

Japan's Economic Recovery under the Financial Crisis - - Compared with the United States

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Abstract: From 2008 to 2009, the United States ushered in the subprime mortgage crisis, which caused, including but not limited to, the break of bank capital chain, the rise of interest rates, the decline of people's consumption and investment ability, the collapse of the real economy, the closure of many factories, layoffs, and the straight rise of unemployment, which was a global financial crisis. At the same time, Japan is also experiencing a huge economic recession after the bursting of the economic bubble and the recovery of the economy. The subprime mortgage crisis is undoubtedly a shock to the precarious Japan. This paper will collect multiple sets of data, GDP, unemployment rate, house price and so on. It will analyze the similarities and differences between Japan's "bubble economy" and the United States' "subprime crisis" in terms of monetary supply and fiscal policies adopted by Japan in the face of various difficulties.

Keywords: sub-prime crisis, bubble economy, interest rate, monetary policy, fiscal policy

1. Introduction

1.1. The US subprime crisis

The primary reasons can be concisely attributed to the bank's overly permissive loan approval process and the burgeoning real estate market bubble.

In 2001, the Federal Reserve drastically reduced the interest rate from 6.5% to 1.75%, at an average monthly decrement of 0.5%, as a strategy to stimulate monetary liquidity, thereby fostering economic growth and asset appreciation. Concurrently, lending rates declined from 6.9% in 2001 to 4.1% in 2003, further fueled by robust policy incentives. This sparked a surge in American homebuying enthusiasm, gradually elevating housing prices and inflating the real estate market bubble.

Financial derivatives, developed by various financial institutions, were instrumental in triggering the subprime mortgage crisis [1]. With a high demand for home financing, banks capitalized on price differentials by selling loan contracts to other financial institutions at a premium. These institutions subsequently processed and repackaged these contracts into financial products, selling them to investors seeking returns at an even higher price. Investors stood to gain rebates if debtors met their obligations. This chain—profitable for banks, financial institutions, and investors alike—hinged on borrowers' repayment ability. However, due to banks' lax lending criteria in the initial stages, many borrowers found themselves unable to repay, leading to the categorization of their loans as "subprime" [2].

In 2005, to curb economic overheating, the US hiked lending interest rates, significantly exacerbating repayment difficulties for borrowers. Consequently, most subprime borrowers lost their repayment capacity, prompting banks to auction their homes. An influx of houses entered the market, outstripping demand and causing housing prices to plummet. This prompted investors to withdraw from the real estate sector. With banks unable to sell foreclosed homes, funds were not recovered, leading to a capital chain breakdown. As major banks began failing and investor trust in financial markets eroded, more investors liquidated their assets, triggering a stock market crash and widespread panic. Subsequently, banks raised lending rates, increasing borrowing costs, curbing consumption and investment, and further depressing the economy. The culmination of these events was a monumental global economic crisis.

1.2. Japan's bubble economy

After World War II, Japan received assistance from the United States to capitalize on the wave of economic globalization, boasting a highly skilled labor force. Several major corporations swiftly emerged in Japanese society, propelling the manufacturing industry to rapid growth, producing both efficiently and with exceptional quality. Meanwhile, the appreciation of the US dollar made Japanese products, known for their low prices and high quality, highly sought-after in the American market. Consequently, this hindered the US's own industrial development, ultimately leading to a trade war with Japan. The US imposed restrictions on Japanese imports and imposed a 100% tariff on Japanese goods. Plaza Agreement significantly impacted Japan's previously thriving economy [3]. Japan, along with France, the UK, and Germany, was summoned to sign the Plaza Agreement, selling US dollars to depreciate their value and alleviate the US trade deficit. Following this agreement, the yen surged in value, severely impacting Japanese exports and ushering in an economic downturn. Given Japan's mild inflation at that time, the country adopted a policy of interest rate cuts, reducing the rate from 5% to 2.5%. Despite yen appreciation and other factors, this change had minimal impact on the inflation rate [4]. Japan then intensified its expansionary monetary policy, significantly boosting economic development and marking the inception of the Japanese economic bubble.

2. Main Text

2.1. Crisis analysis

2.1.1. Foam formation

Whether it is the subprime mortgage crisis in the United States or the economic bubble in Japan, housing price bubbles have occurred, and the reason for the formation of bubbles is the decline of interest rates. In the United States, it was to fend off the aftermath of the dot-com bust, while in Japan, it was to fend off the post-Plaza economic slump. The increased liquidity created by lower interest rates allowed money to flow rapidly into the housing and stock markets, quickly inflating the economic bubble [5].

2.1.2. Operational process

Ultra-low interest rates incentivize the utilization of leverage for profit. With an initial capital of 100,000, individuals borrow an additional 900,000 from banks to purchase a 1million house. By selling the house the following year at 1.1 million and repaying the \$900,000 loan, they effectively double their assets—a phenomenon known as financial leverage.

American banks sell a significant number of mortgages to institutions such as Freddie Mac and Fannie Mae, who subsequently sell these mortgages to investment banks, which serve as a crucial

technical hub. Investment banks bundle these mortgages into derivative products and market them to other financial institutions or investors. To mitigate risks associated with higher-risk derivatives, insurance measures are incorporated, transforming these products into seemingly safe and low-risk investments. This attracts a surge of participants into the capital chain, creating an illusion of universal profitability and facilitating the flow of money among different entities.

In Japan, the economic bubble was attributed not only to the low interest rates implemented to address the economic challenges posed by the Plaza Accord but also to the financial liberalization policies introduced in the late 1970s [3,5]. Financial marketization broadened the financing options for Japanese companies beyond bank loans, enabling them to raise capital through bond issuance, among other methods. To enhance lending activity, banks gradually extended credit to customers with lower credit ratios, reassured by the soaring housing prices. Consumers, in turn, leveraged their financial means to invest in the stock and real estate markets, aiming to double their assets, thereby further inflating the Japanese economy.

It is evident that excessive lending by banks, fueled by surging house prices, was a pivotal factor in causing bubbles in both countries. Low interest rates further spurred individuals to employ financial leverage for profit-seeking purposes.

2.1.3. Burst of bubble

The bursting of the Japanese economic bubble and the subprime mortgage crisis in the United States were both precipitated by an abrupt surge in interest rates. This sudden increase led to a sharp contraction in liquidity, subsequent depreciation of housing prices, and a default on loans extended by Japanese banks. While the government intervened to bail out the banks, Japan's unique chit-making system, which intertwined the economy, necessitated that banks also rescue the small enterprises under their auspices, ultimately leading to the collapse of the entire Japanese economy.

Similarly, in the United States, the rising interest rates caused numerous lenders to default on their loans, resulting in the disruption of bank capital chains and a cascade of consequences.

It is evident that the abrupt increase in interest rates imparted significant shockwaves to both economies.

2.2. Counter measures

The sharp increase in interest rates in 1989 served as the catalyst that popped Japan's economic bubble. Confronted with a burgeoning bubble, the government implemented a drastic hike, elevating interest rates from 2.5% to 6% that year [3]. This abrupt monetary tightening initially impacted the Japanese stock market, which commenced a steep decline in December 1989. Within two years, the market plummeted from 39,000 points to 17,000 points, marking the onset of Japan's so-called "lost three decades."

2.2.1. Monetary policy

Table 1: Interest rate changes in Japan from 1991 to 1993

date	interest rate
1991-01-01	6.000000000
1991-07-01	5.500000000
1991-11-01	5.000000000
1991-12-01	4.500000000
1992-04-01	3.750000000
1992-07-01	3.250000000

Table 1: (continued).

1993-02-01	2.500000000
1993-09-01	1.750000000

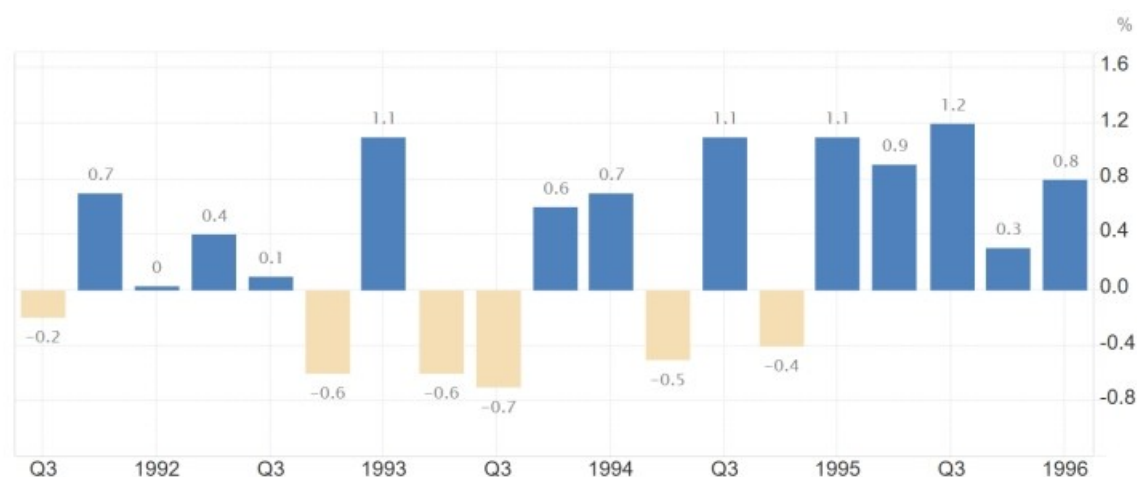
(The data come from: <https://zh.tradingeconomics.com/japan/interest-rate>)



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Figure 1: Interest rate changes in Japan from 1991 to 1995

Japan revalued interest rates by 6% in 1989, which had a strong impact on the Japanese economy and forced it to cut interest rates again in order to stimulate economic development. The rate cuts did not come quickly, starting to decline slowly in 1992 and reaching 1.75 percent in 1994. Down to 1.75%, Japan's interest rate trend paused slightly, and rates remained unchanged in 1994 and 1995.



(The data come from: <https://zh.tradingeconomics.com/japan/gdp-growth>)

Figure 2: GDP Growth rate changes in Japan from 1991 to 1996

Table 2: Unemployment rate in Japan from 1991 to 1996

Country Name	Indicator Name	1991	1992	1993	1994	1995	1996
JAPAN	Unemployment rate in Japan	2.059	2.158	2.539	2.89	3.15	3.383

(The data come from: <https://data.worldbank.org.cn/indicator/SL.UEM.TOTL.ZS?end=1996&locations=JP&start=1991>)

Interest rates at 1.75% have done little to stimulate the economy. Neither the reduction in unemployment nor the increase in GDP has had the desired effect.

The pattern of unemployment is still very severe, it went from 2.9% in 1994 to 3.3% in 1996.

On the other hand, the growth trend of GDP did not change significantly, hovering around zero or even negative growth rate in 1993, and had a small but unstable growth in 1994 under the premise of falling interest rates.

Table 3: Interest rate changes in Japan from 1991 to 1995

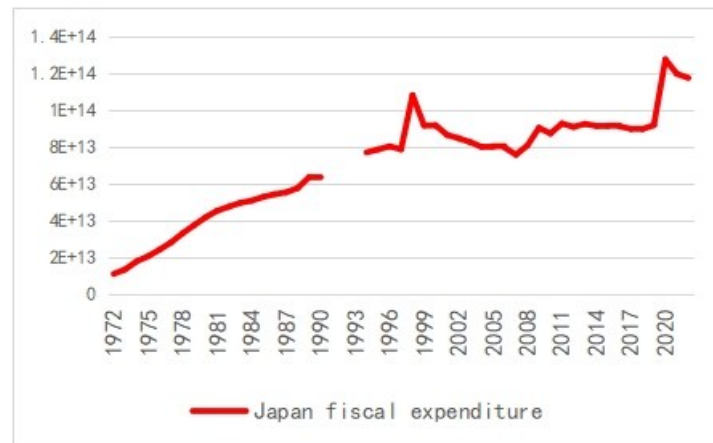
date	Interest Rates
1995-03-01	1.750000000
1995-04-01	1.000000000
1995-05-01	1.000000000
1995-06-01	1.000000000
1995-07-01	1.000000000
1995-08-01	1.000000000
1995-09-01	0.500000000
1995-10-01	0.500000000

(The data come from: <https://zh.tradingeconomics.com/japan/interest-rate>)

In August 1995, the Japanese government took the important step of lowering interest rates to 0.5%. Such low interest rates were unprecedented in the world at the time.

The 0.5% interest rate exists as monetary policy, and it is paired with fiscal policy to promote economic development.

2.2.2. Fiscal policy

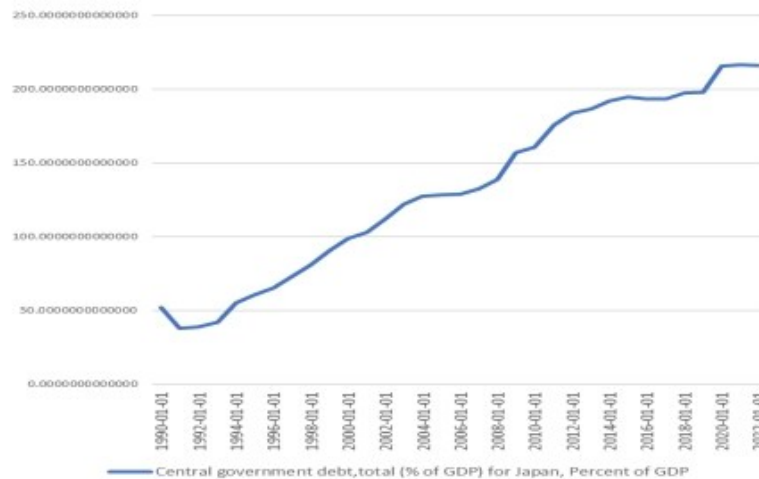


(The data come from: <https://data.worldbank.org.cn/indicator/GC.XPN.TOTL.CN?locations=JP>)

Figure 3: Japan fiscal expenditure

Monetary policy was accompanied by expansionary fiscal policy [3].

On the one hand, the government can invest a lot of money in infrastructure, public services, social welfare, education, scientific research and other fields, which will be directly transformed into a part of the total social demand, thus stimulating the production and employment of related industries.



(The data come from: <https://fred.stlouisfed.org/series/DEBTTLJPA188A>)

Figure 4: Central government debt for japan, percent of GDP

On the other hand, the government can increase its disposable income, and then its consumption and investment capacity, by means of tax cuts or tax rebates.

Japan's use of a large and prolonged expansionary fiscal policy also saddled the Japanese government with huge debts.

2.2.3. Quantitative easing

Faced with interest rates at zero and public debt equivalent to 180% of GDP, Japan found itself with limited options and thus introduced quantitative easing (QE).

QE involves the Japanese government continuously printing money to purchase long-term financial assets, thereby regulating long-term interest rates. While this policy risks fostering social inflation, the mild deflation prevalent in Japanese society at the time made the implementation of QE measures feasible.

2.2.4. Abenomics

In 2000, the global economy flourished, and Japan's economy gradually recovered following a series of monetary and fiscal policy stimuli. By 2006, Japan had discontinued its quantitative easing policy and prepared to phase out a range of radical measures. However, in 2008, the subprime mortgage crisis spread globally.

At this juncture, Japan adopted a strategy known as Abenomics, comprising three pillars: monetary easing, flexible fiscal stimulus, and structural reforms [6].



(The data come from: <https://zh.tradingeconomics.com/japan/interest-rate>)

Figure 5: interest rate for Japan



(The data come from: <https://zh.tradingeconomics.com/>)

Figure 6: M0 for Japan

There are two main parts of monetary policy. One is to cut interest rates, which in this case in Japan went straight to negative, and the other is quantitative easing [6].

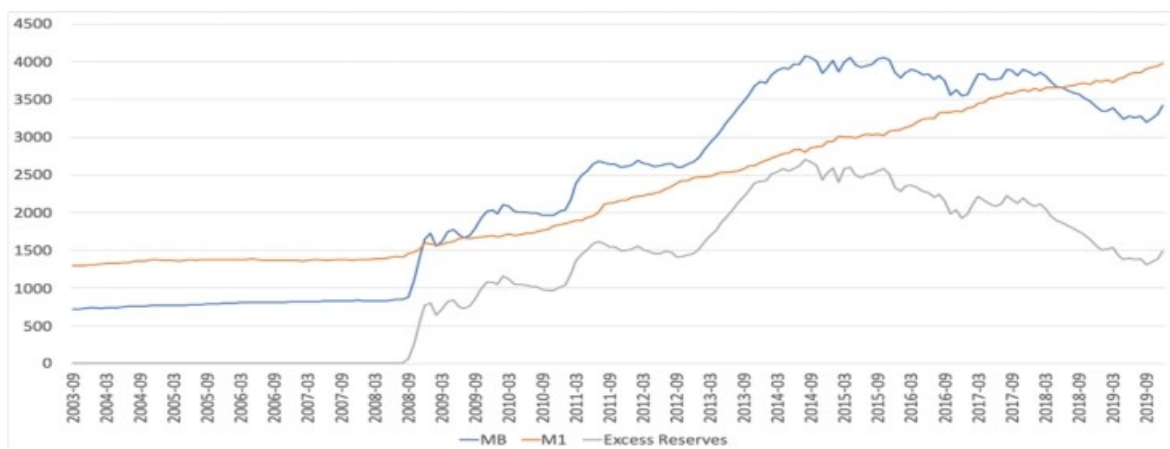


Figure 7: MB, M1, and excess reserves for Japan

The method of quantitative easing was also used in the United States during the 2008 subprime crisis. It can be seen from the figure that the MB of the United States increases, but because the excess bank deposits also increase, the increase in MB does not make a significant change in the M1 of the United States.

The rise of MB did not cause the rise of M1, because banks did not choose to lend money to ordinary people, and high-power money only existed in banks and did not play a derivative role. While Japan used qe with the strategy of negative interest rate, if banks did not lend money, the money would decrease year by year, which could encourage banks to lend more money instead of deposit.

Table 4: housing price index for us

date	Housing price index
2007-01-01	380.80
2007-04-01	380.56
2007-07-01	376.30
2007-10-01	375.08
2008-01-01	372.32
2008-04-01	362.93
2008-07-01	351.48
2008-10-01	348.24
2009-01-01	350.81
2009-04-01	341.62
2009-07-01	332.70
2009-10-01	330.17
2010-01-01	326.23
2010-04-01	323.27
2010-07-01	326.41
2010-10-01	324.09
2011-01-01	315.09
2011-04-01	309.55

(The data come from: <https://fred.stlouisfed.org/series/USSTHPI>)

Table 5: Unemployment rate for us

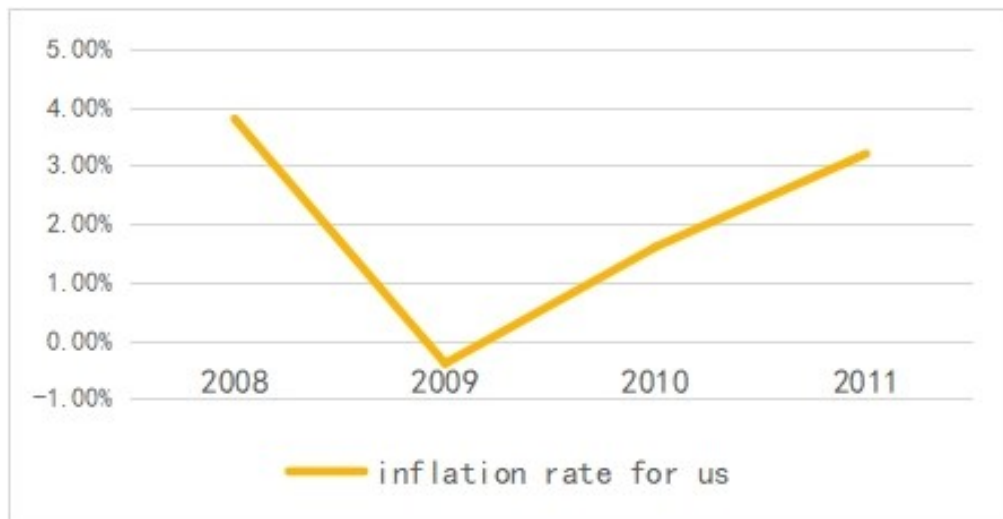
Country Name	Indicator Name	2007	2008	2009	2010	2011	2012
US	Unemployment rate	4.622	5.784	9.254	9.633	8.949	8.069

(The data come from: <https://data.worldbank.org.cn/indicator/SL.UEM.TOTL.ZS?locations=US>)

Beyond the less dire state of American interest rates, several other factors impede American banks from effectively lending money. The elevation in the excess deposit reserve ratio by banks may stem from the steep decline in employment rates and the fall in housing prices. The subprime crisis disrupted the capital chain of banks and led to a decline in the real economy. Consequently, numerous companies became unprofitable, a substantial number went bankrupt, and some laid off a large workforce, causing a sharp rise in the unemployment rate in the United States. Those unable to repay their debts failed to meet the bank's lending criteria, resulting in loan denials. Prior to the subprime crisis, the bank's loan approval process was relatively lenient, facilitated by the rapid appreciation of housing prices, which allowed banks to recover funds through foreclosure. However, during the crisis,

the decline in housing prices hindered individuals from using their homes as collateral for loans, leading to decreased lending by banks.

2.3. Results and reason



(The data come from: <https://data.worldbank.org.cn/indicator/FP.CPI.TOTL.ZG?end=2011&locations=US&start=2008>)

Figure 8: M0 for Japan

The United States has barely recovered from the subprime crisis, with its GDP rebounding and inflation converging towards normalcy. In contrast, Japan has faced persistent challenges in reviving its economy for three decades following the bursting of its economic bubble.

Despite the implementation of a series of monetary and fiscal policies in Japan, including three rounds of quantitative easing (QE) that injected substantial funds into the market, the inflation situation remained subdued for decades before stabilizing. However, these fiscal measures saddled Japan with a huge debt burden without successfully stimulating domestic demand.

Japan's prolonged economic struggles are largely attributed to its aging population, which poses a severe challenge [7]. The elderly demonstrate limited consumption desire, often opting to save rather than spend their income. This phenomenon exacerbates the financial burden on the workforce, who must support their elderly family members, further inhibiting the spending power of younger generations. Additionally, the government must ensure social pension benefits, further straining fiscal resources. The aging population leads to a sustained decline in aggregate demand, resulting in excess supply and falling prices, which significantly dampen inflation. This explains why Japan has struggled to achieve inflation for so many years.

Furthermore, the decline in prices leads to a reduction in corporate profits, prompting enterprises to consider layoffs or salary cuts, which further suppresses consumption among the workforce.

Thus, the decline in aggregate demand, with aging population as its core driver, is the primary reason for Japan's prolonged economic recession.

3. Conclusion

It can be seen that the formation of bubbles in the two countries is affected by interest rates. In the United States, the high degree of mortgage securitization made most financial institutions in the United States deeply involved, resulting in a global economic crisis after the bursting of the economic bubble. However, Japan was hit hard after the bursting of the economic bubble, and the reason for the poor recovery effect for 30 consecutive years is that Japan has a serious aging society.

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