Analysis of Different Macro Policies Implemented by U.S and China During the Covid-19

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Abstract
Since the outbreak of COVID-19 in February 2020, the economic operation of all the countries in the world has been greatly affected. Countries have issued many macro policies to address the adverse effects of the contraction of economic activity caused by the epidemic. Monetary policy is one of the most important macroeconomic policies for central banks in various countries to regulate economic operations. We firstly collect data to compare the loss in the two countries. Then we analyze the differences in monetary policies and effects between China and the United States under covid-19. The United States mainly used fiscal policy and introduced the quantitative easing to increase aggregate money supply, while China used various monetary policies. And we would find out those effects and benefits under different macro policies.

Keywords: *real economy, monetary policy, comparative analysis, new monetary policy tools*

1. Introduction

The sudden outbreak of the new crown pneumonia epidemic in 2020 has had a huge impact on the real economy around the world, causing turbulence in the financial system and causing the economy to fall into recession. The response to the epidemic has become a core consideration in the current monetary policies of various countries. The response to the epidemic has become a core consideration in the current monetary policies in U.S and China. In response to the negative economic impact of the epidemic, central banks around the world have introduced different monetary policies. This article analyzes the differences in monetary policies and effects between China and the United States under covid-19. We will conduct a specific analysis to analyze the monetary policy and discusses the effectiveness of monetary policy and puts forward relevant policy recommendations for improving the efficiency of monetary policy and promoting economic recovery.

2. The effects of Covid-19 on Chinese/U. S real economy

2.1. The effects of Covid-19 on Total GDP

In this part, we mainly focus on the impact of Covid-19 and how do they effect the real economy in China/U.S, and we do a comparative analysis from four aspects of economic growth, GDP, Unemployment rate, Inflation rate with CPI/RPI.

First, since the end of last year, there has been an outbreak of the 2019 novel coronavirus in China. According to Figure 1, comparing with the 2003 SARS epidemic, SARS had a limited impact on China's macro economy at that time. The GDP growth rate in 2003 was even faster than in 2002. But the current situation facing China's economy is very different from 2003. In recent years, China's GDP has maintained a stable growth, and the growth rate has slowed down. Due to the outbreak of the new crown epidemic, China's GDP has dropped significantly in the first quarter of 2020, and improved in the second quarter, comparing with the total GDP to 2019,

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the total GDP even increased a little bit. However, as for the U.S., due to the different national conditions of China and the United States, the degree of impact of the epidemic is different, and the policy implementation strength, scope and methods of China and the United States are also different. The impact on the total GDP is also different, through the overall GDP is huge in U.S., but the negative growth rate in 2020 shows a significant influence for U.S.

Fig. 1. The Total GDP comparison in 2019-2020 of China and U.S(Non-Commercial Use)

2.2. The effects of Covid-19 on Unemployment

Second, from the **Figure 2** we could know that for the unemployment rate in China, the urban survey unemployment rate rose sharply from 5.3% in January to 6.2% in February, the largest increase since the data was released, and remained at a high level of 5.9% in March. Compared with 5.1% in January of last year, 5.3% in February, and 5.2% in March, there was a significant increase. (Zeng Xiang Quan, 2020). Affected by the Covid-19, 6% of employees withdrew from the labor market, and total employment declined. The employment situation of key groups has also deteriorated. The group of migrant workers has dropped from 170 million at the end of 2019 to 120 million at the end of February 2020, and the unemployment rate of young people aged 16-24 has reached a high of about 13%. Comparing with the total unemployment rate in 2019, the unemployment rate in 2020 has reached 5% or more. As for the US, the unemployment rate in 2020 has increased 100% or more, from 3% in 2019 to 6% in 2020.

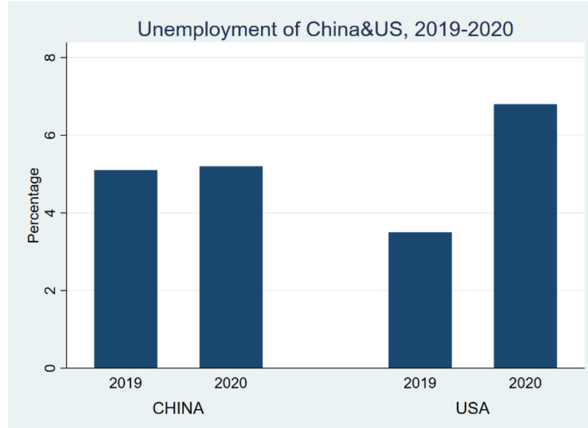

Fig. 2. The unemployment rate comparison in 2019-2020 of China and U.S (Non-Commercial Use)

2.3. The effects of Codvid-19 on inflation, CPI and RPI

Lastly, Figure 3 illustrates that in terms of inflation pressure, the United States ranks among the top with an inflation rate of 4.2% in April; the consumer price index (CPI) rose 5% in May, while the producer price index (PPI) rose 6.6%. The increase was the highest since November 2010. However, the CPI maintained a positive rate compared with 2019, while the RPI shows a negative rate in 2020(closed to zero). As for China, both the CPI and RPI has dropped below zero, indicating a negative growth rate for inflation rate and the total consuming level for the consumers.

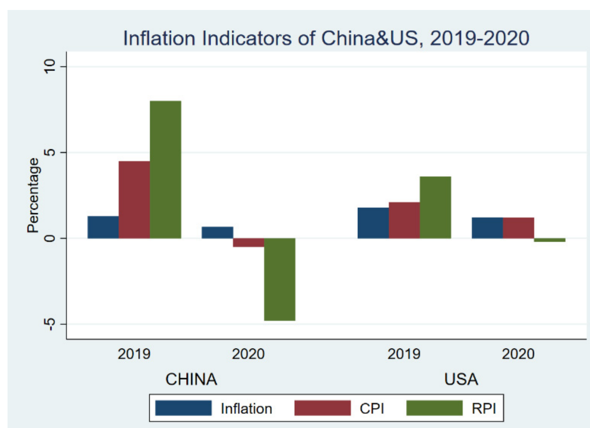

Fig. 3. The inflation indicators comparison in 2019-2020 of China and U.S (Non-Commercial Use)

3. Monetary policy

3.1 Objectives

Since the end of 2019, covid-19 has affected a few companies, individuals, institutes, and so on. They have all been struggling during this period. However, the efforts from these individuals or companies are not enough to pull them back from the cliff of failure. The authority should take some action. The governments need to issue some policies to save the economic unity under them. Therefore, monetary policy is an unavoidable term when the governments were trying to deal with such kinds of problems.

Monetary policy is designed, implemented, and issued all by the central bank, currency board, or other competent. The policy runs into action to make the economy of the country grow stably. On top of that, the policy being decided is also expected to reach a country's economic goal, promoting sustainable economic growth. For example, China has the following economic goals:

- at least 6 percent of GDP growth
- creating 11 million more job positions in the urban area
- controlling the urban unemployment rate at around 5.5 percent
- around 3 percent of CPI change

Also, the quality of imports and exports rose steadily, and the balance of payments was balanced. Cut energy consumption per unit of GDP by around 3 percent; China's grain output remained above 500 million metric tons [1]. From the goal above, some terms are ubiquitous when talking about the monetary policy: GDP, unemployment rate, growth, etc. People sometimes can roughly consider that monetary policy means to reach the steady growth of GDP, lower unemployment rate, growth in income, purchasing, etc.

3.2 Types of Monetary policy

Monetary policy can also be divided into two parts: expansionary and contractionary. Expansionary monetary policy aims to have economic growth, expanding the economic activity [2]. The money supply is likely to be increased. Therefore, expansionary monetary usually takes tools to lower the discount rate, buy government securities, and reduce the reserve ratio to expand the supply of money. What is more, lower interest is more convenient for those who are just a start-up or who are worrying about financing. As for China, its monetary policy is usually stable, expansionary. The leading global economies are taking the expansionary policies after the financial crisis in 2008 [2]. Contractionary policy means to limit the money supply, increase the interest rate, lowering the GDP. The goal is usually to bring down inflation. Typically, if the inflation rate is controlled around 2 percent to 3 percent, it is good. It is the same for GDP to have stable growth. It could be unfavorable to have a colossal GDP growth during a short time since an economy can be roaring along at too fast a clip, with excessive demand causing costs and prices to climb unchecked [3]. Then, inflation happens. Contractionary monetary usually takes increasing interest rates, selling government securities, and raising the reserve requirement for banks to lower inflation.

4. Different monetary policy implemented by China and U.S

4.1 China's monetary policy during the epidemic

4.1.1 Open market operations.

- The winning bid rate of open market operations rates moved downward

From the beginning of 2020 to the end of April, the winning bid rate for 7-day reverse repo operations in the open market dropped from 2.50% to 2.20%, and the MLF winning bid rate dropped by 30 basis points, leading the market interest rate center to move downward

- Maintain reasonable and sufficient liquidity

From February 3 to 4, the People's Bank of China carried out a total of 1.7 trillion yuan in open market short-term reverse repo operations, which effectively maintained the stability of the financial market.

4.1.2 Credit support to reduce the effects of the COVID-19.

- Special central bank reloan was provided to key areas in battling COVID-19

On January 31, 2020, the People's Bank of China provided a total of 300 billion yuan in low-cost special reloan funds to large national banks and some local banks in key provinces and cities such as Hubei, to support financial institutions to provide preferential interest rates credit to key enterprises participating in epidemic prevention. These companies are responsible for the production, transportation, and sales of key medical and living materials.

- Special central bank reloans, and discount quotas were provided to support work and production resumption.

On February 26, 2020, the People’s Bank of China increased the special re-loan and rediscount quota of 500 billion yuan, and at the same time lowered the re-loan rate for agriculture and small enterprises to 2.5%.

4.1.3 Innovative tools that directly support the development of small and micro business.

- Small and micro enterprise loan period support tool

The PBC created an inclusive small business loan extension support tool, provided 40 billion yuan of reloan funds, and provided local banks with an incentive of approximately 1% of their extension loan principal.

- Small and micro enterprise credit support tool

On June 1, 2020, The PBC established a credit support plan for inclusive small business, provided 400 billion yuan of reloan funds, and provided preferential financial support to local banks based on 40% of the actual credit principal. This plan effectively solved the financial difficulties of small and micro business [4].

4.2 U.S monetary policy during the epidemic

4.2.1 Lowered the target range of the federal funds rate.

In early March 2020, the Federal Open Market Committee (FOMC) lowered the target range of the federal funds rate to 1% to 1-1/4%. In mid-March, the committee lowered the target range to 0% to 1/4%.

4.2.2 Open market operations.

- Increase the holdings of treasury bonds and institutional mortgage-backed securities in system open market account

In mid-March, the FOMC increased its holdings of US Treasury bonds and institutional MBS to maintain market stability. Since the beginning of 2020, the treasury bonds and institutional MBS in the system open market account have increased by USD 1,805 billion and USD 427 billion, respectively.

4.2.3 Liquidity and credit market facilities.

The Federal Reserve has implemented various measures to relieve market pressures (According to Table 1). The total size of money market mutual fund liquidity instrument and primary dealer credit instruments increased to US$86 billion in April. As of June 3, the total scale of other instruments such as Salary Protection Program loan instruments, commercial paper financing instruments, secondary market corporate credit instruments, and municipal liquidity instruments has been steadily increasing, reaching US$65 billion. It should be noted that all these measures were approved by Secretary of the Treasury [5].

Table 1. (Source: Federal Reserve Board, "Factors Affecting Reserve Balances.")

Name	Target	Maximum size	Utilization as of 6/3/2020
Primary Dealer Credit Facility	Broker-dealer liquidity	Unlimited	S6 billion
Money Market Mutual Fund Liquidity Facility	MMF liquidity	Unlimited	$30 billion
Paycheck Protection Program Lending Facility	Funding of PPP loans	Unlimited	$55 billion
Commercial Paper Funding Facility	Newly issued CP	Issuner max outstanding limit	$4 billion
Primary Market Corporate Credit Facility	Newluy issued corporate debt	Combined $750 Billion	$0 billion
Secondary market Coproprate Credit Facility	Secondary market corporate debt		$4 billion
Main Street New Loan Facility	Small and medium-sized businesses	Combined $600 billion	$0 billion
Main Street expanded Loan Facility			
Main street Priority Loan Facility			
Municipal Liquidity Facility	States and municipal governments	$500 billion	$1 billion
Term Asset-Backed Securities Loan Facility	Newly issued ABS	$100 billion	$0 billion

4.3 Comparison of Chinese and U.S. Monetary Policies during the epidemic

- Traditional measures

To intensified stresses in markets, the main measure implemented by US is Quantitative Easing.And the main measure implemented by China are loans and credit,which are more moderate and responsible

- Innovative tools

China and the United States have similarities mainly through the establishment of innovative tools to sign support agreements. The core of the difference is whether the financial department will re-support. Among China's innovative monetary policy tools, commercial bank loans are still operating within the balance sheet, credit risk is still borne by commercial banks, and the Ministry of Finance does not cover the bottom line. But the Fed's innovative tools are essentially credit guarantees by the Ministry of Finance, who played a role of bottom line.

5. Effects of monetary policy implemented by China and U.S

5.1 The effect of China's monetary policy during the epidemic

There is no doubt that China's monetary policy has attained many achievements during the epidemic. Here we will mention five aspects which I want to share with you.

Firstly, let's look at China's economic growth in 2020. From figure 4, in 2020, China's economy recovered steadily, with a total GDP which was more than 100 T yuan. And China was the unique economy to achieve a positive economic growth in 2020. During the year, China's GDP rose 2. 3% over 2019. It was quite unbelievable with the impact of Covid-19. In the first quarter of 2020, China's GDP was reduced 7 T yuan that compared to the fourth quarter of last year. It was really a huge loss for China. But from the second quarter of 2020, Chinese GDP began to grow and returned to normal levels gradually.In the second quarter of 2020, the China’s GDP increased 4.3T. In the third quarter of 2020, it was about 26.5T yuan. And in the fourth quarter of 2020, the GDP was 30T yuan, which was higher than the one that in the same time in 2019. In 2020, the yearly GDP was 126. 53 trillion. Undoubtedly, Monetary policy had played a important role to the achievement.

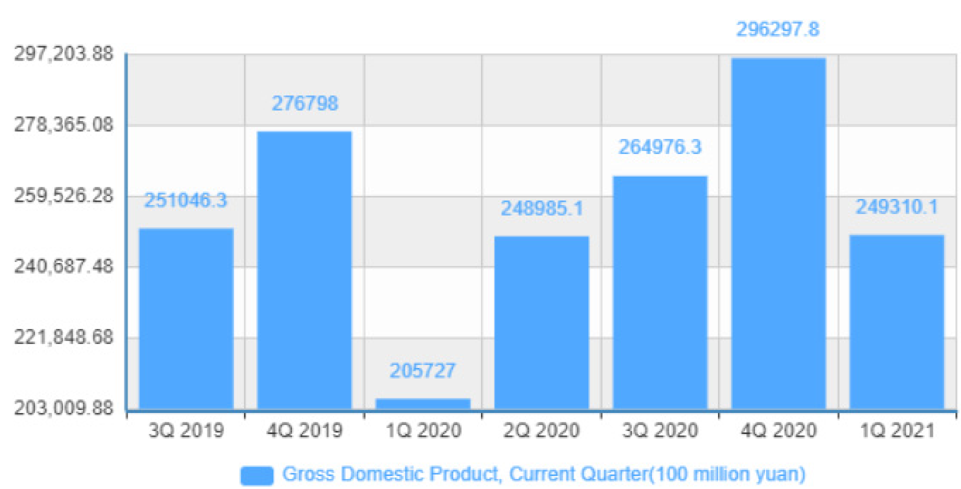

Fig. 4. GDP growth in China under COVID-19(Quarterly) (Non-Commercial Use)

Secondly, with the implement of monetary policy, Figure **5** shows that China has achieved price stability in 2020. To measure it, we had better to use some macroeconomic indicators. The measure indicator we used is Consumer Price Index. We can call it "CPI"” simply. It is used to reflect the change in the price level of goods and services. AS we can see from the figure below, the CPI increased a lot in January and February in 2020. Then the extent of CPI's growth has begun smaller. In the last month in 2020, the CPI was almost equal to 100, which represented that you could buy the same things with the same expense that you would pay in December in 2019.

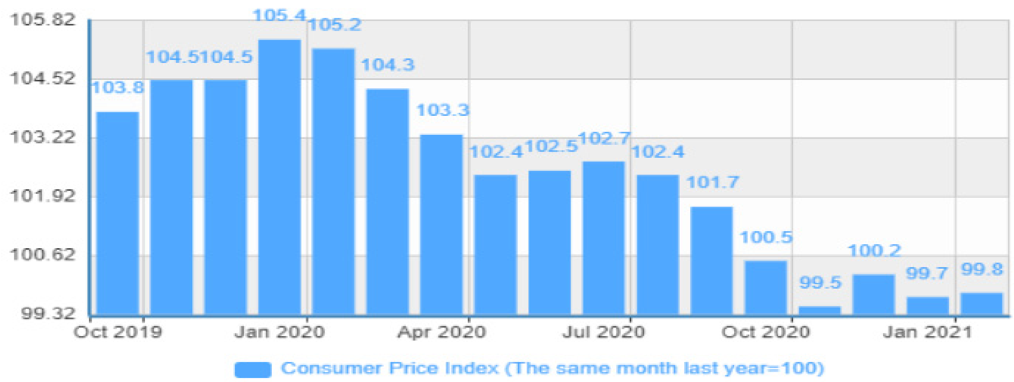

Fig. 5. [6] Consumer Price Index in China under COVID-19 （[PDF] Praxis for the Poor: Piven and Cloward and the Future of Social Science in Social Welfare | Semantic Scholar） Non-Commercial Use

Thirdly, Figure 6 shows that China's unemployment index remained stable, which remained around 5. 1% in 2020. Affected by the epidemic in February 2020, the unemployment rate increased by 0. 9%, which was high. So, there were more than millions of people that couldn't find jobs over 2019.With some adjustments of monetary policy and the control of the Covid-19 in April in 2020, companies gradually manage workers to return and start to produce. AS we can see from the figure below, and the unemployment rate gradually decreased, and basically returned to the level of 2019. In November and December in 2020, unemployment rate of China both equal to 5. 2%, which was equal to the one in December in 2019.

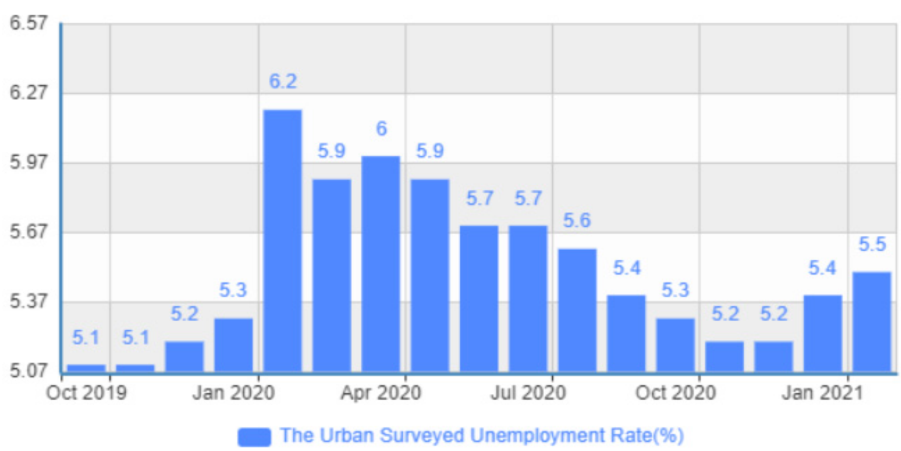

Fig. 6. The Urban Surveyed Unemployment in China

Fourthly, from the figure 7, China has had kept the exchange rate stable basically.We use the exchange rate between RMB and US dollar to support the opinion. The exchange rare between of the two currencies was 6.899 in 2019.And in 2020, the exchange was 6.898. There was little difference between the two numbers. China's monetary policy has done a good job to keep the exchange rate stable.

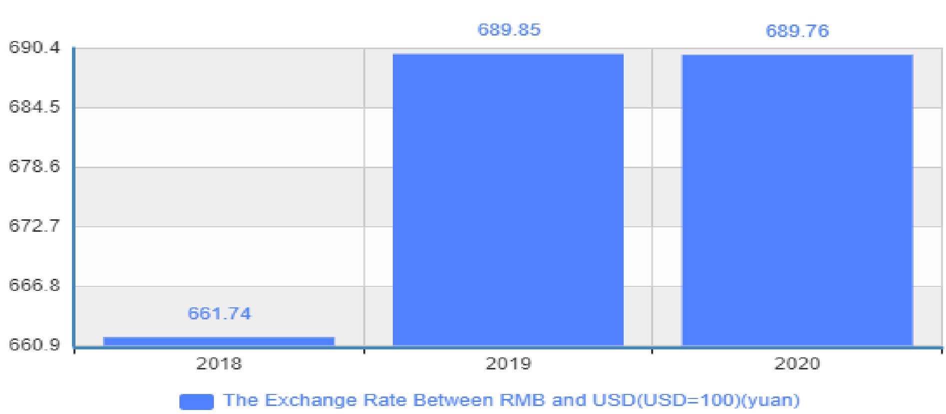

Fig. 7. The Exchange Rate Between RMB and USD

Fifthly, China has used a series of monetary policy tools such as medium-term lending convenience, open market operation to meet the liquidity needs of small- and medium-sized enterprises by lowering their lending cost, which decreased the possibility of them to go bankrupt and benefited for their development in future. Both industrial enterprises and service enterprises have a good recovery. For example, in 2020, the total profit of industrial enterprises which have a main business income for more than 20 million yuan has increased by 4.1% over 2019. Service companies also have a such improvement.

5.2 The effect of the monetary policy implemented by the United States during the epidemic

"Monetary policy in the United States comprises the Federal Reserve's actions and communications to promote maximum employment, stable prices, and moderate long-term interest rates." This is the goal of the Federal Reserve system, which is the central bank of the United States. "Inflation is the decline of purchasing power of a given currency over time. The most commonly used inflation index is the Consumer Price Index (CPI)." Thus, we are going to focus on the CPI and unemployment rate and analyze effects of monetary policies implemented during the COVID-19 pandemic. COVID-19 infections led to a contraction in economic activity. In the first half of 2020, GDP declined by almost 10%, and the unemployment rate hit a post–World War II high of 14.8 percent in April. Overall, GDP is expected to have fallen 2.5 percent over the prior four quarters, with payroll employment over 10 million jobs below pre-pandemic levels in January, while the unemployment rate remained high at 6.3 percent and the labor force participation rate was severely depressed. After the sharp decline after the pandemic shock, consumer price inflation rebounded with economic activity, but inflation is still lower than the pre-COVID level. As measured by the 12-month change in the price index for personal consumption expenditures (PCE), inflation jumped from 1.2 percent in December 2020 to 3.9 percent in May, well above the FOMC's (Federal Open Market Committee) long-run objective of 2 percent. The PCE price index rose 3.4 percent over the 12 months ending in May. The increase in import prices also led to a rise in consumer price inflation in the first half of 2021, boosted by commodity prices, which rose in response to strong demand for goods.

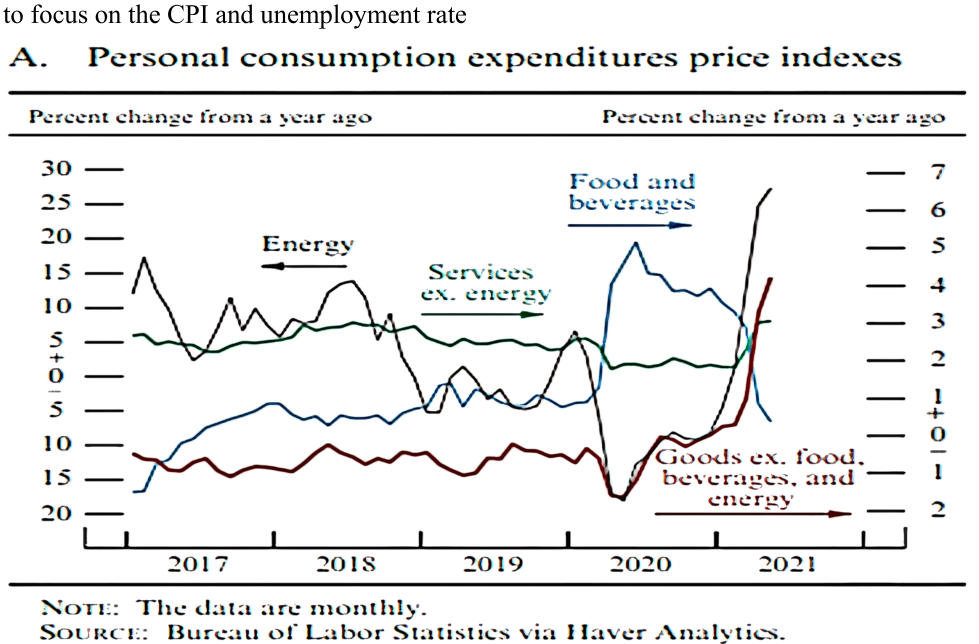

Fig. 8. [7] Personal consumption expenditures price indexes (https://tradingeconomics.com/united-states/core-inflation-rate) Non-Commercial Use

According to Figure 8 above, prices for crude oil and other traded commodities, such as livestock, crops, and metals, have risen significantly as global demand climbed. Commodity prices began to rebound in the second half of last year. The global economy partially reopened. This year commodity prices continued to rise. These prices directly affect the consumer prices of food and energy.

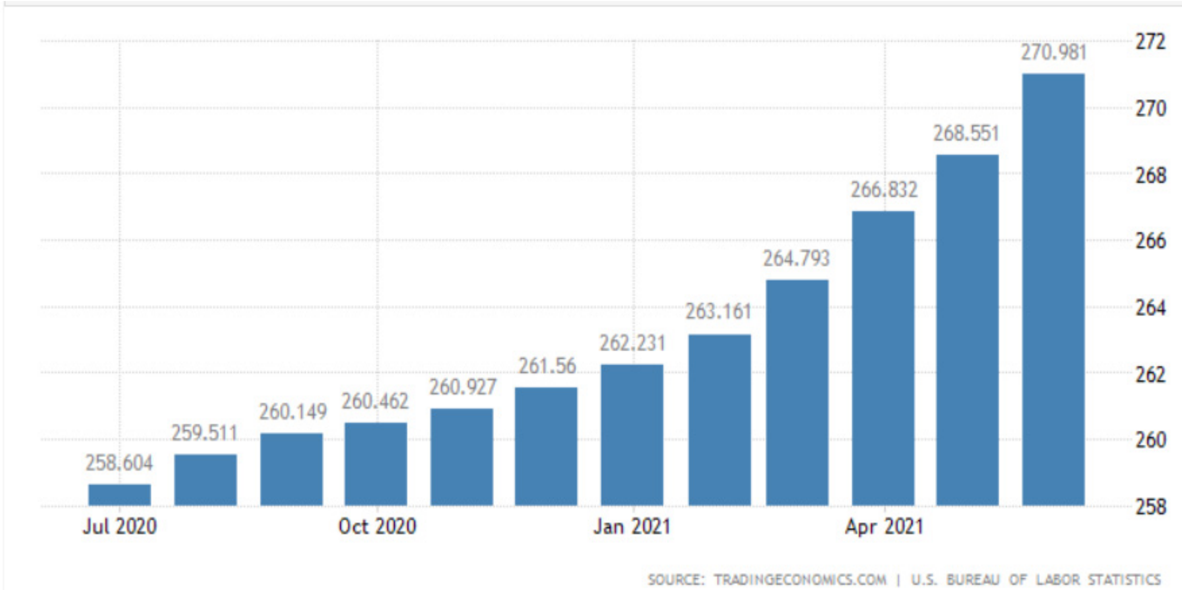

Fig. 9. [8] United States Consumer Price Index (CPI) (July 2020 to June 2021) (www.investopedia.com/terms/c/consumerpriceindex.asp) Non-Commercial Use

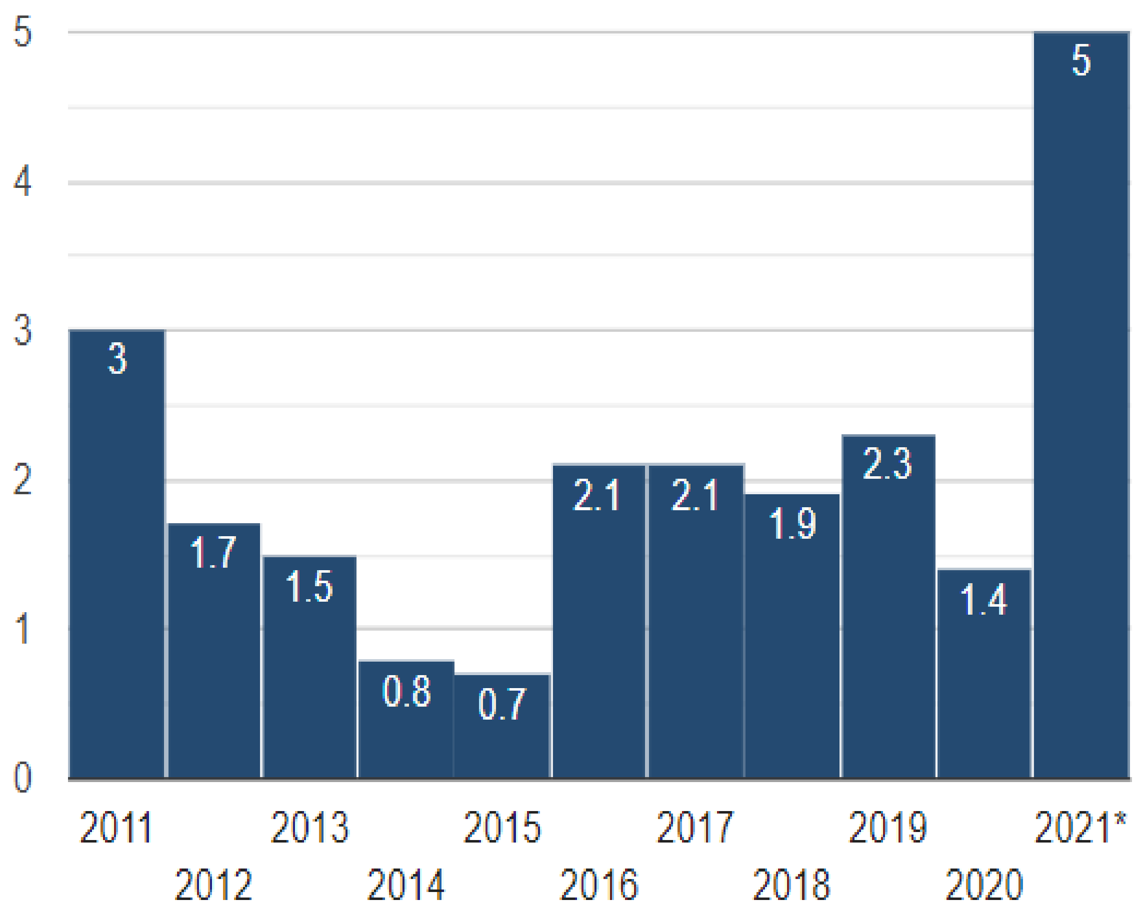

Fig. 10. [9] United States Annual Inflation Rates (2011 to 2021) (www.investopedia.com/terms/i/inflation.asp) Non-Commercial Use

According to Figure 9 and 10 above, inflation rate reached its highest level since the 2008 financial crisis. Overall, a surge in demand looks to be responsible for a significant portion of the rise in inflation this spring. But there is another reason for the rise in inflation. Due to the economic stagnation caused by the COVID-19 pandemic, the Fed needs quantitative easing to stimulate the economy and increase liquidity.

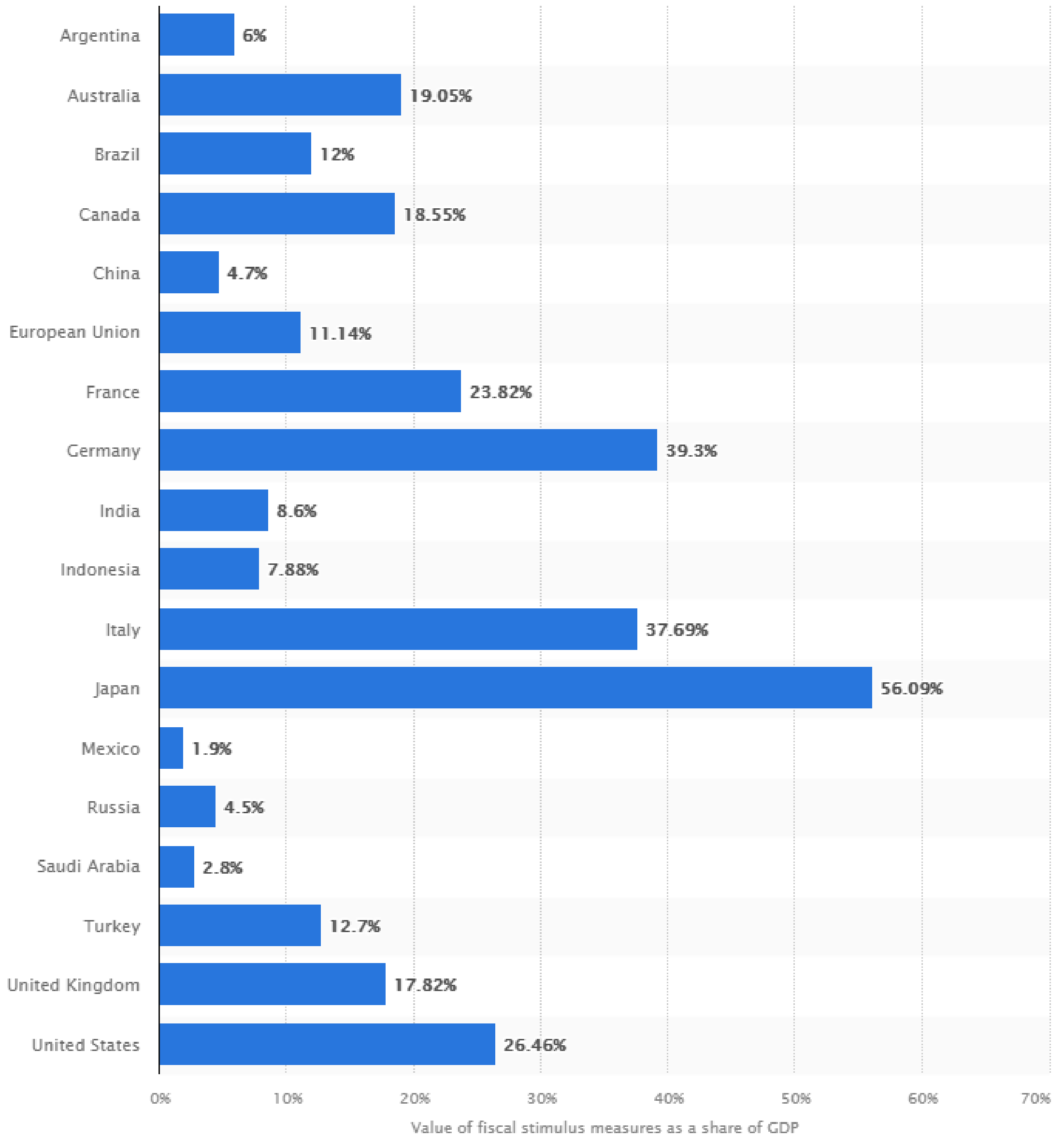

Fig. 11. [10] Value of fiscal stimulus measures as a share of GDP (www.statista.com/statistics/1107572/covid-19-value-g20-stimulus-packages-share-gdp) Non-Commercial Use

Fiscal policy refers to how the government spends and collects money to influence the economy. The government can influence economic outcomes by increasing or decreasing economic activity by adjusting its level of spending and tax revenue. Fiscal stimulus can be used by the government to boost economic activity by increasing government expenditure, lowering tax collection, or a mixture of both. According to Figure 11, the US value is approximately 26.46%. During the COVID-19, the US government's total outlays are about 3 trillion dollars. The total obligations are about 3.5 trillion dollars, and total budgetary resources are approximately 4.55 trillion dollars. The United States uses fiscal policy relatively vigorously during the COVD-19 pandemic.

6. Conclusion

China and America chose different routes to fight the crisis. Both countries did well. However, the three indicators that we chose such total GDP shows that China grew, America didn't grow, but America didn't shrink much as Europe shrunk much more than the America. In America, the emphasis was mainly on fiscal policy. And in China, the emphasis was mainly on monetary policy and credit policy. To be more specific, the main measure implemented by U.S is Quantitative Easing. The main measures implemented by China are loans and credit, which are more moderate and responsible.

In short, under the background that most countries in the world are plagued by the epidemic. It is difficult for the world economy to return to a normal level only with loose monetary policies. The effective epidemic prevention and control is still the major premise for the world economy recovery.

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