Research on the Influence of the Fed Rate Rise on Russian Economy

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Abstract. With the development of global economic integration, the link between state and state is closer, the Fed's renewed interest rate increase has increased the volatility of the Russian economy. On the basis of the present situation of Russia's economy, the emphasis is on the stability of the Fed's interest rate on the value of the Russian currency, the outflow of capital and the impact of financial risk. Taking the Fed's interest rate monetary policy as the background, combined with the actual situation of Russian economic development, this paper puts forward the corresponding suggestions.

1. Introduction
At the end of 2015, The Federal Reserve Board announced an increase of 25 basis points to 0.5% of the federal fund rate. One year later, the Federal Reserve increased its interest rate again at the end of 2016, this is the second increase in interest rates in ten years. The Federal Reserve increased its interest three times in 2017; it was the first time in more than 10 years to speed up the pace of raising interest rates, reflect the acceleration of the momentum of economic growth, it is also expected to increase its interest rate by three times in 2018. Compared with developed economies that are more mature in market mechanism, emerging economies are more likely to be affected by external shocks. The impact of American tight monetary policy on developed and emerging economies is different. Russia as an emerging market country, its economy is under the effect of preaching, have a certain impact. Russia has good resilience, potential foot, strong bearing capacity and so on. Because of the high dependence of the Russian economy on the international market, as a result of the Fed's increase in interest rates, it may have a certain impact on economic development. But it doesn't have a fundamental impact, therefore, a policy proposal to deal with the impact of the Fed's interest rate increase policy, efforts to solve the deep-seated problems in the process of Russian economic development.

2. The current situation of Russian economic development
2.1 A slight recovery in economic growth
The Russian Federal Bureau of Statistics issued a message that, first half of 2016, Russian fixed assets investment 5 trillion and 300 billion rubles, down 4.3% over the same period; the first quarter fell 4.8% over the same period. A rough estimate of Russian fixed capital investment in 2017 will increase by 1.9%. Joseph de Yan, the marketing director of BCS financial group, pointed out, The Russian economy has fallen into recession for 2015–2016 consecutive years and has to be traced back to 1990s, depending on the oil price of $35/pail, the Russian economy also shrunk by 2.5% to 3.5% in 2016, people's livelihood needs to work hard to solve. Under the complex international economic background, in 2016 the Russian economy continued to grow in a negative state of growth on the previous year, but the decline was obviously narrowed, showing signs of warming. Russian GDP first value of 385407 billion rubles in the first half of 2016, down 0.9% from the same year. The Russian Federation Statistics Bureau released the GDP data of the two quarter of 2016 in September 2016, data show a slump in the recession, the actual decline of 0.6% over the same period of the previous
year, the increase in speed has narrowed by 0.6 percentage points in the last quarter. First half of the year, the Russian economy was down 0.9% year on year, the decline was 0.3 percentage points smaller than the first quarter. Russia's 2016 GDP atrophy was about 0.6%. International rating agency is expected before the date of Moodie, the growth of Russia's economy in 2018 will be 1.5%.

Table 1. 2016-2017 years of the same period of change in Russian GDP.

<table>
<thead>
<tr>
<th>The same period of change of GDP in 2016</th>
<th>The same period of change of GDP in 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>first quarter</td>
<td>first quarter</td>
</tr>
<tr>
<td>-1.2%</td>
<td>+1.2%</td>
</tr>
<tr>
<td>Second quarter</td>
<td>Second quarter</td>
</tr>
<tr>
<td>-0.6%</td>
<td>+1.6%</td>
</tr>
<tr>
<td>Third quarter</td>
<td>Third quarter</td>
</tr>
<tr>
<td>-0.4%</td>
<td>+1.6%</td>
</tr>
<tr>
<td>Fourth quarter</td>
<td>Fourth quarter</td>
</tr>
<tr>
<td>-0.2%</td>
<td>+1.9%</td>
</tr>
</tbody>
</table>

Source of information: http://www.worldbank.org.cn/ (+ Show up, -Indicate a decline)

Analysis of current data and trend of development, 2017 there is a weak growth in the Russian economy, but the basis for maintaining growth remains unstable, lack of substantial impetus for economic growth. The economic growth of Russia depends largely on the level of oil prices. In the case of rising oil and gas prices in 2016, the proportion of oil and gas exports in the whole year is still less than 50% of the Russian federal revenue. In 2017, Russia quietly carried out the 5 interest rate reduction, the benchmark interest rate of 10% is reduced to 8.25%. The Russian central bank said, as inflation slows down. Interest rates will continue to be reduced in the future. The international oil price has created a positive external atmosphere for the Russian economy. Oil prices began to go to the bottom in January 2016, started to rebound from the minimum of $26; it reached a maximum of about $54 in 2016. At the end of 2017 oil prices are about $40 / barrel, it is predicted that oil prices will remain near this level during the 2018–2019 year period, the Russian Central Bank and the Treasury Department are trying to maintain a $40/pail situation. Russia continues to relax the back of monetary policy. It is determined by the mutual influence of three factors such as the Russian economy, the ruble trend and the international oil price.

2.2 Temporary recovery of trade exports

The General Administration of China Customs said at a press conference in January 2017, the gross import and export value of goods trade between China and Russia increased by 23.9% in 2017, the development of emerging markets has been fruitful. Russia became a net food exporter in 2017. In February 2017, Russia's trade in EU countries accounts for 46% of total foreign trade. The proportion of the trade volume of the CIS countries accounts for 11.7% of the total foreign trade. The proportion of Eurasian Economic Union countries is 8.7%.

Table 2. 2016.01-2017.03 Russian import and export statistical table [Billions of dollars].

<table>
<thead>
<tr>
<th>Time</th>
<th>Imports and exports</th>
<th>Year-on-year change</th>
<th>Export volume</th>
<th>Year-on-year change</th>
<th>Import volume</th>
<th>Year-on-year change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016.1–3</td>
<td>970.8</td>
<td>-26.6%</td>
<td>612.8</td>
<td>-32.1%</td>
<td>358.0</td>
<td>-14.8%</td>
</tr>
<tr>
<td>2016.04</td>
<td>363.0</td>
<td>-21.3%</td>
<td>219.8</td>
<td>-28.8%</td>
<td>143.2</td>
<td>-6.2%</td>
</tr>
<tr>
<td>2016.05</td>
<td>357.7</td>
<td>-20.5%</td>
<td>221.6</td>
<td>-27.7%</td>
<td>136.1</td>
<td>-4.5%</td>
</tr>
<tr>
<td>2016.06</td>
<td>363.3</td>
<td>-19.9%</td>
<td>214.7</td>
<td>-28.6%</td>
<td>148.6</td>
<td>-2.7%</td>
</tr>
<tr>
<td>2016.07</td>
<td>338.2</td>
<td>-21.8%</td>
<td>191.3</td>
<td>-30.1%</td>
<td>147.0</td>
<td>-7.5%</td>
</tr>
<tr>
<td>2016.08</td>
<td>410.5</td>
<td>+ 0.5%</td>
<td>234.3</td>
<td>- 7.5%</td>
<td>176.1</td>
<td>+13.7%</td>
</tr>
<tr>
<td>2016.09</td>
<td>429.7</td>
<td>+ 0.5%</td>
<td>257.9</td>
<td>- 3.2%</td>
<td>171.8</td>
<td>+ 6.5%</td>
</tr>
<tr>
<td>2016.10</td>
<td>425.4</td>
<td>- 2.5%</td>
<td>251.6</td>
<td>- 8.3%</td>
<td>173.9</td>
<td>+ 7.4%</td>
</tr>
<tr>
<td>2016.11</td>
<td>436.4</td>
<td>+ 5.4%</td>
<td>270.0</td>
<td>+ 8.4%</td>
<td>166.4</td>
<td>+ 6.3%</td>
</tr>
<tr>
<td>2016.12</td>
<td>496.5</td>
<td>+ 8.6%</td>
<td>314.3</td>
<td>+ 7.7%</td>
<td>182.2</td>
<td>+10.2%</td>
</tr>
<tr>
<td>2017.1–3</td>
<td>1285.5</td>
<td>+32.0%</td>
<td>833.4</td>
<td>+35.8%</td>
<td>452.2</td>
<td>+25.5%</td>
</tr>
</tbody>
</table>

Source of information: http://www.customs.ru/

Expert estimate, the Russian foreign trade recovery at the end of 2016 contributed 1.1% to its GDP growth. The Russian central bank wants to use the means of lowering interest rates to prevent the
revaluation of the ruble. For a single economic structure, Russian which mainly exports oil and gas resources, in the face of constant appreciation of the currency, exports are easily affected. In order to maintain the advantage of export, as long as the trend of revaluation of the ruble is not over, the interest rate reduction will continue to go on.

2.3 The effect of economic restructuring has not yet been shown

The Russian territory is the first in the world, the richness of resources is the first in the world, the population of Europe is the first, Russia is the only country of all countries that can reach 100% of its own resources, arable land—the first superpower of Europe. The root of the Russian economy's dilemma is the serious imbalance in its economic structure. According to the State Bureau of Statistics of the Russian Federation, Russian industry increased by 0.4% in the first half of 2016. The Russian mining industry increased by 2.6% in 1–6 months of 2016, manufacturing has fallen by 0.9%, because the relatively small size of manufacturing means that the self added capacity of the Russian economy is extremely fragile, economic growth is more dependent on the export of resources like products. The Russian government will support agriculture, exportation, encourage consumption, the development of high and new technology industry is the main direction of future economic work. Only in the case of substantial progress in the restructuring of Russia's economic structure, the basis of this growth is likely to be stable and consolidated. Behind the Russian economic and financial difficulties, there is a lack of reform. Russia's Minister of economic development Dmitry Oreshkin said, in 2017, the growth rate of Russian GDP was 2%. The growth rate of the Russian economy in 2018 and 2019 was 1.5%. Putin stressed many times, “The Russian economy has developed to a special stage, the stage of the reform of the industrial structure needs to be vigorously carried out, the need to gradually reduce dependence on input and dependence on resources exports, developing processing industry and encouraging consumption through scientific and technological innovation, the formation of endogenous growth mechanism, becoming the key direction of the future transition of Russia.” Russia should not ignore the risk factors of international oil prices. July 2016, China Academy of Social Sciences, Russia, Eastern Europe and Central Asia Research Institute, Chinese Academy of Social Sciences “The Belt and Road Initiative” research center, CITIC reform and Development Research Foundation and Social Science Literature Press combined released 《Russia yellow book: Russian Development Report (2016)》 point out, Russia's internal stability in 2016, maintain a steady and orderly development momentum, a slight improvement in the economic situation, lack of momentum for long-term growth, the steady progress of Sino Russian Relations, expect “an area of an alliance” cooperative development.

3. The influence of American interest rate increasing monetary policy on Russian economy

3.1 Cause a certain degree of devaluation of the ruble

The decline in oil prices in the international market and the impact of Western sanctions, Russia's exports began to shrink year by year since 2014; at the same time, the continued slump in international oil prices led to a sharp depreciation of the Russian currency since 2014. The exchange rate of the ruble will continue to follow the fluctuation of oil prices in 2016, risk assets. Oil prices will rise to $35～40 per barrel in the first quarter of 2016, the ruble's exchange rate against the dollar will then rise from 74:1 to 67:1, the average exchange rate of the ruble to the dollar will reach 69:1 of the year. In the context of Western sanctions, the negative attitude of investors to Russian investment, as well as capital outflow and inflation, have been plagued by Russia, the Central Bank of Russia has been carrying out a tight monetary policy, inflation was down to about 4% by the end of 2017. The fall in oil prices caused Russia to lose up to 60% of its oil revenue in 2017, and then lead to the devaluation of the Russian currency. The Russian consumer price index rose by 0.6% in January 2017; in February, the ring rose by 0.2%, in March the ring rose by 0.1%. Data of the Central Bank of Russia,
Inflation rose by 5% in January 2017, February is 4.6%, March is 4.3%. Russia's 2016 inflation rate was about 5.5%.

After the American increase in interest rates, as a result of the devaluation of the ruble, facing the devaluing ruble, change it into dollars and euros to keep a certain value, make a lot of capital outflow, serious harm to the Russian economy. Under the background of slowing inflation and stimulating the economy, the central bank reduced the key interest rate from 10% to 9.75% in March 2017. Experts think its interest rate may be further reduced to about 8%. Under the spillover effect of monetary policy adjustment in the United States, Russia is urgently needed to solve the shortage of domestic demand support, foreign demand continues to be sluggish.

The American interest rate increase policy has a huge impact on Russian capital flows and currency exchange rates, the resulting massive outflow of capital leads to a general devaluation of the Russian currency. International commodity prices continue to go down, it also has a negative impact on its economic growth. The state of the foreign exchange revenue and expenditure of a country is determined by the flow of import and export and capital, export and capital inflow to form the country's foreign exchange earnings, import and capital outflows to form the country's foreign exchange expenditure. No consideration of changes in import and export, When the foreign capital outflow in Russia increases as a result of the US interest rate increase policy, the increase in foreign exchange expenditure, increase in demand in the foreign exchange market, the rise in the price of foreign exchange, domestic currency tends to devalue. Tightening monetary policy in the United States can relieve inflationary pressures, restore external demand, the pressure on the appreciation of the country's currency will be relieved, but international capital will be returned to the United States. The urgency of the Russian economic transformation will be further increased, the flexibility of its monetary policy has also been forced to improve.

3.2 Leading to a large outflow of effective capital

The biggest impact of the Fed's increase in interest rates on the Russian economy is the change in the flow of cross-border capital. The readjustment of the investor's portfolio makes a part of the capital, withdrawing from home, return to the United States, the consequence is the turmoil in the capital market. Fed rate rebounded, and then reduce the difference between the United States and other countries, Attract capital backflow. The Federal Reserve carries out the period of increasing the interest rate of the monetary policy, raising the rate of interest rates in the US market, increasing the expected income level of US assets, leading to the inflow of profit - in capital from other countries to the United States. The American monetary policy of increasing interest rates is an important driving factor in the capital outflow of the emerging economies such as Russia. The rise in American interest rates has led to a narrowing of the gap between the United States and the emerging economies, the risk of capital outflow has been increased.

The capital outflow of the Russian economy, stock market fall, the phenomenon of currency devaluation, means that we need to improve the ability to resist volatility in financial markets. Overabundance of local liquidity is caused by the return of the dollar, so it's a need to raise interest rates. Driven by the increase of interest rates, further backflow of the global dollar, other countries in the foreign exchange dollars taken away quite a part of the inflow and outflow, so that the money supply is not enough to keep the economy running, light is the economic crisis inflation is heavy, the collapse of the monetary system leads to turbulence. At this time, most countries in the world lack money to maintain the economic operation and lead to the collapse of the production system, the United States can develop new technologies and restructure production units due to the abundance of liquidity.

3.3 To a certain degree of financial risk

The Fed's increase in monetary policy will make the dollar appreciate, devaluation of other currencies, global exchange rate market volatility will increase. The impact of the global slowdown, according to the theory of purchasing power parity, the purchasing power of money is the fundamental factor in
determining the change of exchange rate. When the expansion of a country's monetary policy leads to a certain amount of currency overflowing, the purchasing power of money will fall; the exchange rate of the country's currency will weaken. Conversely, when a country's monetary policy is tight, the lack of liquidity will increase the purchasing power of money, the exchange rate of the country's currency will be stronger. In this sense, when the Fed raises interest rates to tighten monetary policy, contraction of liquidity in the market is the consequence of the dollar from weak to strong. The dollar is the currency of International Commodities, so a strong dollar means a decline in international commodity prices, the devaluation of the ruble relative to the dollar, will stimulate the development of its export oriented industry, has a certain impact on the export of Russia. One side, the price of export commodities has a certain competitiveness in the international market. On the other hand, because of low price, will affect the final income level, therefore, there is a possibility of a decline in export earnings from the exporters of resources. For the Russian economy that is in urgent need of economic restructuring and industrial transformation and upgrading, Due to the decline in the price of energy and raw materials, it is possible to lead to excessive consumption of resources and energy, weakening the impetus for structural reform.

The Fed's withdrawal from quantitative easing monetary policy will increase interest rates, there will be a lot of risk, with the appreciation of the dollar and the decrease in liquidity in the international market, vulnerability in the international economic system will be exposed, and there is a risk of a financial crisis. It is necessary to adjust the economic structure and increase the internal demand to prevent the effect of the tightening monetary policy on the economy.

4. Measures taken by Russia the Fed rate rise of the monetary policy

4.1 The monetary policy of increasing interest rates at the same time

Assumptions based on the static macro-economic model, international capital flow is a function of interest rate, the impact of capital outflows is to reduce the rate difference between the country and the United States by a substantial increase in domestic interest rates, the power to weaken the capital outflow. Due to the profit of capital, the transnational flow of capital is mainly affected by the difference of interest rate between the two countries. Therefore, the Central Bank of Russia can increase interest rates in the domestic market, encourage capital to stay in the country, the driving force to reduce capital outflow. The capital that is affected by the interest rate is mainly short-term capital, this part of the capital is highly speculative, the direction of its flow is not stable, vulnerability to market expectations, this needs to be given enough attention by the Central Bank of the countries concerned. To some extent, raising interest rates can mitigate the impact of the Fed's increase in interest rates on Russian domestic capital flows. Making full use of the country's existing industrial potential while continuing to give full play to the advantages of fuel energy exports, produce more export goods suitable for the international market. The successful transformation of the military system is a matter of the overall situation of the national industrial revival, the main direction of conversion should be placed in the medical, shipbuilding, energy, aviation, space and other high-tech fields, the system should be continued, technology, comprehensive transformation of commodity use, to speed up the conversion process, creating more and more internationally competitive civilian products in these areas.

4.2 Implementing the policy of foreign exchange buffer

Maintaining the basic stability of the national currency exchange rate is an important task of the Central Bank of a country. The most common way to maintain the stability of the exchange rate is the central bank's intervention in foreign exchange markets, use foreign exchange reserves to put foreign exchange in the market, to re realize the balance of the market, the impact of the flow of buffer capital on the exchange rate of domestic currency. Exchange rate as the price of foreign exchange, its change is mainly the result of the change in the supply and demand of the foreign exchange market. The state of foreign exchange revenue and expenditure is determined by the flow of import, export and capital,
export and capital inflow to form the country's foreign exchange earnings, import and capital outflows to form the country's foreign exchange expenditure. When the Fed raises interest rates, it will lead to a country's capital outflow, outflow capital becomes the surplus demand of the foreign exchange market, thus disrupt the equilibrium of market supply and demand, lead to a rise in foreign exchange prices, devaluation of local currency. Easy to cause market confidence to collapse, cause a frenzy of capital outflow, it will also lead to higher import costs, the formation of import cost driven inflation.

4.3 Implementing macro regulatory policy

The flow of capital will lead to the fluctuation of asset prices in the Russian financial market, if the Fed has adopted a policy of increasing interest rates, end the expansionary monetary policy, will have an impact on the price of Russia's assets. Capital outflow led to a fall in stock prices, it will have a negative impact on Russian investment and consumption. Capital outflow leads to a fall in real estate prices, the negative impact on Russia is likely to be greater, even the collapse of the bubble in the real estate market, and then the financial crisis. Part of the debt of Russia is foreign debt, paid in foreign currency. The devaluation of the currency will lead to a sharp rise in the external debt burden of the economic subject, financial institutions have been greatly impacted, jeopardize the stability of the entire financial system in Russia. Therefore, to fully respond to the reversal of capital flow caused by the Fed's interest rate increase policy to its own economic system, especially the impact of the financial system. The rapid growth of residents' consumption has been one of the main driving forces of Russian economic development, in recent years, because of the residents' disposable money income, social consumption has fallen into a decline, in turn, the adverse factors that restrict economic growth. The Russian government starts the real estate consumption to drive the whole social consumption, the expansion of the mortgage business by financial institutions, provide financial support for people to buy housing, further promote the overall economic development. The original capital is seriously inadequate, this situation has worsened in the last two years. The main way of foreign financing was blocked by western economic sanctions. In order to get rid of this dilemma, Russia has abandoned its conservative debt policy for many years, hoping to expand the scale of debt, raising the level of debt to raise funds for development. Successful operation of non-bank financial sector, attract people and investors through bonds and other mechanisms.

The Russian government issued the Russian science and technology development strategy, the priority and primary task of the development of the high and new technology industry as the government work, taking the development of high and new technology industry as an important economic policy, Special emphasis on accelerating the market transformation of scientific research results. In order to ensure the smooth development of the high and new technology industry, the government will increase its investment, provide long-term government funding for scientific research projects with broad market prospects, a 7 year funding project will be launched in the near future, an additional 3 billion 500 million ruble of government appropriations on the basis of the original fund plan.

4.4 Strengthening regional monetary integration

From the perspective of international reserve management, the limited foreign exchange reserves of a country should balance the balance of payments. To respond to possible external shocks, there are two aspects to be considered. Thus there is a certain passive state of the limited foreign exchange reserve, Reducing the efficiency of the use of funds. Through regional monetary integration, to realize the sharing of resources in the region, So as to improve the efficiency of the use of limited foreign exchange reserves in the hands of all countries, To achieve cooperation and win-win results.

In the field of economy, politics, or security, the challenge is almost the same for the members of Asia-Pacific Economic Cooperation, Association of Southeast Asian Nations and Shanghai Cooperation Organization. There is a certain cooperative advantage in discussing similar problems and making common solutions, through the establishment of a variety of international trade and investment mechanisms, implementation of bilateral and multilateral agreements, create a unified
economic space, strengthening regional monetary and economic cooperation between Russia and its surrounding countries, alleviating the negative effects of increasing interest rates. Through the establishment of intra regional trade Centralized Settlement Mechanism, reduction of foreign exchange reserves occupied by Member States in order to balance of payments.

Signing regional currency swap agreements ensures that the member countries face the reversal of capital flows and the devaluation of money. Acquisition of high liquidity foreign exchange financing from other member countries through currency swap, so as to improve the strength and sustainability of the countermeasures, effectively realizing the sharing of regional foreign exchange reserves, maintain the market confidence of the member countries.

5. Summary

This paper analyzes the impact of the Fed's repeated increase of interest rates on the Russian economy from two angles of theory and demonstration, based on the current actual characteristics of Russian economy and strong financial risk antagonism, combined with the expected management methods adopted at present, the decision to raise the Fed's interest rate will be a slow process for Russia. Therefore, the Fed's interest rate increases, under the expected management, very cautious about every operation, all economies in the world need to be fully prepared and responded to, the United States does not want to increase its interest rate, unrest in the international financial market. As global integration becomes more and more close, the impact of market expectations is also more obvious, it is a slow process to set an interest rate hike. A double-edged sword must be used by the Federal Reserve to raise interest rates, from the formulation of monetary policy, means of foreign exchange control, implementing macro supervision, international monetary supply mechanism and perspective of regional integration to take a corresponding solution. It can also bring new development opportunities to the Russian economy, promoting the continuous reform and improvement of the domestic economic and financial mechanism, make its economy develop better.

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References