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Changes in Interest Rates and Effect on Economy of the United States Based on the Influence of Covid-19

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Abstract: The change in interest rates always brings some impacts on our life. With the consumption power in China gradually grow up. People should get to know how some financial changes influence the daily lives and how can citizens react to take over it or even earn more benefits. Through the analysis of the American stock market, CPI and FED were summarized the main point to illustrate the reason why the Fed must change it and how the changes affect our life, and how to avoid some of the negative influences. With the market gradually recovering from the impacts of the Covid-19 Americans have been accumulating their interest rate lots of workers lost their job during that period, this paper investigates the so relationship between the interest rate and the unemployment rate. On top of that the price of necessity in that place also getting greater, it also analyzed what's the relationship between necessity and interest rate. This is not only a problem facing the United States, but also an area of greatest concern for people. The results suggest that interest rate hikes will continue and may lead to a more severe economic recession.

Keywords: FED, Interest rate, Covid-19, inflation, CPI

1. Introduction

1.1. Background

Due to the high inflation rate suffered in the United States, the Board of Governors of The Federal Reverse System (The Fed) solved the issue by increasing interest rates to restrict consumption and encourage saving. Under the Fed's continuously increasing interest rate, many European and American banks gradually went bankrupt: On March 10, 2023, the Federal Deposit Insurance Corporation (FDIC) announced that Silicon Valley Bank was closed by the California Department of Financial Protection and Innovation on the 10th and designated the Federal Deposit Insurance Corporation as the receiver.

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1.2. Related Research

Chen analyzed the influence of change in the Fed's interest rate on China's economy, and the author found that they were likely to be inversely related. The author explored that a positive impact on the US interest rate would lead to the same direction change of China's interest rate and have a certain negative impact on China's GDP. The key for China to resist negative shocks was to promote internal economic growth, kept a careful expectation of the Fed's interest rate hikes, and applied flexible monetary policies to cope with external shocks [1]. Liu and Lee studied the non-linear relationship between interest rates and exchange rates for China and the United States by applying the rolling window method. The authors also researched uncovered interest rate parity (UIP) and the capital market theory to investigate the economic connections between China and the United States. The result showed that, compared to the change in China's interest rate, the United States' interest rate adjustment had a stronger effect on the exchange rate between China and the United States [2]. Gao investigated the background and causes of Sino - US trade friction and analyzed the mechanism of the Fed's interest rate increase and its impact on the RMB exchange rate. The author suggested that the Fed's interest rate hike had weakened the stability of the renminbi's exchange rate, and resulted in the decline of the confidence of the international market in holding RMB [3].

Khan investigated the effects of macroeconomic variables on the exchange rate USD/CYN and applied the ARDL bounds test approach for cointegration to explore the long-run relationship. The research indicated that the interest rate had a non-significant effect on the exchange rate in China in the short run while causing a 0.18% devaluation in the exchange rate due to a 1% increase in the interest rate resulting from the long-run ARDL approach [4]. Chen analyzed the influence of the rise in the Fed's interest rate on the interest rate market of China. The author found that the Fed's interest rate hike had a strong expectation of depreciation on the exchange rate USD/CYN, but also had a positive impact on China's balance of payments. It would strengthen expectations of RMB appreciation against the US dollar, which offset some of the impacts of the Fed's interest rate hike on the depreciation of RMB [5].

United States Department of Labour on 14th of March published the data to illustrate a slight fall in CPI, which rose 6% year-on-year in February, down from 6.4% in the previous month and the lowest rate of growth since September 2021 in the meantime; The CPI for the month grew by 0.4%, down from 0,5% in the previous month. Jeffrey Roach, the chief U.S. economist at financial services provider LPL Financial, noted that even in the current banking panic, the Fed will still put price stability above growth and may raise interest rates by 25 basis points at its upcoming meeting. The overall information forecasts that the Federal Reverse System will continually increase the interest rate [6].

Zhang reported that on March 16th, the European Central Bank held a monetary policy meeting and decided to raise all three key interest rates in the Eurozone by 50 basis points. The ECB said it would closely monitor current market tensions and stand ready to react if necessary. After that, the market expects the probability of a 25bp rate hike by the Fed next week to rise back to around 80%. Regarding this Tencent.com, increasing interest rates in the United States posed a threat to the European Central Bank [7].

On the 8th of this month, Silicon Valley Bank Financial Group, the parent company of Silicon Valley Bank, sold about $21 billion in securities portfolio assets, resulting in a loss of about $1.8 billion. After that, the bank tried to sell a total of $2.25 billion in shares to raise funds, causing its stock price to plummet by more than 60% on the 9th and was forced to stop trading on the 10th. The California Financial Protection and Innovation Agency announced on the 10th that it would take over according to the law on the grounds of insufficient liquidity and solvency of Silicon Valley banks, and assigned the US Federal Savings Insurance Corporation to liquidate and manage

[8]. On the 15th of March, a journalist from Xinhua News Agency also reported that the media in the United States and the United Kingdom believed that the main reason for the bankruptcy of Silicon Valley Bank was the aggressive interest rate hike of the Federal Reserve. The New York Times pointed out that in the past year, the Federal Reserve has raised interest rates at a very fast pace to curb inflation, and banks have had to pay higher interest rates for deposits and other debt, but their asset returns have not increased, including loans and purchased Treasury bonds. Therefore, the closure of the Silicon Valley Bank is the result of the Fed's aggressive anti-inflation moves [9].

China News Network released on March 13 that the collapse of Silicon Valley Bank seriously affected the US banking industry and the US stock market. On the 10th, the stocks of the US banking industry plunged collectively, and the stock prices of the four major banks JP Morgan Chase, Bank of America, Wells Fargo, and Citigroup fell sharply, and the total market value lost about $50 billion. On the 11th, the NASDAQ index fell nearly 200 points or 1.76%; The Dow Jones fell below the 32,000-point integer mark, or 1.07% [10].

1.3. Objective

As soon as the incident was exposed, it dominated the headlines and inspired our group to investigate the effects brought by the rising interest rate in the US. Based on the bankruptcy of Silicon Valley Bank on March 10, this study puts social hot issues under the test of objective data and studies the reasons behind the Fed's interest rate hike and the impact of continuous interest rate hikes on the world. First of all, we will provide some basic data on rising interest rates, and secondly, we will analyze the problems caused by interest rate hikes and whether they have successfully solved the financial problems in the United States based on real-time hot spots and news.

2. The Importance of Interest Rates

Last year because of the global financial crisis. FED decided to increase the interest rate to encourage people to save more money. At the same time, they limited the issuance of currency to balance the high inflation. Then the local center banks will follow the commands of the FED and carry out the monetary policy. those things closely related to our life. How does it influence our life, in what aspect, and what kinds of effects will exist? those kinds of issues are what we try to figure out. when we want to purchase things like consumables such as cars, and houses.... most of the time people can not pay for the full payment therefore we tend to borrow money from the banks. There are two types of banks involved in the market which are the central bank and commercial bank the central bank is the bank set for commercial banks. If it increases the rate of interest, that will make it more expensive for commercial banks to borrow money which means borrowers have to pay more interest, if the central bank lowers the rate then the result will be the opposite. Therefore as borrowers, people don't want to hear the announcement of rising interest rates. But can it only bring some negative impact on us? lender. did you save your money in the bank during that time? For people, that is a great deal, lots of profits I can make from it. That is why I mentioned everything has both sides at the start of this article. With the disappearance of COVID—19 the market gradually recovered from the impact of the pandemic, and people are getting back to their work. At the same time, plenty amount of countries decides to make aggressive the interest rate cut, aimed to encourage people to do more purchases successfully help governments increase consumer spending by using the method: lower the cost of taking loans. In terms of consumers, they exactly spend more than they ever we can know that from the growth of the consumer price index. If you have to see the stock market of the USA in September you might be surprised by the dramatic floating of stock costs. And the reason why that happened was as stock traders they have to overcome many risks when they did this kind of job. so to be rational they could park their cash in the bank which will be more secure for them to make money meanwhile the reward from saving at this time was close to their original work, hence more and more trader didn't willing to take risks as the result the stock market fell sharply in that period. According to the research increasing the interest rate will impede the economy and bring a recession and reducing the rate excessively will finally lead to inflation. Both economic rescission and inflation aren't the consequence we expect but, there is nothing completely negative, the payoff is depended on your action, there are many solutions for instance: (1) before inflation hold real assets instead of holding cash, use the money to buy some real estates, especially since the interest rate with lowest point and solve them in the highest price; (2) getting some fixed debt before the inflation because the money you borrow before the inflation is more valuable than during the inflation which means even though we still have to pay some loans back but we have made the profits from it. if the interest rate is lower than inflation every piece of money you borrowed is theoretically a profit.

3. The Possibility of Interest Rate Changes and Increases

How the Fed control the interest rate Last year because of the global financial crisis. FED decided to increase the interest rate to encourage people to save more money. At the same time, they limited the issuance of currency to balance the high inflation. Then the local center banks will follow the commands of the FED and carry out the monetary policy. How does it influence our life, in what aspect, and what kinds of effects will exist? when we buy consumable goods, most of the time we can not afford the full payment, therefore, we tend to borrow money from the banks. There are two types of banks involved in the market which are the central banks and commercial banks the central bank is the bank set for commercial banks. If it increases the rate of interest, that will make it cost more for commercial banks to borrow money. which means borrowers have to pay more. if the central bank lowers the rate then the result will be the opposite. Hence Every coin has two sides, whether it is depreciation or appreciation none of them is negative, With the disappearance of COVID—19 the market gradually recovered from the impact of the pandemic, and people are getting back to their work. At the same time plenty amount of countries decide to make aggressive the interest rate cut, aimed to encourage people to do more purchases successfully help governments increase consumer spending by using the method: lower the cost of taking loans. In terms of consumers, they exactly spend more than they ever we can know that from the growth of the consumer price index, as you can see from the graph below it is apparent that in the next half year of 2022 CPI index grow dramatically there is a column exceed 9. For this year from February to March the CPI for all items raise around 0.4% by the observation of the Dow Jones index we know that the stock was drowning in the same worse situation. If you have seen the stock market of the US in September you might be surprised by the dramatic floating of stock costs. And the reason why that happened was as stock traders they have to overcome many risks when they did this kind of job. so to be rational they could park their cash in the bank which will be more secure for them to make money meanwhile the reward from saving in that time was close to their original work, hence more and more trader didn't willing to take risks as the result the stock market fell sharply in that period. According to the research increasing the interest rate will impede the economy and bring recession and reducing the rate excessively will finally lead to inflation. how to overcome this kind of crisis Both economic rescission and inflation aren't the consequence we expect but, there is nothing completely negative, the payoff is depended on your action, there are many solutions for instance: 1 Before the inflation hold real assets instead of holding cash, use the money to buy some real estates, especially since the interest rate with the lowest point and solve them in the highest price.2 Getting some fixed debt before the inflation because the money you borrow before the inflation is more valuable than during the inflation which means even though we still have to pay

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some loans back but we have made the profits from it. if the interest rate is lower than inflation every money you borrowed is theoretically a profit 3 Buy some gold which is a sort of good that can preserve its value the reason that is the amount of gold is scarce and people all recognize its value. in what situation fed will go to resize the interest rate FED's mission is to make the market stable not too hot or too cold. When the economy booms and distortion, for example, asset bubbles things like that happened and get out of hand then Fed will decide to adjust the interest rate to control the situation.

4. The Influence of the Interest Rate

4.1. How the Fed Controls the Interest Rate

Last year because of the global financial crisis. FED the institution which plays an important role in stabilizing the market decided to increase the interest rate to encourage people to save more money. At the same time, they limited the issuance of currency to balance the high inflation. Then the local center banks will follow the commands of the FED and carry out the monetary policy.

4.2. The Visible Impacts Lead by Interest Rate

When people buy consumable goods, most of the time they can not afford the full payment, therefore, we tend to borrow money from the banks.

There are two types of banks involved in the market which are the central banks and commercial banks the central bank is the bank set for commercial banks. If it increases the rate of interest, that will make it cost more for commercial banks to borrow money. which means borrowers have to pay more. if the central bank lowers the rate then the result will be the opposite. Hence Every coin has two sides, whether it is depreciation or appreciation none of them is negative, with the disappearance of COVID 19 the market gradually recovered from the impact of the pandemic, and people are getting back to their work. At the same time plenty amount of countries decide to make aggressive the interest rate cut, aimed to encourage people to do more purchases successfully help governments increase consumer spending by using the method: lower the cost of taking loans.

In terms of consumers, they exactly spend more than they ever we can know that from the growth of the consumer price index, as you can see from the graph below it is apparent that in the next half year of 2022 CPI index grow dramatically there is a column exceed 9. For this year from February to March the CPI for all items raise around 0.4% by the observation of the Dow Jones index we know that the stock was drowning in the same worse situation.

4.3. How does the Stock Market be Influenced by Interest Rates

If you have to see the stock market of the US in September you might be surprised by the dramatic floating of stock costs. And the reason why that happened was as stock traders they have to overcome many risks when they did this kind of job. So to be rational they could park their cash in the bank which will be more secure for them to make money meanwhile the reward from saving at that time was close to their original work, hence more and more trader didn't willing to take risks as the result the stock market fell sharply in that period. According to the research increase in the interest rate will impede the economy and bring recession and reducing the rate excessively will finally lead to inflation.

4.4. How to Overcome This Kind of Crisis

Both economic rescission and inflation aren't the consequence we expect but, there is nothing completely negative, the payoff is depended on your action, there are many solutions for instance:1.

before inflation holds real assets instead of holding cash, and use the money to buy some real estate, especially since the interest rate with the lowest point and solves them at the highest price. 2. Getting some fixed debt before inflation because the money you borrow before the inflation is more valuable than during the inflation which means even though we still have to pay some loans back but we have made the profits from it. If the interest rate is lower than inflation every money you borrowed is theoretically a profit 3. Buying some gold that is a sort of good can preserve its value the reason that is the amount of gold is scarce and people all recognize its value.

4.5. In What Situation Fed Will Go to Resize the Interest Rate

FED's mission is to make the market stable not too hot or too cold. When the economy booms and distortion for example asset bubbles. When things like that happened and get out of hand Fed will immediately decide to adjust the interest rate to control the situation. For instance, nowadays people still suffer from the recession which is led by COVID that straight influence total production and consumption in other words that refer to currency flowing is quite low once the government recognizes they will give a hand to promote by using expansionary monetary policies put it into another word that means use some of the artificial regulations to help to stimulate purchasing. another example of that occurs is when the unemployment rate becomes relatively higher than before, government like modify that situation through expansionary monetary policy as well. In terms of decreasing the rate of interest which we called it contractionary monetary policy, the functions are completely different from the policy I mentioned before. And fed tends to use is deal with some situations like hyperinflation. Recently America is using this sort of policy to prevent the deterioration of inflation.

5. Influence and Solution

5.1. Influence

Devaluation refers to the decision that reduces the value of a currency at a fixed exchange rate the value of the currency falls. Domestic residents will likely find imports and foreign travel more expensive, while domestic exports will benefit from their exports becoming cheaper.

Last year due to the effect of the COVID-19 epidemic, financial crises occurred throughout the globe and influence the monetary decision of the FED which decide to increase the domestic interest rate. Depreciation brings advantages including a higher level of exports that generates an improvement in the current account deficit, leading to less damage to restore the competitive market system compare to ‘internal devaluation’, and Central Bank can cut interest rates as it no longer needs to 'prop up' the currency with high-interest rates.

However, it also leads to much more severe disadvantages to the domestic economy. First, depreciation of the currency is likely caused by inflation which means that the import will be expensive as any raw material and resources increase in price. On top of that, demand-pull inflation is likely to occur as the domestic aggregate demand increases. Due to last year’s epidemic, many firms and exporters in China experienced a hard time restoring their regular market economic system. The depreciation of the currency adds to the problem which firms now have fewer incentives or chances to cut costs because they relied on the devaluation to improve competitiveness, and it can slowly lead to lower productivity. In addition, reduced real wages and spending during the epidemic period caused a decrease in purchasing power of the citizens, leading to a severe crisis in the demand and supply market. The depreciation of the currency causes a huge effect on the domestic economy of China, and necessary decisions and initiatives should be taken to offset the crisis that occurs.

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5.2. Solution

While crises often occur differently, past approaches can be adopted to cope with the present situation to emerge with the talent, capabilities, and infrastructure needed for long-term restoration.

Firstly, helping people to go through the crisis and leading them into recovery can be considered as the primary act that needs to be taken. Much of the economic solution has focused on providing short-term restoration such as attempting to maintain employment for citizens, lowering critical expenses, and supporting businesses with liquidity support in terms of preventing them from closing or failing caused to bankruptcy. With many well-known initiatives such as providing newly unemployed to talent-seeking industries, and supporting society with existing local welfare institutions, the government in every district can adjust the taxation level to relieve the current economic crisis that citizens are experiencing.

The second step of the reconstruction is to work out with preexisting industries and move into recovery. Market leaders can consider ways to restore the market system by restoring the market GDP, current employment rate, market consumption, and other factors that influence aggregate demand. For example, an early initiative that is introduced to cope with restoration after the epidemic is the campaign that stimulates local economies, especially by focusing on those small businesses that struggled through the crisis. While these interventions support the firms to think about their long-term recovery from the loss, policymakers should also consider ensuring the restoration of the systemically vulnerable businesses, such as industries that own by minorities or women.

To cope with the influence of the change in foreign economic policy, including the increase in FED's interest rate, there are several critical points for China. To resist the effect of negative stocks, monetary policy is required to promote the internal economic growth of the country. Furthermore, a flexible policy has to be made to cope with external stocks and keep careful speculation on the change in foreign interest policy. Attempting to offset some of the negative impacts of the Fed's interest rate hike and the damage caused by the epidemic on the current economy of China, necessary steps and improvements should be taken and committed.

6. Conclusion

In recent years, in the face of the instability of the US economy and the financial crisis, the Federal Reserve has adopted a policy of continuous interest rate hikes, but this has also caused many negative effects, among which the collapse of the Silicon Valley Bank has dealt a heavy blow to the US government, and this collapse is also the largest and most serious collapse in recent years. The Fed's interest rate hike has had an impact not only in the United States, but also on the economy, and financial market pressures abroad, resulting in a weaker European currency, increased inflationary pressures, and capital outflows. After knowing this news, this paper also delve into the further impact of the Fed's interest rate hike on global markets, we expect the Fed to continue to raise interest rates, but will slow down the frequency of interest rate hikes and reduce the value of interest rate hikes, from the current development, the US government has realized the disadvantages of raising interest rates, so the government may change its policy slightly.

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