank to control interest rates by changing the size of banks' reserves, that is, it has room to maneuver with short-term interest rates to stimulate the economy, if the central bank pushes the interest rate on reserves to drop to near zero, it gives banks an incentive to try to lend their surplus reserves, and get a higher interest rate than money by lending surplus reserves better than earning a return close to Zero as a result of leaving those reserves in the central bank. But zero interest rates, in which the central bank restricts its ability to stimulate the economy through low interest rates, because interest rates below zero, push consumers to withdraw deposits from banks, reducing the banking system's ability to lend.

If the central bank takes measures that will direct interest rates on entering negative territory, it means that the balances of deposit holders will shrink over time rather than grow, and therefore the imposition of negative interest rates necessarily offset by withdrawing deposits from banks, and lead to banking panic, and catastrophic effects on economic activity, because withdrawals will mean that banks will have less money to lend to consumers and investors, negatively affecting aggregate demand and economic growth.

Quantitative easing looks quite similar to open-market purchases of bonds made by the central bank to reduce the money supply, but the goal of quantitative easing is not to reduce the interest rate, because reducing it to near zero may cause negative interest rates, and thus withdraw bank deposits. Therefore, the goal of quantitative easing is to increase the amount of reserves in the banking system, so interest rates will remain low but positive, and the larger amount of reserves should stimulate banks to lend more and thus stimulate aggregate demand. If the internal interest rate by placing optional reserves in the central bank is 1%, under these circumstances banks will not lend to individuals or institutions at an interest rate less than 1% when commercial banks can obtain this interest rate by placing excess reserves in the central bank (McConnell, Brue, & Flynn, 2018, pp. 335-336).

Quantitative easing versus credit easing:

The programs introduced by some central banks in response to the global financial crisis (2007-2008) led to an unprecedented expansion of the balance sheets of these countries, and a significant increase in the monetary base, and since such an expansion will usually lead to an expansion of the

money supply, it is clear that such an expansion can have a significant boost to stimulate the economy in the near term, and may also result in inflation in the future.

This is due to the following reasons:

- The significant expansion of the central bank's balance sheet and monetary base did not lead to a corresponding increase in the money supply, since most of the increase in the monetary base appeared in the form of excess reserves in the coffers of commercial banks.
- Since the interbank rate has already fallen to near zero, expanding the central bank's balance sheet and monetary base cannot lower short-term interest rates further in order to stimulate the economy.
- Increasing the monetary base does not mean that banks will increase lending, because they can only add their excess reserves to their holdings instead of providing new loans.

There have been doubts about the advantages of quantitative easing in being ineffective in stimulating the economy. Fed chairman ben s. Bernanke argued that the policies were not directed at expanding the fed's balance sheet but at easing credit. That is, changing the composition of the balance sheet of the central bank in order to improve the performance of certain sectors of the credit markets.

Changing the composition of a central bank's balance sheet can stimulate the economy. When it provides liquidity to a certain segment of credit markets that have stopped, this liquidity can help liberalize the market, allocating capital to productive uses, stimulating the economy.

Advance Interest Rate Guidance

Although short-term interest rates cannot be cut below zero during crisis periods, there is potential for central banks to cut long-term interest rates, which would stimulate the economy. This trajectory included the commitment of central banks to keep the overnight interbank rate at zero for an extended period of time. Long-term interest rates represent the average short-term interest rates that the public expects to occur over the life of long-term bonds. By committing to the future policy action of keeping the interbank interest rate at zero for an extended period, central banks can lower market expectations for future short-term interest rates, thereby lowering long-term interest rates. This tool is called advance interest rate guidance (cachetti & KermitL.Schoenholtz, 2015, p. 508).

This policy is one of the unconventional policies resorted to by central banks, especially when traditional tools are unable to achieve the set goals, and this policy is based on directing the target rates in the future, where monetary policymakers conduct a predictive study of inflation levels and economic growth in a certain period, through which real interest rates are directed that ensure targeting the rate of inflation and economic growth at normal rates, and the use of this tool may be indefinite, and it is subject to the improvement of commercial activity and the increase in Employment.

The Fed followed this forward-looking guidance strategy when it announced after the FOMC meeting on December 16, 2008, that it would not only cut the rate to near zero, but also ensure exceptionally low interest rate levels for a long time. The committee anticipated weaker economic conditions, and the Fed maintained its commitment to keeping its overnight interest rate near zero

for several years until mid-2015. Although long-term interest rates on Treasury bonds will fall later, it is not clear how much of this decline is due to the Fed's outlook against the overall weakness of the economy.

There are two types of pre-directed interest rate commitments: conditional and unconditional, as the obligation to keep the United States Interbank Rate at zero for an extended period starting in 2008 was conditional, because it was stated that the decision was based on the continued economic downturn, and the obligation was abandoned if economic conditions changed. The Fed could have made an unconditional commitment that it would keep the interest rate at zero for an extended period, without suggesting that this decision might change depending on the state of the economy, and the unconditional commitment is stronger than the conditional obligation, due to the non-waiver of the obligation: to cut interest rates at a certain condition, and is likely to have a greater impact on long-term interest rates (Bernanke, 2020, p. 956).

Negative interest rates on bank deposits

With very low inflation rates and recession in the global financial crisis, central banks in Europe and Japan began to experiment with a new tool for unconventional monetary policy, setting interest rates on deposits held by banks in their central banks to be negative, that is, banks have to pay for holding deposits in the central bank, and the Swedish central bank was the first to set negative interest rates on bank deposits in June 2009, then the Danish central bank in June. 2012, the European Central Bank in June 2014, the Swiss Central Bank in December 2014, and the Bank of Japan in January 2016.

Setting negative interest rates on bank deposits is supposed to stimulate the economy by encouraging banks to lend deposits they held at the central bank, thereby encouraging households and businesses to spend more.

Banks may not be able to deposit in the central bank, but instead convert them into cash, and there will be some cost to do so because banks will have to provide more coffers and hire security guards to protect them.

Loading banks interest on their deposits can be very expensive for banks if they still have to pay positive interest rates to their depositors, the profitability of banks will decrease, and the result may make banks less likely to lend. Instead of being expansive, negative interest rates on banks' deposits, negative interest rates on banks' deposits may cause banks to cut back on lending and thus shrink.

Interest paid on reserves:

It is a new way to influence bank reserves, through which the central bank pays interest on mandatory and/or excess reserve balances held by its commercial banks, so banks have an incentive to keep these amounts at the minimum interest rates and lend them as much as possible above their statutory reserves, and the interest rate paid on reserve balances required by the central bank is determined with the aim of effectively eliminating the implicit tax imposed by the mandatory reserve on depository institutions.

This gives the central bank another tool to control the money supply, if it wants to reduce the money supply, it can increase the interest rate paid on reserves, thus increasing the percentage of reserve deposits because banks will want to hold more of these interest-bearing reserves compared to riskier loans that achieve similar interest rates, and this will lead to a decrease in the money supply and raise the nominal interest rates in the economy in general.

3. Unconventional monetary policy transmission channels

There are several channels for transferring unconventional monetary policy, the most important of which are the following (Hausken & Ncube, 2013, pp. 5-6):

Signal Channel

By announcing large-scale asset purchases, central banks provide information about the likely trajectory of future monetary policies to market participants through the signal channel. Buying a large amount of long-term assets under QE is a credible commitment by central banks to keep interest rates low in the future. This is because if central banks raise interest rates later, they suffer significant losses on the assets they bought under quantitative easing.

Portfolio rebalancing channel

Central banks change the relative supply of financial assets, by purchasing a large amount of assets held by the private sector through quantitative easing programs, and since the underlying funds issued and financial assets purchased under quantitative easing are not ideal alternatives, sellers of financial assets may try to rebalance their investment portfolios by buying other assets that have characteristics similar to the assets sold, and thus this process leads to an increase in the prices of purchased assets as well as the prices of their replacements, and leads to lower premiums. Insurance relevant, so the impact of quantitative easing through the portfolio's rebalancing channel should be more significant on the prices of assets with characteristics similar to those purchased by the central bank.

Asset Price Channel

Large-scale asset purchases financed by central banks under the QE program drive up asset prices by lowering expectations about the future interest rate path and reducing long-term payments, and rising asset prices, on the one hand, increases the net worth of asset holders, on the other hand reduces the cost of borrowing. Both the wealth and borrowing cost effects created by these facilities are expected to increase nominal spending for businesses and individuals, stimulate real economic growth, and reduce the unemployment rate.

4. Analysis of the impact of unconventional monetary policy on the Japanese economy

After the asset bubble burst from the late eighties to the early nineties, the Japanese economy entered a permanent and deep contraction with stagnant production and falling prices, in addition to companies facing both spare production capacity, overemployment, and excess debt. Financial institutions had to grapple with the problem of non-performing loans. Economic policy was stuck in the liquidity trap. All the Bank of Japan's bold efforts at the time were futile, the Japanese

economy could not cope with the deflation, and declining growth caused prices to fall. Higher real interest rates have also led to a further decline in growth. Weak economic growth and contraction have been mutually reinforcing over a long period.

Dealing with the negative legacy of the asset bubble by the mid-2000s, combined with a potential growth rate of about 4% in the early nineties, and a decline to about 1% by the late nineties, and the annual rate of consumer prices fell into negative territory in 1998, and remained negative for the next decade and a half.

On the monetary policy side, the interest rate was cut from 6% in 1991 to 0.5% in 1995. At this point, traditional monetary-policy measures through short-term interest-rate cuts have been more effective. Japan has already fallen into the liquidity trap, and to get out of this trap, the Bank of Japan introduced a negative interest rate policy in 1999, through which the outstanding balance of current accounts held by financial institutions in the Bank of Japan was determined, followed in 2001 by quantitative easing. Thus, the Bank of Japan pioneered the introduction of unconventional monetary policies, though they could not overcome deflation.

In hindsight, we know that Japan faced a simultaneous interest-rate drop accompanied by low inflation. With short-term nominal interest rates approaching the zero minimum, it has been difficult to lower real interest rates to well below the interest rate and achieve adequate monetary easing. As a result, lower growth during this period caused prices to fall, further curtailing growth through higher real interest rates, with weak economic growth and deflation reinforcing each other over a long period.

The 2008 global financial crisis hit the Japanese economy more sharply than that of other countries, and although Japanese financial institutions had already solved the problem of non-performing loans by that time and had only limited exposure to mortgage-related products, Japan experienced a sharper decline in real GDP than in Europe and the United States. Japan's official interest rate at the time was only 0.5%, so there was little room for monetary policy response by reducing it using short-term policy.

This event highlights the importance of an increase in the so-called interest rate by fixing inflation expectations at around 2% and securing the responsiveness of monetary policy, as the Japanese economy falls into a liquidity trap. To overcome this, a new monetary policy was introduced that is completely different from traditional systems. The Governor of the Bank of Japan stated that the monetary policy adopted should be based on two points:

- Work directly on people's expectations or so-called "future guidance", by announcing a price stability goal of 2% and a strong and clear commitment to do whatever it takes to achieve it.
- Direct encouragement of lower long-term interest rates through large-scale purchases of long-term Japanese government bonds.

If inflation expectations rise as a result of the first possibility, and long-term nominal interest rates fall as a result of the latter, real interest rates would be pushed below the interest rate even in the face of a zero minimum.

According to Kuroda's 2017 speech, the new policy stimulated economic activity in both the corporate and household sectors. He noted that Japan has reached almost full employment, with the unemployment rate now below 3 percent. The practice of regular increases in basic wages, which were absent during the second half of the nineties, also affected the economy. A correlation between rising inflation and higher labor wages has begun – so Japan has emerged from the liquidity trap and is no longer experiencing a sustained price decline.

In practice, QE has achieved its desired effects, as inflation expectations have risen significantly after the implementation of QE, and this indicates that the effective monetary policy it has undertaken before the central bank. Large-scale purchases of Japanese government bonds as part of the quantitative easing program have also led to lower nominal interest rates, and lower real interest rates after a long two-decade period, with zero minimum short-term interest rates.

These effects of monetary easing stimulated economic activity in both the corporate and household sectors, the output gap improved dramatically, corporate profits rose to record levels, and the unemployment rate fell below 3%, meaning that Japan achieved almost full employment, thus disappearing the protracted deflation since the second half of the nineties.

If the inflation rate decreases, this will lead to a reduction in inflation expectations, and with the decrease in the inflation rate due to the decline in crude oil prices since the second half of 2014 by more than 70%, and due to the turmoil in the global financial markets in the years 2015 and 2016, this means that inflation expectations It also decreased. The Bank of Japan aims to dispel the deflationary mentality that has become entrenched among the general public. In response to this situation, when the Bank of Japan introduced its “quantitative easing” program in September 2016, the Bank of Japan committed to expanding the monetary base until the annual rate of increase in the CPI exceeds 2% and remains above the target in a stable manner. The idea is that if people are already facing a Inflation is higher than 2%, inflation expectations will rise through expectations. If people witness an inflation rate higher than 2%, this will enhance the credibility of the central bank's announced guidance for price stability and the formation of inflation expectations will become more credible in the future, helping to stabilize Inflation expectations are at approximately 2%.

In the aftermath of the global financial crisis, which saw the asset bubble collapse and severely damage the global financial system, the slowdown in relatively long economic growth, accompanied by low inflation, became an experience shared by many economies. As a result of a bold central bank response based on decades of knowledge and insights gained in economics, a repeat of the Great Depression was avoided and global concerns about deflation largely faded.

5. Analysis of the impact of unconventional monetary policy on the US economy

After the 2008 global financial crisis, the Fed initiated several quantitative easing programs by purchasing large-scale new assets to lower interest rates for certain types of credit. The Fed reactivated quantitative easing programs due to the economic downturn caused by the coronavirus pandemic. The quantitative management programs carried out by the Federal Reserve over the past decade can be presented as follows (Mishkin, 2022, pp. 324-326):

In November 2008, the Fed established the government-sponsored Sector Asset Purchase Program, buying the Fed in $1.25 trillion worth of mortgage-backed securities guaranteed by Fannie Mae and Freddie Mac, in order to support the mortgage-backed bond market, lower interest rates on residential mortgages, and stimulate the housing market.

In November 2010, the Fed announced that it planned to buy $600 billion worth of long-term Treasury bonds at a rate of $75 billion per month, pushing long-term interest rates downward. Although short-term interest rates on Treasury bonds reached zero during the global financial crisis, long-term interest rates did not fall. Since investment projects have a long life span, long-term interest rates are more relevant to investment decisions than short-term interest rates. Long-term Treasury bond purchases were an attempt to stimulate investment spending and revive the economy by lowering long-term interest rates.

In September 2012, the Fed announced a third quantitative easing program, with the Fed making monthly purchases of $40 billion in mortgage-backed securities and $45 billion in long-term Treasury bonds. The third round of quantitative facilitation differed mainly from previous quantitative facilitation programmes in that its objective was not to increase assets by a fixed amount, but rather to procure, until labour market expectations improved significantly.

On March 15, 2020, the Fed opened a new round of large-scale asset purchases, allowing the purchase of at least $500 billion in Treasuries and $200 billion in mortgage-backed securities.

Liquidity and asset purchase programs through quantitative easing programs resulted in an unprecedented quadrupling of the Fed's budget from 2008 to 2014, and a further increase from March 2020.

Programs undertaken by the Fed in response to the global financial crisis led to an unprecedented expansion of the Federal Reserve's budget from about $900 billion to more than $4 trillion by 2014. In response to the coronavirus pandemic, the Federal Reserve has undertaken similar programs in response that led to an additional expansion to more than $7 trillion in July 2020.

The worsening economic contraction prompted the monetary authorities in developed countries since the beginning of the global financial crisis, to reduce their key interest rates, and this expansionary monetary policy reached its maximum limits when the main interest rates approached the minimum level close to zero, which made them fall into the so-called liquidity trap, which is the reason why central banks resorted to new monetary stimulus measures called unconventional policies, in the form of a large liquidity injection or direct purchase of financial assets, through Increase in available liquidity. This measure has enabled banks to increase the loans they grant to institutions and individuals, thus supporting real economic activity. Central banks rely on such measures if traditional monetary-policy transmission channels fail.

By following unconventional monetary policy measures, monetary authorities in developed countries were able to improve economic conditions and get rid of the deflation that occurred in the aftermath of the 2008 global financial crisis, using both quantitative easing programs, pre-directed interest rates and other stimulus programs, at a time when traditional monetary policy tools were unable to do so. Credit markets have improved, growth rates are clearly rising, and the

economy is already emerging from recession. Japan, through an unconventional monetary policy, has managed to get rid of the inflationary recession that the Japanese economy has been exposed to for a decade, as well as the United States of America and some developed countries, these countries have been able to get out of the economic crisis, especially those associated with labor market pressures, and high unemployment rates in an unprecedented manner since the Great Depression. Low interest rates and the unemployment rate have restricted the income of the household sector, which It led to a state of distrust in macroeconomic conditions.

Results

- Advanced economies, especially in Japan and the United States, have managed to emerge from the economic crisis and recession by following unconventional monetary policy tools.
- New monetary policy tools – quantitative easing, advance interest rate guidance, and negative interest rates – have eliminated Keynes's hypothesis about the liquidity trap.
- The success of non-traditional monetary policy instruments is conditional on the availability of well-developed domestic financial markets and an effective information system that enables monetary policymakers to take appropriate actions at the right time. In addition, there must be a flexible production apparatus that responds quickly to the measures taken and to the increase in aggregate demand.
- The biggest risk that countries applying unconventional monetary policy may face is the risk of inflation, given the lack of precise criteria that determine the amount of liquidity needed for the economy.

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