What Influence Will the Raising of Interest Rates Have on the S&P 500 in the Epidemic Era?

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Abstract. With the raising of inflation and the recession of economy, the negative effect of monetary easing policy in the era of COVID-19 has appeared gradually. The Federal Reserve increases federal funds rate constantly to reduce the inflation. However, the inflation keeps soaring and the federal funds rate keeps an upswing which result in a constant sliding in stock market. The research in this article shows that the source of the inflation is the supply imbalance. It is useless that simply increase federal funds rate which can cause an economy recession like 1981s. Finally, the research finds that the only thing human can do is to try everyone best to offer a buffering during the world recession and fast the speed of energy revolution and economy recovery which can not only estimate the stock market but also restrict the decrease of S&P 500 index urging the recovery of finance and economy.

Keywords: Inflation, Federal Funds Rate, S&P 500 Index, COVID-19.

1. Introduction

1.1 Background

Nowadays, the federal funds rate becomes higher and higher which cause constant sliding of stock market. Because of the influence of COVID-19, the FED conducted monetary easing policy and the commodities supply becomes imbalance, which result in a soaring inflation. Further more, the FED keeps a tight currency policy in order to reduce the inflation in America. In fact, the higher interests rate only decreases the S&P 500 index and deteriorates the economy environment. It is important to find an appropriately solution to solve the high inflation rather than use a tight currency policy all the time which could only cause a deeper recession. Besides, when recession become a trend, what we should do to reduce the loss and come across this world crisis is closely related to America economy, finance, unemployment rate, and social development.

1.2 Related research

Lee and Zhardanovsky examined the impact of interest rates at each of the 11 GICS sectors which make up the S&P 500. The research shows that there is a relationship between interest rate and equity prices. Besides, the research found that 10 GICS sectors have a negative relationship with rates, except for the Energy. Finally, the S&P 500 has a negative relationship with the raising of interest [1]. Erlach considered several factors, such as stock, bond, gold and bitcoin returns. This examine find that the FED raises the interest which result in a decrease of the currency expectation. When people think the currency market is short of the currency liquidity, most of persons or organizations will sell the stocks to gain more currency liquidity. Then the stock market will meet a recession and the S&P 500 ratio will decrease, too[2]. Quan talked about the the low-interest-rate policy adopted by the Federal Reserve at the beginning of the Covid-19 and stock market bubble. With the lasting of the monetary easing, the inflation level increased dramatically and the S&P 500 ratio met an increase and a giant stock market bubble was produced. Raising interest couldn’t been inevitable and the stock market bubble would breakout and the S&P 500 ratio would decrease inevitable[3].

Cotton made a research in monetary policy and stock prices. The research shows that there is a huge anti-correlation between interest rates and stock prices. Besides, the increased expectation will produce a lower stock price. With the inflation goes up, the Federal Reserve will increase interest rate to a higher level and the stock market will meet a deeper recession[4]. Trifonova and Kolev devoted to the FED's unconventional monetary policy. The research uses the US 10-year government bond yield to respond the interest rate and uses the S&P 500 index to respond the stock market. The research finds that the US 10-year government bond yield and the S&P 500 index all go up with the increase of the interest[5]. Gerhard used the CAPE Shiller to predict the market level of the S&P 500. There is a overvaluation of the S&P 500. The author confirms that the risk of a stock crash increases sharply with the inflation and interest go up in 2022. The sustainable growth of the inflation and the interest rate would cause a sudden drop[6].

Céspedes, Chang and Velasco did some researches about the relationship between inflation and federal funds rate. The evidences show that raising federal funds rate can reduce the inflation, which can also cause some finance problems such as credit squeeze. What's more, the inflation expectation is important to reducing high inflation and lessen the negative effect of increasing federal funds rate[7]. Song analysised the influence of the FED's raising interest behavior. The research find that the S&P 500 ratio has a huge decrease, with the dropping out of the Monetary easing. Raising interest rate will make a drop in stock mark in a short term and a gradual increase will be happened in the future[8].

Pornprom and Pattaraporn used the method of Multiple Regression to analysis impacted variables to S&P 500. The paper use industrial production, risk premium, unemployment rate, US currency strength, and interest rate as a variable to look for the trend of the stock market. Finally, the S&P 500 ratio will drop, when the FED increase the interest rate with other factors being stable[9]. Leduc and Liu talked about the stock market through the aspect of COVID-19. The paper find that COVID-19 has a huge negative influence on the stock market. Even though the FED conducted the Monetary easing policy, the S&P 500 decreased sharply at the beginning of COVID-19. When the interest rate goes up, the stock market will drop out sharply[10].

1.3 Objective

This article focuses on searching for solutions of economy and finance problems. Such as tight currency policy problem, high inflation and sliding stock market problem. This article uses five years' data of inflation, federal funds rate and S&P 500 index data to analysis the root of the recession. Then these researches try to find the right way to deal with the decreasing stock market and high inflation. What's more, there are some suggestions in this paper to improve the current crisis.

2. The current situation of the interest and the trend of S&P 500

2.1 The inflation of the America

With the development of the monetary easing policy and the supply imbalance, the US consumer price index goes up gradually. In order to estimate the America economy, the FED had implemented unlimited QE policy since the COVID-19 began. The monetary easing policy aggravated the inflation and the inflation level always rises to new heights.

Recent 5 years, the Federal Reserve was keeping the easing liquidity of the currency. Figure 1 shows that the America inflation index has climbed gradually from 2018 to 2020. The inflation index shows a dramatical upswing from 2020 to 2022. The FED had conducted the monetary easing policy since the finance crisis happened in 2008. The inflation climbed up gradually. The FED attempted to secede the monetary easing policy from 2018 to 2020. The percentage variation of inflation climbed down as we can see from figure 1. However, COVID-19 broke out in 2020. The world was in an economy and financial crisis. The Federal Reserve had to keep the policy of monetary easing to estimate the economy. Then the inflation raised to a higher level in 2021 and the growth of the inflation is going up sharply in 2022.

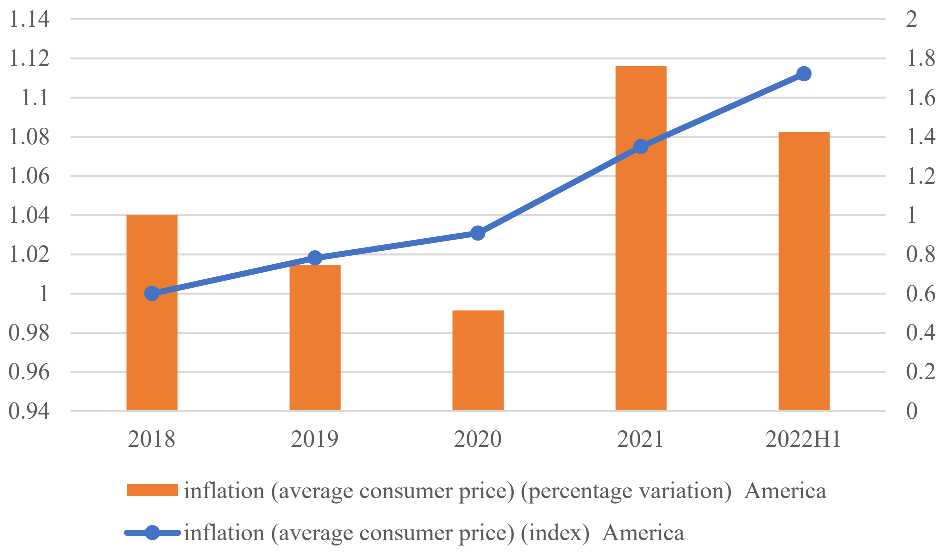

Figure 1. inflation index and percentage variation (2018-2022H1) (Source: EPS data)

2.2 The currency policy of interest in America

The Federal Reserve was attempting to secede the monetary easing policy during 2018 to 2019. The Federal funds rate went up during the year. However, with the beginning of COVID-19, the Federal funds rate had no space to climb up and the economy was in a crucial crisis. In order to enhance the economy and reduce unemployment, the Federal Reserve keeps the interest in a lower level.

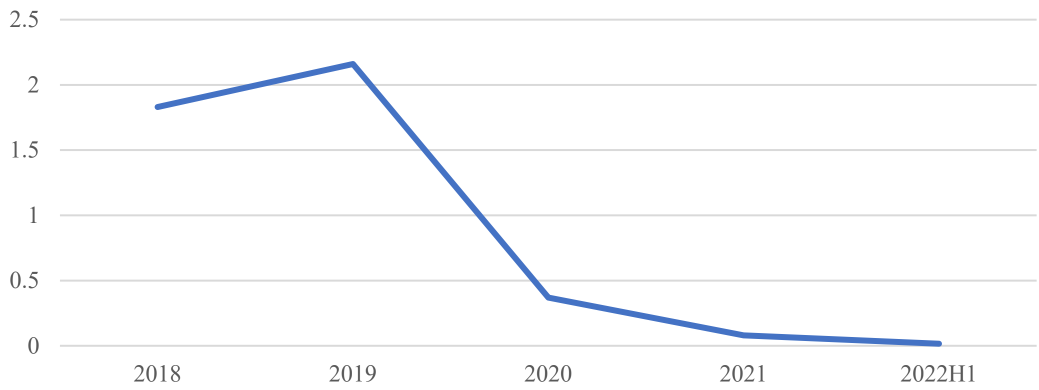

Figure 2. Federal funds rate (2018-2023) (Source: d.qianzhan.com)

As we can see from Figure 2 that the Federal funds rate goes through an up and down from 2018 to 2022. In order to reduce the inflation, the Federal Reserve enhanced the Federal funds rate in 2018. The inflation was depressed in 2018. Because of the breakout of COVID-19, the world economy stopped and the finance crisis came. The Federal Reserve lowed Federal funds rate to zero to estimate the economy and stock market which happened several stock fusing. Until in September 2021, Federal Reserve announced that it was time to conduct Temper policy which is helpful to secede the QE policy. The Federal funds rate shows a dramatic upswing at the beginning of 2022. Up to now, Federal Reserve raises interest rates multiple times. The expectation Federal funds rate would be higher in 2023.

2.3 The tendency of the S&P500

The Standard and Poor's 500, or simply the S&P 500 is a stock market index tracking the stock performance of 500 large companies which include all industries, listed on exchanges in the United

States. The S&P 500 index is an indicator of stock market. With the easing finance and monetary policy, the S&P 500 index shows an uptrend in general.

Figure 3. The S&P 500 index (2018-2022H1) (Source: Yahoo Finance)

With the economy environment went well, the stock market behaved steady in 2018 and 2019. The S&P 500 showed a sharp decrease in 2020 after the COVID-19 broken out. The FED decreased the Federal funds rate to zero to enhance the liquidity of stock market. There was an upswing in the S&P 500 index from 2020 to 2021. However, with a lot of money on the market, the CPI climbs up gradually and the inflation becomes higher and higher, which are harmful to the economy development and finance stability. Then the Federal Reserve has conducted the Temper policy since September 2021 to control the inflation. The efficiency is not significant. Because of the lack of money liquidity, the S&P 500 index decreases sharply in 2022H1. And the market expectation is pessimistic. There may be a deeper downswing in the future.

3. Results

3.1 The result of long-term monetary easing policy

The Federal Reserve had kept a lower level which was almost declined to zero since the real estate bubble busted and the finance crisis broke out in 2008. With more money flowed to the market, the investments were estimated and the economy recovered gradually and the stock market also rallied. However, the inflation of America showed an upswing and became higher and higher with the well development of the economy. In order to reduce the inflation, maintain financial stability and reduce the financial fragility, the Federal Reserve raised the federal funds rate from 2017 to 2019. The growth speed of inflation was efficient depressed. Then the COVID-19 broke out. The economy, finance and production met a recession stage. Everything got bogged down. The Federal Reserve decreased the federal funds rate to zero again to make the economy and stock market recover, until September 2021. The depressed inflation had a dramatical upturn during this time. Then the Federal Reserve conduct the Temper policy which is used to raise the federal funds rate periodically to reduce the inflation to secede the QE policy gradually. However, the inflation still stays in a high level after several rate hikes.

3.2 The problem of the stock market

The S&P 500 is an indicator of the stock market including stocks of many companies among various industries. Even though the Federal Reserve increased the federal funds rate in 2018 and 2019, the S&P 500 rate had a steady increase for the well economy environment. When the COVID-19 came to the world, every industry stopped and the shock market fused. The S&P 500 index met a sharp decrease in a short-term. With the decrease of the federal funds rate and more and more money were invested to stock market, the S&P 500 index had a gradually upturn and the spirit of stock market gradually stabilized down. More money means huger inflation in general. When the inflation increased to a high level, the Federal Reserve decline the federal funds rate in September 2021. The money in the market become less and less and the liquidity squeezes in stock market. The S&P 500 index keeps a downswing from the start of 2022. Up to now, the inflation still keeps in a high level and the federal funds rate is expected to keep an upswing in the future. The spirits of the stock market become pessimistic and there is a deeper downswing in the future.

3.3 The imbalance of supplies

With the creep of the world these years, many Black Swan events result in many complex consequences. The money become cheaper, the food, materials and energy become more and more expensive. The stock market has more risks and less profits.

Because of the COVID-19, the production of supplies is in a shortage. Even though the US government conduct easing finance policy and the FED decreases the federal funds rate, the price of oil and energy become higher and higher because of the shortage of supply. Besides, with the breakout of the war in Ukraine, the materials and oil become more expensive which sharply push up the inflation. In order to reduce the inflation, the Federal Reserve raises the federal funds rate which has a little efficiency and result a sharp decrease of the S&P 500 index. Now, the problems of supply are not resolved and China's economy recession and the stagnation of manufacturing exacerbated the materials shortage. The federal funds rate has a raising expectation following the higher inflation. If the materials, oil and energy supply are not guaranteed, the inflation will climb higher and higher. Nowadays, stock market has a pessimistic expectation and the S&P 500 may be in a lower level in the future.

4. Solution

4.1 Keep a flexible balance between up and down in federal funds rate

Compared with the inflation of American economy in 1981, the inflation has a huger influence than 1981. Volcker insisted to keep a high interest rate to gain the goal of low inflation. The Fed didn't back down and set the course to restrain growth in money and credit, which caused a high unemployment rate which kept for a long time. Besides, the America met the recession in economy, even though they finally let the inflation fall to 5 percent. However, the era goes and the social develops well. We can't use former methods to solve present plights. If we kept the tight currency policy, the economy would be in recession more quickly and the stock market would downturn which is harmful to the economy recovery and development. Nowadays, the main factor of inflation is the disbalance of supplies and demands. The shortage of energy and food push the inflation to a high level. The world capacity deficit and the War in Ukraine aggravate the worse condition. We can use Temper policy to recovery the economy and keep an increase trend of federal funds rate. The most important thing is that we should let the interest up and down in an appropriate migration section, or not keep the interest increasing all the time.

4.2 The importance of positive expectation on future stock market

So as to the stock market, the S&P 500 rate which represent the trend of market has kept a sharp decrease state since the federal funds rate become higher and higher. It is inescapable that the market would be in a lower level in a short-term than before, as well as the S&P 500 rate. However, we can avoid using tight currency policy with a firm attitude. The attitude of Fed has a leading effect on market mood. We can let the market to solve the problem itself rather than increase the tight atmosphere in stock market which absolutely can lead a recession. The Fed just should keep federal funds rate up and down in an appropriate migration section and control the trend in a decrease tendency. If we usually estimated the stock market in a lower interest, the stock market would keep liquidity and vitality which is good for the recovery and development of the S&P 500 rate.

4.3 The solution of the original problem of supply

In general, the disbalance of supplies and demands is the root of inflation. We can't simply use the currency policy to constrain the inflation which has a huge harm to economy and finance, such as the unemployment, the S&P 500 rate and so on. Currently, the energy and food supplies are difficult which can't be neglected. The shortage of energy and food push the inflation higher and higher. What's more, the War in Ukraine aggravates the lack, which not only decrease the S&P 500 rate, but also make the federal funds rate increase sharply. Biden put forward a policy to constrain the price of oil and energy price in order to depress the inflation. Even the inflation may decrease in a short time, the policy may cause a worse deterioration in a long-term. We should solve the root of supply lack. For example, we should support insufficient capacity industry with suitable subsidy policy which can stimulate the investment and provide more employment opportunities, we should enlarge the import of oil and energy from Canada. At the same time, we should accelerate the evolution of energy and expedite the research and development of clear energy. With the development of productivity and the recovery of energy, the stock market mood will have a benefit increase which means the S&P 500 rate will have an increase and recovery from the recession, even though the federal funds rate has a decrease trend.

5. Conclusions

This paper analyses the finance data and gives some feasible suggestions. The research finds that it's useless to simply increase the federal funds rate which could not decrease the soaring inflation but have deep negative effect on stock market lowering the S&P 500 index. Besides, the research finds that the best way to reduce the high inflation is not keeping tight currency policy. On contrast, the best way to solve the problem is conducting an excellent supply and demand system and keep a good market balance. Thus, three feasible suggestions are noticed in this paper. The first is that the FED should conduct a flexible federal funds rate policy rather than increase the interests all the time. The second is that we should let market itself to push the interests up and down in a controllable range, which is order to estimate the market dynamic and increase the stock liquidity. Finally, the government should urge the revolution of energy and make up the lack of supply on the market. Energy crisis is the original reason which causes this recession in COVID-19 era. Even though this research is not perfect and we have a lot of spots need go into more detail, I think the world will reduce more loss during this world crisis and turning point, if government and the FED adopt appropriate, effective and strong policies.

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