

## Analysis of the impact of financial market development on China's national economy

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### Abstract

Finance serves as the nerve center in the modern economic model, connecting various modern economic sectors and reflecting the development status of each modern economic sector. In the past 20 years, the international situation has been turbulent, and international economic development and recovery are also full of instability. The global interest rate hike frenzy led by the Federal Reserve has also added more risks to the stability of the financial environment. Currently, China is at a critical node in the transformation of its economic structure from growth to quality. The economic development structure also reflects the shift from a real-based economy to a virtual economy. The unbalanced characteristics of the transformation, in which the flow of financial capital can adjust the focus of the structure of economic development, and at the same time reflect the scope of benefits of economic development dividends, what role finance plays in the growth of China's national economy will be based on statistics. Analyze and conduct research.

### Keywords

Finance, economic structure, virtual economy, country name economy.

### 1. Introduction

The modern market economy is essentially a developed currency and credit economy. Its operation is characterized by the flow of value leading to the flow of physical currency, and the movement of funds leading to the movement of material resources. The healthy operation of the financial market can reflect whether the raising, financing and use of monetary funds are sufficient and whether the allocation of effective social resources is reasonable, thereby promoting the healthy development of the national economy. The three major factors that determine economic growth are mainly economic activity, knowledge growth and capital accumulation. In the past, China mainly adjusted its economic development structure through fiscal policy. After the 19th National Congress, China paid more attention to promoting economic development through adjusting and optimizing the financing structure through the operating mechanism of the financial market itself. As far as China is concerned, changes in the economic system are obviously the source of economic monetization and financialization.

In recent years, with the gradual opening up of China's financial industry, the entry of foreign banks, and the reform of domestic financial mechanisms, the financial industry has developed rapidly and the market scale has continued to expand. Although entering 2020, the market declined due to the impact of the new crown epidemic; overall, it still performed well and total

assets maintained positive growth. According to data, at the end of 2020, the total assets of China's financial industry institutions were 353.19 trillion yuan, a year-on-year increase of 10.7%. Among them, the total assets of banking institutions were 319.74 trillion yuan, a year-on-year increase of 10.1%; the total assets of securities industry institutions were 101,500 yuan billion, a year-on-year increase of 25%; the total assets of insurance industry institutions were 23.3 trillion yuan, a year-on-year increase of 13.3%. This shows that China's financial market continues to flourish, providing strong support for China's economic development.

But as the global inflation crisis rages on, financial risks are also increasing. Data shows that on June 26, the exchange rate of RMB against the US dollar once fell below 7, and the exchange rate of the US dollar rose by more than 0.8%. By 10:00 on June 27, the opening price of the exchange rate of RMB against the US dollar reached 7.24. Although it still remained at a high level, it was relatively Compared with the strong trend of the previous day, there is an overall downward trend.

The U.S. dollar exchange rate may continue to stay at a high level for some time in the future. There are two supporting factors. First, the hint that the Federal Reserve will continue to raise interest rates in July provides support for the strength of the US dollar. Federal Reserve Chairman Powell believes that there is still the possibility of discussing a 50 basis point or even 75 basis point interest rate increase at the July monetary policy meeting. "Fed Watch" predicts that the probability that the Federal Reserve will raise interest rates by 25 basis points in July to the range of 5.25%-5.50% will reach 75%, and there is a certain probability that the effect of the interest rate hike will continue in September; secondly, some countries are seeking emergency hedging in response to inflation. , successively sold the ruble, RMB, etc., and accumulated a large amount of U.S. dollars in the foreign exchange market, which will also have a transmission effect on the trend of the U.S. dollar.

Zhao Qingming, deputy director of the China Foreign Exchange Investment Research Institute, believes: "Only when internal and external conditions are reversed, the RMB exchange rate against the US dollar will stop falling and rebound." Although the central bank said that the US dollar interest rate hike has come to an end and the foreign exchange market is expected to return to stability, overall , if the economic weakness does not improve in the second quarter and the Federal Reserve continues to raise interest rates, it will still take some time for the RMB exchange rate to rebound and the trade market to return to balance despite the overall poor demand.

## **2. Empirical analysis**

### **2.1. Variable selection**

#### **2.1.1. Gross domestic product per capita**

The ratio of the absolute value of GDP to the average population in that year can measure the value and contribution created per capita. This article mainly studies the impact of the financial industry on China's national economy, so this indicator is selected as the explained variable.

#### **2.1.2. Various loans from financial institutions**

Loan refers to a form of credit activity in which banks or other credit institutions provide funds to enterprises and individuals at a certain interest rate based on the principle that funds must be returned. This indicator can relatively clearly reflect the amount of loans obtained by China's various economic sectors from financial institutions, and reflects China's financial loans and capital liquidity capabilities, therefore serves as an explanatory variable.

#### **2.1.3. Savings deposit**

Combining the above theoretical analysis, we can see that Chinese residents have a strong desire to save. On the one hand, it reflects the commitment of the currency savings function,

and on the other hand, it also affects China's money supply. Therefore, this variable is selected as the explanatory variable.

#### 2.1.4. Foreign exchange reserves

Foreign exchange reserves refer to foreign convertible currencies held by a country's monetary authority that can be used for external payments. Foreign exchange reserves support a country's foreign trade and international transactions. In the current era of economic globalization, opening up and foreign trade play an increasingly important role in a country's economic development, so foreign exchange reserves can be used as one of the explanatory variables.

#### 2.1.5. Broad money supply (M2)

At the current stage in China, it refers to M1 plus time deposits, urban and rural residents' savings deposits and trust deposits in banks from agencies, groups, military units, enterprises and institutions. From the above theoretical analysis, we can see that money supply plays many functions in our financial system, and on the other hand, it can also reflect and affect China's economic development level. therefore serves as an explanatory variable.

### 2.2. Model setting

This article selects the quaternary linear regression model as the initial setting, and the equation is set as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Among them, Y represents the per capita GDP of the explained variable, X1 represents various loans from financial institutions, X2 represents savings deposits, X3 represents China's foreign exchange reserves, and X4 represents China's money supply.

### 2.3. Data collection

The data is mainly collected through the National Macro Data Statistics Support System. China's per capita GDP and related financial indicators from 1990 to 2020.

### 2.4. Model estimation

The least squares method was used to initially estimate the model. The goodness-of-fit value of the model was 0.9971, indicating that the model fit well. Then test the significance of the explanatory variables of the model: the accompanying probabilities of the model's explanatory variables X1 and The effect of Y is not significant, and the t test fails. When testing the overall significance of the model, the accompanying probability of the F statistic is 0.0000, indicating that the model is overall significant and the F test passes. Overall, the model may have multicollinearity problems, so the model will be tested and corrected in the next step.

### 2.5. Model testing and modification

#### 2.5.1. Multicollinearity testing and correction

##### (1) Relevance test

The correlation coefficient values of the four explanatory variables are all greater than 0.8. It can be preliminarily judged that there is a multicollinearity problem among the explanatory variables. Among them, X4 has the highest correlation coefficient value. X4 can be retained in subsequent corrections and other variables can be gradually introduced.

##### (2) VIF inspection

| Variable | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
|----------|-------------------------|-------------------|-----------------|
| C        | 161402.1                | 2.956686          | NA              |
| X1       | 0.000243                | 1908.785          | 1053.521        |
| X2       | 0.000592                | 1464.025          | 750.3993        |
| X3       | 0.009917                | 77.64088          | 37.53229        |
| X4       | 7.32E-05                | 1099.071          | 584.6540        |

Figure 1: VIF value

The variance inflation factor value test is the most commonly used method to judge the multicollinearity of the model. Generally speaking, if it is greater than 5, it can be judged that the model has multicollinearity problems. The VIF value of the explanatory variable of the model is much greater than 5, indicating that the model does have serious problems. Multicollinearity problem.

### (3) Gradual regression correction

According to the previous results, the variable

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 3107.732    | 326.9831              | 9.504260    | 0.0000   |
| X3                 | 0.252416    | 0.033268              | 7.587324    | 0.0000   |
| X4                 | 0.028716    | 0.000724              | 39.65170    | 0.0000   |
| R-squared          | 0.997082    | Mean dependent var    |             | 24643.48 |
| Adjusted R-squared | 0.996874    | S.D. dependent var    |             | 22620.42 |
| S.E. of regression | 1264.707    | Akaike info criterion |             | 17.21483 |
| Sum squared resid  | 44785577    | Schwarz criterion     |             | 17.35361 |
| Log likelihood     | -263.8299   | Hannan-Quinn criter.  |             | 17.26007 |
| F-statistic        | 4784.578    | Durbin-Watson stat    |             | 0.854617 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

Figure 2: Stepwise regression estimation results

The model determines that the coefficient of determination is 0.997082, which is 0.996974 after correction, indicating that the model fits well. Then conduct a significance test on the model. The adjoint probabilities of the t statistics of the two explanatory variables X3 and X4 of this model are both 0.0000, indicating that the foreign exchange reserves and broad money supply represented by X3 and pass. The adjoint probability of the F statistic of the model is 0.0000, indicating that the model is overall significant and the F test passes. The dw value of the observed model is 0.854617, which is less than its minimum critical value, indicating that the model may have a first-order autocorrelation problem, so the model needs to be subsequently corrected for autocorrelation.

### 2.5.2. Autocorrelation testing and correction

#### (1) Partial correlation coefficient test

The DW value above determines that the model has first-order positive autocorrelation problems. However, since DW can only test low-order autocorrelation and cannot judge high-order autocorrelation problems, the partial correlation coefficient is used to further judge the correlation problems of the model. The results are as follows :

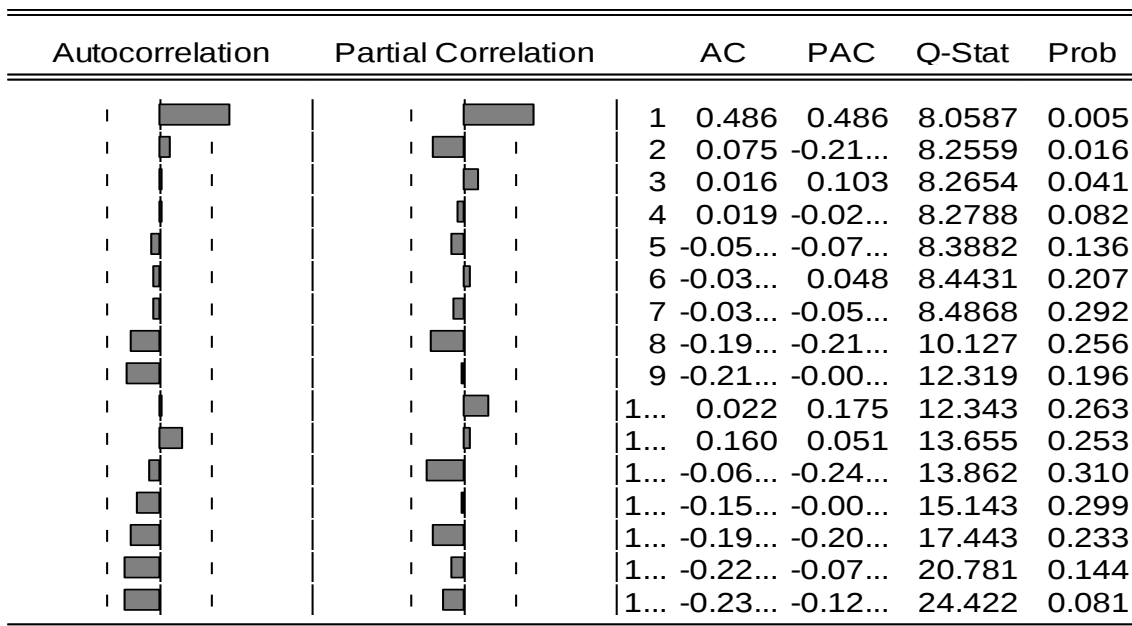


Figure 3: Partial correlation coefficient test results

As shown in the figure, in the white noise chart, you can see that in the second column, only the length of the first-period bar chart exceeds the dotted line on the right, indicating that the model only has first-order positive autocorrelation.

#### (2) Correction of generalized difference method

Use the generalized difference method to modify the model, that is, add the AR term and estimate the model. The results are as follows:

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 3199.734    | 403.9150              | 7.921800    | 0.0000   |
| X3                 | 0.304013    | 0.049918              | 6.090279    | 0.0000   |
| X4                 | 0.027162    | 0.001167              | 23.28159    | 0.0000   |
| AR(1)              | 1.109934    | 0.247055              | 4.492657    | 0.0001   |
| AR(2)              | -0.744938   | 0.242546              | -3.071319   | 0.0049   |
| R-squared          | 0.998470    | Mean dependent var    |             | 24643.48 |
| Adjusted R-squared | 0.998235    | S.D. dependent var    |             | 22620.42 |
| S.E. of regression | 950.3501    | Akaike info criterion |             | 16.76718 |
| Sum squared resid  | 23482299    | Schwarz criterion     |             | 16.99847 |
| Log likelihood     | -254.8913   | Hannan-Quinn criter.  |             | 16.84258 |
| F-statistic        | 4242.585    | Durbin-Watson stat    |             | 1.680430 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |
| Inverted AR Roots  | .55+.66i    | .55-.66i              |             |          |

Figure 4: Generalized difference estimation results

$$Y = 3199.734 + 0.304013X_3 + 0.027162X_4 + [AR(1) = 1.109934] + [AR(2) = -0.744938]$$

$$(7.9218) \quad (6.090279) \quad (23.28159)$$

$$R^2 = 0.99847 \quad \bar{R}^2 = 0.998235 \quad F = 4388.064 \quad DW = 1.68043$$

As shown in the figure, the modified coefficient of determination value of the model is 0.998235, indicating that the model fits well. Then conduct a t test on the model. The adjoint probabilities of the t statistics of the two explanatory variables are both 0.0000, indicating that the two explanatory variables have a significant impact on Y. The adjoint probabilities of the t statistics of the AR term are also less than 0.05. The t test pass. The accompanying probability of the F

statistic value is 0.0000, indicating that the model is overall significant and the F test passes. The DW value of the model is 1.68043. According to the DW value, it can be seen that the model no longer has the first-order autocorrelation problem. The strategic model is tested for economic significance. The coefficient values of X3, foreign exchange reserves and X4 money supply are all positive, indicating that foreign exchange reserves and money supply have a positive impact on the explained variable per capita GDP, which is in line with previous predictions, passed the test of economic significance.

2.5.3. Heteroskedasticity test and correction

Finally, a white test is performed on the model, and the test results are as follows:

| Heteroskedasticity Test: White |          |                      |        |
|--------------------------------|----------|----------------------|--------|
| F-statistic                    | 16.37701 | Prob. F(16,14)       | 0.0000 |
| Obs*R-squared                  | 29.42772 | Prob. Chi-Square(16) | 0.0212 |
| Scaled explained SS            | 20.16324 | Prob. Chi-Square(16) | 0.2130 |

Figure 5: Heteroskedasticity white test results

As shown in the figure, the model white test nR2=20, and its accompanying probability P is equal to 0.2>0.05, indicating that the model accepts the null hypothesis and there is no heteroskedasticity in the model.

2.6. Model application

Based on the above empirical data analysis, the following conclusion can be drawn: China's foreign exchange reserves have a positive impact on China's per capita GDP. The specific manifestation is that for every US\$10 billion increase in foreign exchange reserves, China's per capita GDP It increases by about 30 yuan per person; money supply also has a significant positive effect on China's per capita GDP. The specific manifestation is that for every 100 billion yuan increase in money supply, China's per capita GDP increases by 27 yuan. From the perspective of specific economic performance, China will continue to implement a prudent monetary policy in 2020 to create a good monetary and financial environment to promote the high-quality development of the Chinese economy. In the future, China will open up room for monetary easing. First of all, because the Federal Reserve will raise interest rates in 2022, the constraints on domestic monetary policy will be relatively limited. The rise in U.S. bond interest rates is more likely to be reflected in the flattening of the yield curve. Domestic monetary policy space can be released through moderate depreciation of the RMB exchange rate. Secondly, China should actively participate in international trade, while maintaining an appropriate foreign exchange scale and enhancing capital confidence.

3. Countermeasures and suggestions

3.1. Improve monetary policy tools

Through the above empirical analysis, it can be concluded that money supply has a significant positive effect on China's per capita GDP. Therefore, money supply has a certain promoting effect on the national economy. However, monetary policy also has a certain time lag. Therefore, We should improve relevant monetary policy tools and enhance the flexibility and forward-looking nature of monetary policy by strengthening open market operations, improving the rediscount system and deposit reserve policies.

3.2. Maintain an appropriate scale of foreign exchange reserves

According to the above analysis, available foreign exchange reserves can play a positive role in China's national economy. From an economic theory perspective, foreign exchange reserves can improve the shortage of foreign exchange supply, increase a country's ability to pay

externally, improve overall national strength, and strengthen social stability. The confidence of all walks of life in China's financial development encourages the continued large inflow of foreign capital, and can also help the country use indirect control methods to adjust the balance of international payments and maintain the confidence and ability to maintain the stability of the RMB exchange rate. Therefore, China must ensure a certain scale of foreign exchange reserves. China has now reached a very high level of opening up to the outside world, and foreign trade has become an important economic sector in China's economic development. Therefore, China must maintain an appropriate scale of foreign exchange reserves to promote a balanced internal and external economy and healthy development. We should consider the country's actual economic factors, make full use of the extent of foreign investment and international financing capabilities, and look at China's reserve needs rationally.

### **3.3. Improve the service mechanism of financial institutions and strengthen financing services for micro-enterprises.**

According to the preliminary estimation results of the model, it can also be seen that loans from Chinese financial institutions also have a certain positive effect on per capita GDP. Although China's capital market has begun to take shape, the development of the multi-level capital market is immature and the barriers to capital entry are high. Therefore, it is difficult for micro-enterprises to achieve financing purposes through the capital market. China's entrepreneurial financing sector that specifically serves micro-enterprises is also There are fewer, so China can increase the number of financial institutions that specifically serve micro and small enterprises, and at the same time change the concept of bank financial management and increase financing services and loan support for small and medium-sized enterprises.

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