

An Empirical Analysis of the Factors Affecting the International Competitiveness of China's Financial Service Trade

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Abstract

Since the 21st century, the trend of competition and cooperation among countries has become increasingly obvious, the trade between countries and regions has become more frequent, the level of international division of labor and cooperation has been continuously improved, and the resources have been optimally allocated all over the world. How to have a comparative advantage in today's free financial trade is an important issue that needs us to study urgently. With the continuous deepening and adjustment of China's industrial structure, the financial service industry has achieved great development. In recent years, China is also continuously promoting the development of green finance and Inclusive Finance, helping the financial industry expand the service field and realize the healthy and green development of the financial industry. However, it is undeniable that compared with developed countries, China's financial service trade started late, and there is still a certain gap. In the financial service system, the legal system is not perfect, the core competitiveness of employees and the construction of financial infrastructure are still prominent. In this context, it is necessary to study the factors affecting the international competitiveness of China's financial service trade. Firstly, taking the export volume of financial service trade as the explanatory variable, this paper selects the per capita disposable income of urban residents, the number of employees in the financial industry, the amount of fixed asset investment in the financial industry, the efficiency of the financial system, the legal deposit reserve ratio and the exchange rate of RMB against the US dollar as the explanatory variables to analyze the influencing factors of the international competitiveness of China's financial service trade. Due to the incomplete individual data in recent years and the impact of the epidemic, the relevant values have extreme states, which affects the overall research level. Therefore, the annual data from 2000 to 2017 are selected. The data can be obtained through wind screening. Through the scatter diagram, it is judged that there is an approximate linear relationship between the export volume of financial service trade and each explanatory variable, Establish a multiple linear regression model of China's financial service trade with the help of Eviews 7 2. The parameter estimation formula of the regression model is obtained by using the ordinary least square method. The multicollinearity, heteroscedasticity and autocorrelation were tested and corrected. There is serious multicollinearity in the regression model, and there is still multicollinearity after simple logarithmic transformation. Further, the stepwise regression method is used to screen and eliminate the variables, the legal deposit reserve ratio and the exchange rate of RMB against the US dollar. White test is used to prove that there is no Heteroscedasticity in the model. DW test can not be used to judge whether there is autocorrelation, so further use LM Test to judge that the model has second-order autocorrelation, modify it with generalized difference method, and finally obtain the optimized regression model of international competitiveness of financial service trade. Finally, the logarithm of the original data is taken for unit root and ADF test respectively. It is found that three explanatory variable sequences are first-order single integer, excluding non first-order single integer and non cointegration variables. Finally, there is a long-term equilibrium relationship and an error correction

model is established. According to the analysis results, this paper puts forward corresponding countermeasures from different levels to promote the international competitiveness of China's financial service trade.

Keywords

Financial Services Trade; International Competitiveness; Linear Regression; Multicollinearity; Error Correction Model.

1. Introduction

1.1. Research Background

With the deepening adjustment of the financial industrial structure, the total import and export volume of China's financial service trade fluctuated and increased from 2000 to 2014. The specific data are shown in figure 1 2014. From 2014 to 2017, there was a "V" change, but on the whole, it was a good trend. After China's entry into WTO in 2001, it actively sought the opening in the field of financial service trade under the framework of WTO, and worked hard to promote the opening of China's financial market and the continuous development of financial service trade.

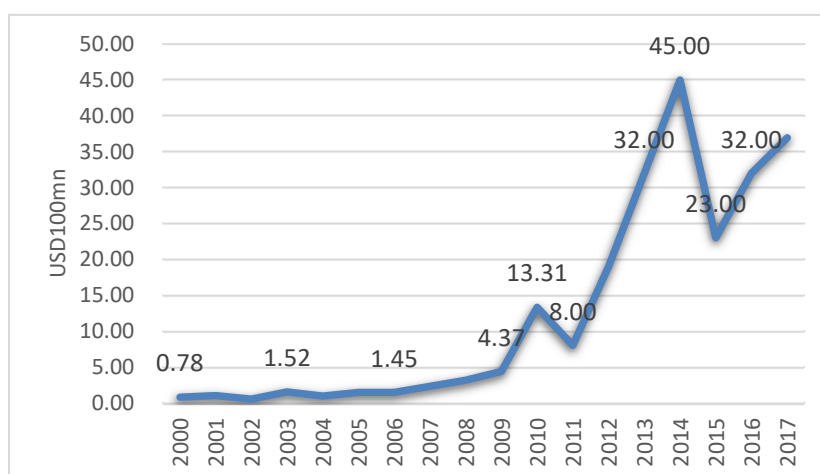


Figure 1. Total import and export volume of China's financial services trade from 2000 to 2017

Data source: wind database

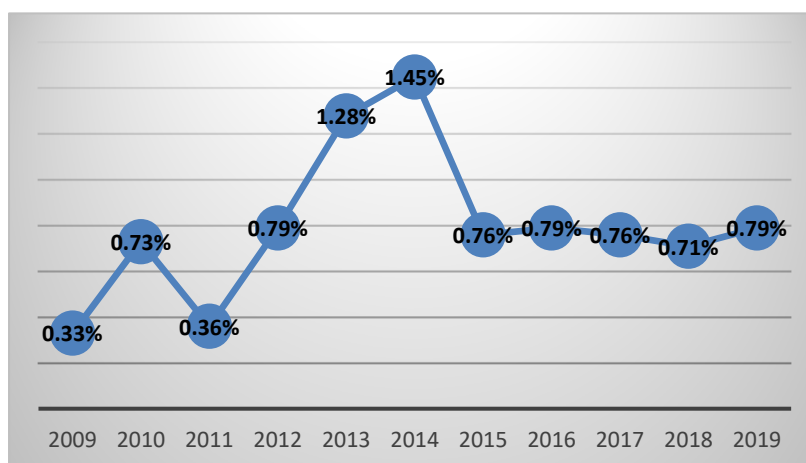


Figure 2. Proportion of China's financial service trade in overall service trade from 2009 to 2019

Figure 2 shows that the proportion of China's financial service trade in the overall service trade shows a fluctuating trend from 2009 to 2019. In 2014, the proportion of financial services trade in the overall trade reached a peak, but it was only about 1.45%. After falling to 0.76% in 2015, it fluctuated up and down within its range. In 2019, China's export of financial services trade increased to US \$3.9 billion. However, it only accounts for 1.39% of the total export of service trade, which is significantly different from 12.2% of tourism and 16.6% of transportation. As an important development direction of all countries, China's financial industry started late, developed slowly and lacked experience. Although the scale of financial service trade is growing, it accounts for a small proportion in the whole service trade system, indicating that China lacks core competitiveness in the field of financial service trade, At the same time, it also reflects that China's financial service trade has great development potential.

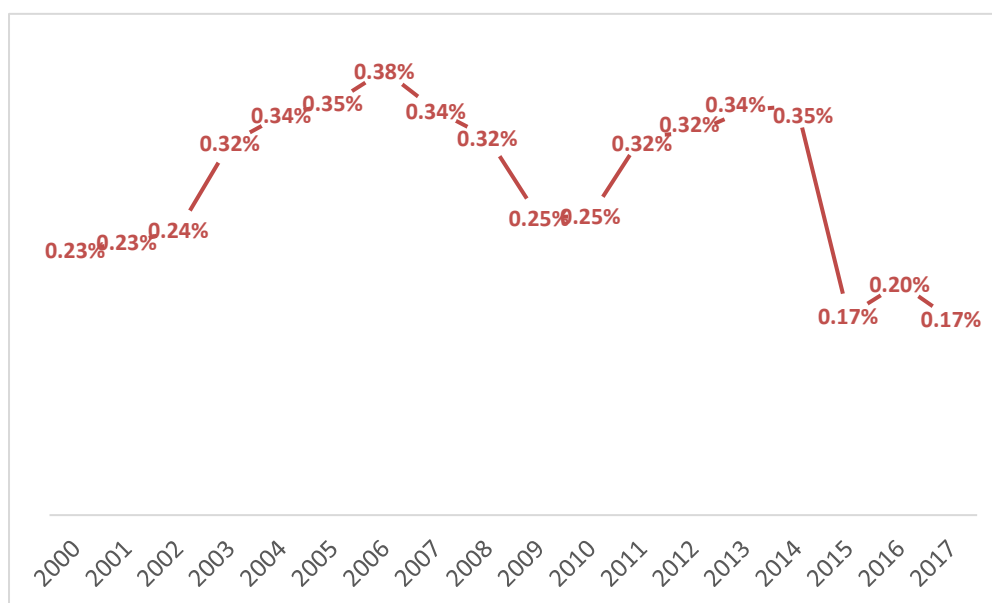


Figure 3. Openness of financial services trade

Data source: wind database

On the whole, the openness of financial service trade showed an "m" shape, reaching a peak in 2006, about 0.38%, mainly because China's financial industry had just developed slowly at that time and sought economic growth points in the process of continuous learning and exploration; After that, it fell to 0.25% in 2009, mainly because of the global economic crisis in 2008, which made the global economy depressed, the financial service industry suffered serious setbacks, and the opening level of financial service trade also decreased [2]. Figure 3 shows that China's financial service trade showed an upward trend from 2009 to 2014, and then plummeted from 2015 to 2017. Since 2015, the power of world economic recovery is still insufficient, the trade in goods continues to grow at a low speed, and the risk of financial market has increased. Emerging markets and developing countries and regions are generally facing the impact of economic recession and are cautious about the opening of service industry. Affected by this, the global demand for services has declined significantly, resulting in a linear decline in the openness of financial services trade due to insufficient demand.

1.2. Research Meaning

Theoretical significance: in the future, the competition of international competitiveness is no longer just the competition of science, technology and culture, but the competition in the financial field is more intense. It is a pool of capital. The development of the financial industry is of great significance to stabilize the development of the national economy, and the trade in

financial services, as an important part of it, is an important way for countries to carry out international trade, It is an important point of dependence for the development of export-oriented economy. [3] Since the reform and opening up, China's economy has made great strides forward, and the huge growth rate shows that China's financial service trade is constantly developing. However, the international comparative study with the above data shows that the level of China's financial service trade is still relatively weak at the international level. In such an economic situation, how to find the main influencing factors affecting the international competitiveness of China's financial service trade and how to improve the international competitiveness of China's financial service trade is particularly important.

Practical significance: in short, financial service trade is the trade of financial services between countries or regions, involving a variety of forms of financial services. Domestic and foreign researchers mainly use the principal component method and SPPs for data analysis, focusing on the analysis of overall influencing factors, There is a lack of detailed analysis on the situation of human resources in specific financial fields and the application of new Internet technologies. This paper selects the number of financial practitioners to reflect the specific situation of China's financial service trade and reflect the situation of human capital; The choice of Internet penetration as an explanatory variable is mainly to comply with the development trend of social network economy. The Internet Digital financial economy also came into being and its influence is expanding. At the same time, the study of the efficiency of the financial system can better reflect the economic operation state and provide some quantitative data support for the development of the national financial industry, It is convenient to better explore the key factors of the competitiveness of China's financial service trade, promote the government to make reasonable decisions based on practical data and practical cases, and provide reference basis for judging the trend of financial service trade.

1.3. Journals Reviewed

1.3.1. Foreign Literature Review

Scott (1996) selected more than 80 financial institutions in North America, including banking, insurance and securities, and then used a variety of analysis methods to analyze their international competitiveness. Scott believes that financial products and financial services are important areas for the development of financial service industry. Therefore, in the process of studying the competitiveness of financial industry, he focuses on financial products and financial services, and believes that the quality of products and services is directly related to the level of its international competitiveness. Therefore, we can know that Scott did not analyze the external influencing factors, but studied the international competitiveness of financial institutions based on his own situation.

Arthur Grimes (2001) analyzed the "competition principle" of APEC in the process of studying the international competitiveness of financial service trade. The purpose of formulating this principle is to improve the international market. If one country's income level is higher than that of another country, it also has a higher comparative advantage; On the contrary, the lower the trade comparative advantage.

Baji school (2003) believes that with the innovative development of the financial industry, the financial industry is being redefined, mainly in the form of financial services; It is necessary to study how to improve the international competitiveness of financial service trade from the aspects of individuals, enterprises, economic level and regulatory system. Moserian (2004) believes that increasing the innovation of the financial industry, developing differentiated financial products, and promoting intra industry trade in the field of financial service trade; Allowing foreign financial institutions to enter China's financial market and accelerating the overseas development of China's financial institutions is conducive to expanding a country's

financial service trade. At the same time, introducing the strategic investment of foreign powerful financial institutions can also enhance their international competitiveness.

In her research on financial services, Tina (2004) proposed to expand the marketing channels of financial products, take various ways to expand the influence of financial products and strengthen the publicity of financial products. Sheila (2006) made a comprehensive analysis of financial service trade by using relevant knowledge of Econometrics for the first time [4]. He proposed that the international competitiveness of a country's financial service trade can be further improved by cultivating high-quality talents, strengthening innovation in the field of technology and strengthening the joint supervision of relevant departments.

1.3.2. Domestic Literature Review

Reference Wang Yuting (2018) mainly analyzed the current situation of China's financial service trade and expounded it from the three levels of production factors, financial related industries and government policies. She mainly used the comparative analysis method and literature research method. Finally, she believed that the improvement of the level of service trade in the financial industry does not only depend on the strength, but should always grasp the development opportunities, At the same time, talents are the necessary driving force for the development of the industry. It is necessary to speed up the collection and exchange of talents in the field of Finance and provide suggestions for the development of financial service trade.

Jia Xianjun (2019) empirically analyzed the impact of two-way financial opening on the international competitiveness of China's financial service trade based on the quarterly data from 1998 to 2018 and using VaR and VECM models. The results show that financial opening can significantly improve the international competitiveness of China's financial industry in developing service trade by improving the export growth advantage of financial service trade, and can weaken and correct the impact of adverse factors such as trade disputes on financial service trade [5].

China's one belt, one road, is He Guanghui's 2019 largest business. The main challenges are the opportunities and challenges facing China's financial services industry. The world's top three economies (the United States, China, Japan) and other BRICs (Russia, Brazil, India and South Africa) are selected to use the market share index (MS). Trade competitiveness (TC) index and revealed comparative advantage (RCA) index compare and analyze the international competitiveness of financial service trade in these countries, and find that the income level of financial industry and financial FDI play a positive role in China's financial service trade competitiveness. [6] It mainly focuses on the empirical analysis of export-oriented factors.

2. Research Methods and Contents

2.1. Research Content

In the process of studying the influencing factors of China's international competitiveness of financial service trade, this paper mainly uses EvIEWS 7 The results show that the international influence of China's financial service trade is affected by many factors; Then, based on the diamond model and combined with the actual situation of our country, this paper mainly selects the production factors, demand factors, related and supporting industries for analysis, establishes the model, and then makes an empirical analysis; Finally, according to the analysis results, this paper puts forward corresponding countermeasures from different aspects to promote the development of China's financial service trade and enhance its international competitiveness.

This paper is divided into seven chapters:

Chapter 1: introduction. In this chapter, the research background, significance and literature of this paper are introduced in detail Overview, etc.

Chapter 2: the empirical analysis of the influencing factors of the overall export volume of financial service trade, and the elaboration of research methods and research contents, so that readers can better grasp the thinking logic of the article.

Chapter 3: mainly analyzes the international competitiveness of China's financial service trade. According to the previous literature research and relevant professional knowledge, six explanatory variables are selected to explain the correlation between each explanatory variable and the export volume of financial service trade, so as to clearly grasp the corresponding analysis context.

Chapter 4: this chapter makes an empirical analysis on the factors affecting the competitive strength of China's financial industry in the international market. The analysis results show that each factor has different degrees of impact on the competitiveness of China's financial services in the international market.

Chapter 6: the cointegration analysis of stationary series after first-order difference is carried out, and the corresponding error correction model is established.

Chapter 7: this chapter analyzes the factors and puts forward corresponding countermeasures according to the actual development of China, so as to promote the development of China's financial industry and increase its competitiveness in the international market.

2.2. Research Method

(1) Literature research method

Firstly, consult the relevant literature, learn and understand the scope of the current research field, analyze the methods and logic of the previous research content, summarize it, and look for innovation; At the same time, know the access to relevant data, ensure the accuracy and effectiveness of the data, and deal with the explosiveness and contingency of the data. Browse and analyze the major economic and financial websites and relevant economic and industrial databases, guotai'an database and wind financial terminal, find the internal relationship, facilitate the analysis and statistical research of this paper, and make a more intuitive and comprehensive empirical analysis according to the development trend of China's economy and relevant economic theories.

(2) Combination of qualitative analysis and quantitative analysis

This paper not only makes a qualitative analysis on the development status and existing problems of China's financial service trade, but also makes a quantitative analysis on the factors affecting China's financial service trade by using relevant indicators. Using time series data, we carry out correlation test and correction, heteroscedasticity and autocorrelation test and correction measures, unit root, cointegration, empirical analysis of error correction model and so on.

Finally, according to the results of multiple linear regression model, this paper analyzes the causes and puts forward targeted suggestions and measures, which makes the development of financial service trade have a certain theoretical data analysis support and promote the improvement of international competitiveness.

3. Variable Selection and Model Establishment

3.1. Selection of Variables

According to the relevant theories and literature on financial service industry, this paper puts forward the main factors affecting its international competitiveness, selects appropriate indicators and constructs the index system.

3.1.1. Selection of Variables

According to the previous research on the literature, it is found that the increase of China's total financial service trade mainly comes from the growth of export volume. If the total is selected to represent the international competitiveness of financial service trade, the research scope will be expanded, and the reliability of the model is low and the persuasion is small. Therefore, the export volume of financial service trade is taken as the explanatory variable to reflect the situation of China's international competitiveness. Relevant data can be obtained through the screening of wind database.

3.1.2. Explanatory Variable

Based on Porter's "Diamond Model", six indicators with easily available and complete data are selected to reflect factors such as production factors, demand factors, related and supporting industries respectively. This paper establishes a multiple linear regression model for empirical analysis.

1) Disposable income of urban residents

The income level of urban residents is closely related to their consumption ability. With China's economic development entering a high-quality stage, residents' consumption demand is no longer limited to basic food, clothing and warmth, but puts forward higher requirements for consumption quality. This indicates that the development of financial service industry will continue to face new and higher requirements.

2) Number of financial practitioners

The number of financial employees can represent the basic situation of the overall human resources of the financial industry. The financial service trade industry has high requirements for knowledge level and needs professional technicians with high professional quality. However, although China has been seeking the cultivation and development of innovative talents, compared with the international market, it is still the current situation of sufficient cheap labor force and lack of high-level cutting-edge talents. In developed countries, the reason why they have strong competitiveness in financial service trade is that a large number of high-quality talents integrate into the financial market every year and provide them with human intelligence support.

3) Amount of foreign direct investment in financial industry

On the one hand, the growth of foreign direct investment can improve the capital level of the financial industry; On the other hand, it is also to improve the management level and financial product innovation ability of China's financial service enterprises through learning from foreign-funded enterprises. It is particularly important to enhance the international competitiveness of China's financial service trade.

4) Efficiency of financial system

The efficiency of financial system can reflect the structure of enterprises, expressed in $m2 / GDP$. The main participants in the financial market are financial institutions. At present, China's financial industry is deepening, and the number of financial assets and financial institutions has achieved excessive growth. However, the indicators of relevant financial institutions show that China's financial institutions are inefficient in profitability, risk resistance and resource allocation.

5) Legal deposit rate

In the process of the development of China's financial service trade, the relevant government support policies and relevant macro-control measures have become important indicators to measure the competitive advantage. China has not only orderly opened to the outside world, but also actively fulfilled its WTO commitments. In this process, the government has also implemented relevant policies and means to promote the development of China's financial

service trade. However, although the Chinese government has made relevant efforts to stabilize the financial service trade market, there will still be some problems of insufficient supervision and support.

6) Exchange rate of RMB against US dollar

The exchange rate of RMB against US dollar can directly reflect the development degree of China's foreign-oriented economy and trade. On the one hand, RMB appreciation can enhance the added value of China's export products, which is conducive to stimulate Chinese enterprises to actively explore foreign markets, expand market share and optimize export structure; However, on the other hand, it may cause funds for speculation to flow into China's financial market, which is not conducive to the stability of the financial market.

3.2. Data Selection and Data Source

Because the research object is financial service trade, the development of China's financial service industry is still in the primary development stage, and the financial market is not very mature. The trade of financial services is difficult to keep up with the development speed of national GDP, so it is urgent to adjust the capital economic structure. At the same time, considering the comprehensiveness, comparability and representativeness of the data, the data from 2000 to 2017 are selected for empirical analysis. The starting year of the study is 2000, mainly because:

First, the data before 2000 are partially incomplete. If they are supplemented by exponential smoothing method, the statistical test is not significant because they are annual data and the amount of data is limited; Second, at that time, the development of China's financial service industry was low, there was no obvious comparative advantage, and it remained at a low level, which was of little significance.

The reasons why the end year is 2017 mainly include; First, due to the continuous adjustment of national laws and regulations and the continuous optimization of calculation methods, the previous models are difficult to meet the requirements of economic development; Second, due to the impact of the epidemic, there are extreme values, which need to screen out the data in order to make the research results representative and persuasive.

Table 1. Variable description

Category		Indicator name	Index meaning and description
International Competitiveness	Y	Export volume of financial services trade (ten million US dollars)	Reflect the strength of China's competitiveness
Demand elements	X1	Disposable income of urban residents (yuan)	Reflect personal needs
Demand status	X2	Number of financial practitioners (10000)	Reflect the development level of information technology
Opportunity elements	X3	Amount of foreign direct investment in the financial industry (10000 US dollars)	Reflect foreign investment
Enterprise structure competition	X4	Efficiency of financial system (%)	Reflect the openness of China's trade
government	X5	Statutory deposit reserve ratio (%)	Reflect government behavior
	X6	Exchange rate of RMB against US dollar (yuan)	Reflect government behavior

All data are from wind database and National Bureau of statistics. The time series data of explained variables and explanatory variables are shown in Table 2.

Table 2. Data of China's export volume of financial service trade and other relevant variables from 2000 to 2017

particular year	Y	X1	X2	X3	X4	X5	X6
2000	423.65	5425.1	127.85	31.88	16.10	6.00	8.28
2001	533.88	5854.0	135.17	501.77	16.00	6.50	8.28
2002	625.33	62800	167.98	702.82	16.30	6.00	8.28
2003	770.78	6859.6	169.8	764.39	16.39	7.00	8.28
2004	968.98	7702.8	176.52	826.34	16.70	7.50	8.28
2005	1219.23	8472.2	180.98	924.64	16.95	7.50	8.19
2006	1481.66	9421.6	187.07	1067.18	17.58	9.00	7.97
2007	1848.07	10493.0	334.52	733.22	18.13	13.50	7.60
2008	2333.32	11759.5	345.7	802.58	18.47	15.50	6.95
2009	2876.22	13785.8	358.37	849.22	18.63	16.50	6.83
2010	3501.39	15780.8	373.02	930.61	19.00	18.50	6.77
2011	4574.91	17174.7	386.08	1087.35	18.94	21.00	6.46
2012	5938.71	19109.4	400.82	1133.32	20.30	20.00	6.31
2013	7326.79	21809.8	410.64	1263.75	20.28	18.50	6.19
2014	8838.60	24564.7	423.75	1339.89	20.74	20.00	6.14
2015	10501.68	26955.1	435.62	1504.73	20.99	17.50	6.23
2016	12339.36	29381.0	446.39	1537.93	21.14	17.00	6.64
2017	14099.10	31790.3	457.73	1473.12	21.45	17.00	6.75

3.3. Stationary Test

3.3.1. Time Series Stationarity Test

Time series data are widely used in econometric research. Classical time series analysis and regression analysis have many assumptions, such as the stationarity and normality of the series. Under these assumptions, the t-test and F-test have confidence. However, more and more empirical evidence shows that most of the time series data involved in economic analysis are non-stationary. Nonstationary data is easy to cause "pseudo regression", which means that there is no dependent relationship between variables, but the regression results draw the wrong conclusion of correlation. The reason for this phenomenon is the non-stationarity of time series variables. [7] Therefore, it is necessary to analyze whether the time series data are stable in order to have a more accurate understanding of the export volume of financial service trade and related influencing factors. After the unit root, we can know whether the single integration order of the explained variable is consistent with that of each explanatory variable, and then we can do cointegration analysis to obtain the long-term equilibrium relationship.

Because the fitting effect between the explained variable and the explanatory variable is not good, the passing rate of a single t statistic is not high. Under the condition of 5% significance level, the passing rate of unit root test is not high, so the logarithmic transformation of each variable is carried out. The passing rate of single t statistic of the transformed explanatory variable and the explained variable is high, and the passing rate of unit root test is high under the 5% significance level. The explanatory variables and explained variables after taking logarithm are LNY, lnX1, lnX2, LnX3, lnX4, lnX5 and lnX6 respectively.

3.3.2. Unit Root Test for LNY

ADF test is performed on the explained variable lnyt, and Eviews is used for operation. After comparison, it is found that the effect of including intercept item type is better, and the output results are shown in Table 3:

Table 3. ADF test results of time series LNY

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.164605	0.9254
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

It can be seen from the test results that under the significance levels of 1%, 5% and 10%, the critical values of unit root test are -3.920350, -3.065585 and -2.673459 respectively. Obviously, the above T statistics are less than the critical value at the level of 5%, so H0 cannot be rejected, indicating that there is a unit root in the sequence and the time sequence is non-stationary.

In order to obtain the single integer order of the logarithmic series of exports of financial services trade, ADF test is carried out for the first-order difference series. After analysis, the case with intercept term and no trend term is selected. The test results after the first-order difference of sequence lnyt are shown in Table 4.

Table 4. ADF test results after first-order difference of sequence LNY

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.839683	0.0000
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

It can be seen from the above table that under the three significance levels of 1%, 5% and 10%, the critical values of unit root test are -3.920350, -3.065585 and -2.673459 respectively, and the value of t-test statistic is -6.839683, which is less than the corresponding critical value of 5%, thus rejecting the original hypothesis. Therefore, the export volume of financial service trade lnyt is first-order stable and belongs to the first-order single integer sequence, which is recorded as $\ln(y) \sim I(1)$.

3.3.3. The Explanatory Variables were Tested by Unit Root Test

ADF test was conducted for explanatory variables lnX1, lnX2, lnX3, lnX4, lnX5 and lnX6. The test results of several explanatory variables at the significance level of 5% are shown in Table 5.

Table 5. ADF test of explanatory variables

Explanatory variable	ADF test t statistic	critical value	Is it stable
lnX ₁	2.056824	-3.052169	Nonstationary
lnX ₂	-1.849569	-3.081002	Nonstationary
lnX ₃	-1.199235	-3.052169	Nonstationary
lnX ₄	-6.076484	-3.052169	Nonstationary
lnX ₅	-1.443642	-3.052169	Nonstationary
lnX ₆	-1.478097	-3.065585	Nonstationary

It can be seen from Table 5 that the critical value indicates that there are unit roots in the series of urban residents' disposable income, the number of employees in the financial industry, the amount of foreign direct investment in the financial industry, the efficiency of the financial system, the statutory deposit reserve ratio and the exchange rate of RMB against the US dollar at the confidence level of 5%, which is a non-stationary series, The first-order difference is made for these six explanatory variables, and the difference results are shown in Table 6.

Table 6. ADF test results after first-order difference of explanatory variables

Explanatory variable	ADF test t statistic	critical value	Is it stable
DlnX ₁	-18.37139	-3.065585	stable
DlnX ₂	-4.133195	-3.065585	stable
DlnX ₃	-3.327861	-3.065585	stable
DlnX ₄	-4.299401	-3.065585	stable
DlnX ₅	-3.753049	-3.065585	stable
DlnX ₆	-3.961431	-3.065585	stable

Dlnx1 is the disposable income of urban residents after the first-order difference, dlnx2 is the number of employees in the financial industry after the first-order difference, dlnx3 is the amount of foreign direct investment in the financial industry after the first-order difference, dlnx4 is the efficiency of the financial system after the first-order difference, dlnx5 is the legal deposit reserve ratio after the first-order difference, and dlnx6 is the exchange rate of RMB against the US dollar after the first-order difference. According to the statistical values of ADF test at the significance level of 5%, it can be seen from ADF test that dlnx1, dlnx2, dlnx3, dlnx4, dlnx5 and dlnx6 are first-order mono integer and belong to I (1) series, that is, these six explanatory variables are stable series after first-order difference, which can be cointegrated with the export volume of financial service trade.

3.4. Establishment of Econometric Model

3.4.1. Correlation Analysis

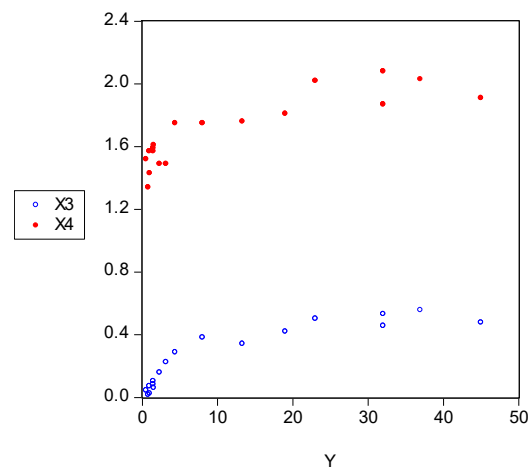
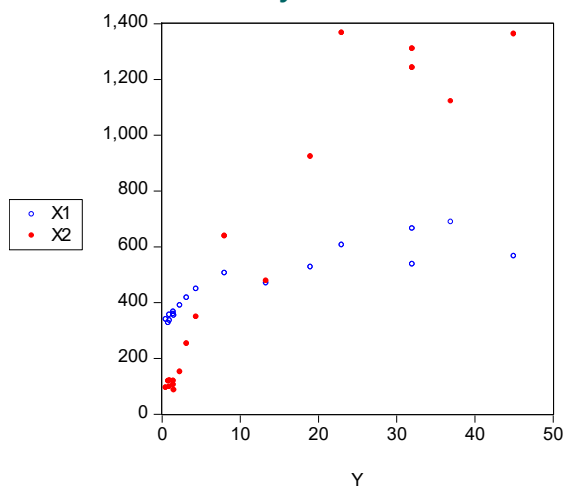


Figure 4. Scatter diagram of Y, X1 and X2 **Figure 5.** Scatter diagram of Y, X3 and X4

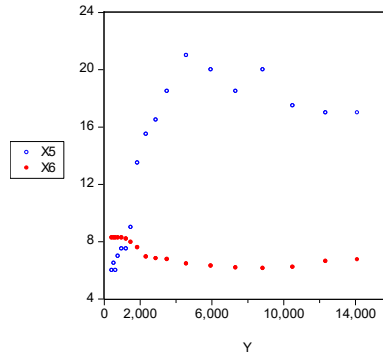


Figure 6. Scatter diagram of Y, X5 and x6

We select the data for correlation analysis and make the scatter diagram between each explanatory variable and the explained variable. From the scatter diagram, we can see that y has an obvious linear relationship with X1, X2, X3, x4, X5 and X6. Generally, it can be judged that y increases with the increase of X1 and X2; Y increases first and then decreases with X3 and X4; Y changes with X5, and on the whole, it shows a trend of rising sharply at first and then decreasing; Y and X6 tend to decrease with the increase of X6.

3.4.2. Establishment of Multiple Linear Regression Model

According to the correlation analysis, we selected y as the explanatory variable and x1, X2, X3, x4, X5 and X6 as the explanatory variables. We establish the following multiple linear regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \mu \tag{1}$$

Where $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and respectively represent the partial regression coefficients of each economic index, which are constant terms and random error terms.

Input the data into EViews and perform linear regression on all explanatory variables by using the ordinary least square method to obtain:

$$\begin{aligned}
 Y &= -3508.581 + 0.647371X_1 + 0.033419X_2 - 0.892345X_3 \\
 &\quad - 63.68678X_4 - 141.9249X_5 + 293.3503X_6 \\
 se &= (6793.031)(0.040347)(3.317263)(0.383514) \\
 &\quad (290.0978)(71.21966)(432.5979) \\
 t &= (-0.516497)(16.04513)(0.010074)(-2.326759) \\
 &\quad (-0.219536)(-1.992776)(0.678113) \\
 R^2 &= 0.997577 \quad \bar{R}^2 = 0.996256 \quad F = 754.9203 \quad DW = 1.781924
 \end{aligned}$$

According to the regression results, we can get that the decisive coefficient in the model is very high, indicating that the model fits the samples well, and the statistical value of F test is obviously significant, indicating that the regression equation is significant, that is, the joint determination of their variables has a significant impact on the "export volume of financial service trade". However, for some factors that are inconsistent with the actual economic significance, such as the amount of foreign direct investment in the financial industry X3, the efficiency of the financial system X4 and the exchange rate of RMB against the US dollar X6, the coefficient symbol in front is opposite to the expectation, and the p value of some variables is obviously less than 0.05, and the t-test is obviously not significant.

After the preliminary establishment of the multiple linear regression model and the preliminary analysis and understanding of the relationship between the explained variables and the explanatory variables, the regression results of the model are inconsistent with the actual economic significance, and the t-test of individual explanatory variables is not significant, which requires us to use EViews 7.2 further optimize the model. Next, it mainly tests, analyzes and modifies the multicollinearity, heteroscedasticity and autocorrelation of the model, and then comes to a more scientific and real conclusion that is more in line with the economic development trend.

4. Multicollinearity

4.1. Test of Multicollinearity

4.1.1. Simple Correlation Coefficient Test

According to the above results, after the OLS method is used for regression, the determinate coefficient is, and the modified determinate coefficient is, indicating that the fitting effect of the model is good, and the interpretation degree of the model to the international competitiveness of financial service trade is as high as 99.6%. The F statistic is 754.9203, indicating that the regression equation is significant as a whole at the significance level of 5%. However, the t-test is not significant, and the regression coefficient is not consistent with the expectation, so there may be multicollinearity.

Table 7. Correlation coefficient matrix of explanatory variables

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
X ₁	1.000000	0.904828	0.880149	0.971459	0.787672	-0.842466
X ₂	0.904828	1.000000	0.790713	0.961441	0.949584	-0.952408
X ₃	0.880149	0.790713	1.000000	0.871694	0.688701	-0.733090
X ₄	0.971459	0.961441	0.871694	1.000000	0.880865	-0.920712
X ₅	0.787672	0.949584	0.688701	0.880865	1.000000	-0.974425
X ₆	-0.842466	-0.952408	-0.733090	-0.920712	-0.974425	1.000000

It can be seen from the correlation coefficient matrix that the correlation coefficient between explanatory variables is high, which proves that there is a certain multicollinearity between explanatory variables.

4.1.2. Variance Expansion Factor Method

In order to further study whether the model has multicollinearity, it is further tested.

Table 8. Variance expansion factor

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	46145273	11517.82	NA
X1	0.001628	121.8319	28.62841
X2	11.00423	296.9443	38.82367
X3	0.147083	39.63919	5.038683
X4	84156.75	7311.424	71.96873
X5	5072.240	271.5803	37.98959
X6	187140.9	2485.921	33.34960

Experience shows that if the variance expansion factor, it usually indicates that there is a serious multicollinearity between this explanatory variable and other explanatory variables. The variance expansion factors of x1, X2, x4, X5 and X6 here are much greater than 10, indicating that there is serious multicollinearity.

4.2. Test of Multicollinearity

4.2.1. Variable Transformation Method

Logarithmic transformation of each variable, linear regression of all explanatory variables by ordinary least square method, estimation of model parameters, and the regression results are as follows:

$$\ln \hat{Y}_t = -46.76210 - 2.877588 \ln X_{1t} + 2.244939 \ln X_{2t} + 0.973702 \ln X_{3t} - 0.797686 \ln X_{4t} - 0.407949 \ln X_{5t} + 8.521140 \ln X_{6t} \tag{2}$$

$$R^2 = 0.969678 \quad F = 58.62856 \quad DW = 3.032693$$

The model has a high decisive coefficient and significant F-statistic test, but there are still problems that the t-test of explanatory variables does not pass and the symbols of explanatory variables are inconsistent with expectations, so it is necessary to use the stepwise regression method to correct the multicollinearity.

4.2.2. Stepwise Regression

The correction effect of multicollinearity using variable transformation method is not good, so stepwise regression method is used to correct it, and the explanatory variables causing multicollinearity are screened and eliminated through stepwise regression. The simple regression of the explained variable LNY to each considered explanatory variable is made respectively, and the regression results are shown in Table 9.

Table 9. Regression results of Y and each explanatory variable

variable	Parameter estimate	T statistic	R ²
lnY and lnX ₁	0.122546	30.51657	0.983109
lnY and lnX ₂	0.150714	13.60415	0.920427
lnY and lnX ₃	0.058723	3.879373	0.484694
lnY and lnX ₄	0.698497	23.76144	0.972443
lnY and lnX ₅	0.139993	9.636490	0.853025
lnY and lnX ₆	-0.558170	-9.381149	0.846163

The greater R2, the greater the contribution of the explanatory variable to the explained variable. From the regression results, it can be seen that the explanatory variables contributing to the explained variables from large to small are respectively, so it should be introduced from the variable X4 with the largest contribution. Based on the regression model, add other explanatory variables according to the order of the decisive coefficient from large to small, and the step-by-step regression results can be obtained, as shown in table 10 below.

Table 10. Stepwise regression results

variable	lnX ₁	lnX ₂	lnX ₃	lnX ₄	lnX ₅	lnX ₆	Correction R ²
LnX ₄	0.1063	--	--	0.0933	--	--	0.9733
	(3.1383)	--	--	(0.4806)	--	--	
LnX ₂	0.0954	0.0366	--	--	--	--	0.8993
	(9.8772)	(2.9820)	--	--	--	--	
LnX ₂ lnX ₅	0.0967	0.0237	--	--	0.0112	--	0.9296
	(9.6133)	(1.0002)	--	--	(0.6373)	--	
LnX ₂ lnX ₆	0.0972	0.0412	--	--	--	0.0278	0.8796
	(9.3706)	(2.7627)	--	--	--	(0.5709)	
LnX ₂ lnX ₃	0.0910	0.0324	0.0079	--	--	--	0.9842
	(12.5485)	(3.5456)	(3.6542)	--	--	--	

The numbers in the table are the parameter estimated value and the corresponding t value of the variable, and the numbers in brackets are the T value. After adding the explanatory variable lnX₄, observe the goodness of fit. It is found that the modified decisive coefficient is 0.9733, and the goodness of fit changes little. The F test also passes. Continue to carry out the t test on the explanatory variable. At this time, lnX₄ fails the t test, so the explanatory variable is excluded. After the introduction of lnX₂, the goodness of fit decreased after correction, but the t-test passed, so the explanatory variable was retained. Then, when lnX₅ is introduced according to the contribution of the explanatory variable to the explained variable, the change in the goodness of fit after correction is small, and the t-test is not significant. Therefore, when lnX₆ is introduced, it is found that lnX₂, which was significant in the original t-test, is no longer significant, and the t-test of lnX₆ itself is not significant. Therefore, when the explanatory variable is removed and LnX₃ is continuously introduced, at this time, the goodness of fit after correction is improved by 98.42%, and the t-test of lnX₁, lnX₂ and LnX₃ is significantly non-zero, so the explanatory variable is retained.

The regression results after correction of multicollinearity are as follows:

$$\ln \hat{Y}_t = -10.24038 + 0.091023 \ln X_{1t} + 0.032424 \ln X_{2t} + 0.007921 \ln X_{3t}$$

$$se = (0.203167)(0.007253)(0.114962)(0.002167) \tag{3}$$

$$t = (-50.40382) (12.54853) (3.545603) (3.654205)$$

$$R^2 = 0.994520 \quad \bar{R}^2 = 0.984201 \quad F = 3582.814 \quad DW = 1.232017$$

From the above regression equation, it can be seen that the modified decisive coefficient is 0.994520, indicating that the degree of fitting is high and the joint significance of F-statistic test parameters is high. It is concluded that the disposable income of urban residents, the number of employees in the financial industry and the amount of foreign direct investment in the financial industry are the main factors affecting the international competitiveness of China's financial service trade.

4.3. Heteroscedasticity Test

4.3.1. Graphical Test Method

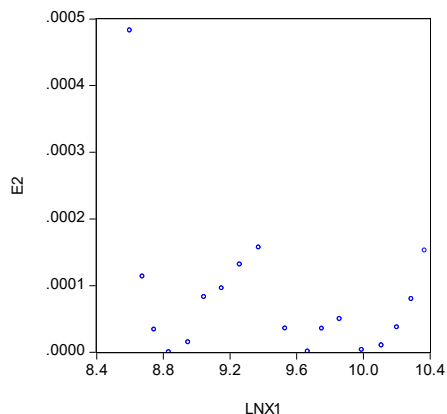


Figure 7. e_i^2 and $\ln x_1$ scatter diagram of pair

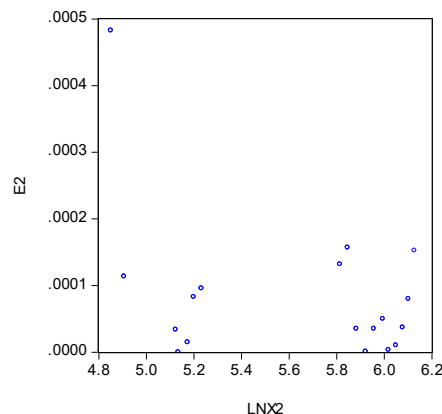


Figure 8. e_i^2 and $\ln x_2$ scatter diagram of pair

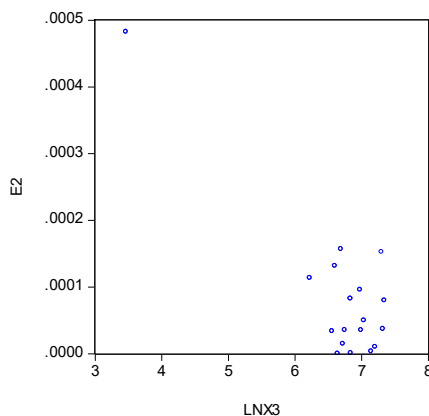


Figure 9. e_i^2 and $\ln x_3$ scatter diagram of pair

4.3.2. White Test

White test is widely used to test heteroscedasticity. The advantage of white test can not only test the existence of heteroscedasticity, but also judge which variable causes Heteroscedasticity in the case of multiple explanatory variables. The basic idea of white test is: if there is heteroscedasticity, its variance is related to the explanatory variable. Analyze whether there is some form of connection with the explanatory variable to judge heteroscedasticity. However, since it is generally unknown, the residual square estimated by OLS can be used as its estimated value as an auxiliary regression composed of constant term, explanatory variable, square of explanatory variable and its cross product, that is:

$$e_t^2 = \alpha_0 + \alpha_1 \ln X_{1t} + \alpha_2 \ln X_{2t} + \alpha_3 \ln X_{3t} + \alpha_4 \ln X_{1t}^2 + \alpha_5 \ln X_{2t}^2 + \alpha_6 \ln X_{3t}^2 + \alpha_7 \ln X_{1t} \ln X_{2t} + \alpha_8 \ln X_{1t} \ln X_{3t} + \alpha_9 \ln X_{2t} \ln X_{3t} + v_t$$

It is estimated that the white test results can be obtained, as shown in Table 11:

Table 11. White test results

F-statistic	0.991836	Prob. F(9,8)	0.5101
Obs*R-squared	9.492641	Prob. Chi-Square(9)	0.3931
Scaled explained SS	5.750840	Prob. Chi-Square(9)	0.7646

As can be seen from the above table, the white test shows that in case, the critical value is obtained by looking up the distribution table. Because the original hypothesis is rejected and the alternative hypothesis is rejected, it shows that there is no Heteroscedasticity in the random error in the model, so there is no need to correct the heteroscedasticity.

5. Autocorrelation

5.1. Autocorrelation Test

5.1.1. DW Test Method

DW test method is a common method to test autocorrelation and a relatively simple method, but it also has some limitations. DW test method is only suitable for testing first-order autocorrelation and cannot be applied to high-order autocorrelation test. Here, the low-order step test is first used, so DW test method is first used for autocorrelation test. In the established model, it is consistent that the explanatory variable x is non random; The random error term is in the form of first-order autoregression; The explanatory variables of the linear model do not include the lagged explanatory variables; The intercept term is not zero, and the data sequence has no missing term, which are the preconditions of DW test method. Construct original assumptions:

The DW statistic value obtained by the ordinary least square method is 1.232017. For the model with sample size of $n = 18$ and explanatory variable $k = 3$, it can be seen from the DW statistical table that if there is no first-order autocorrelation in the model, it is necessary to continue the test.

5.1.2. LM Test

Breusch Godfrey LM sequence correlation test combines the two equations of autoregressive model and autocorrelation model to effectively solve the situation that DW gives uncertain results.

(1) Construct original assumptions:

(2) OLS is used to estimate the model after stepwise regression (2), and the residual is obtained

(3) The explanatory variable x and lag residuals are used as auxiliary regression,

$$e_t = \alpha_1 + \alpha_2 X_{2t} + \alpha_3 X_{3t} + \hat{\rho}_1 e_{t-1} + \hat{\rho}_2 e_{t-1} + \hat{\rho}_3 e_{t-1} + v_t \tag{4}$$

LM test results obtained in Eviews are shown in Table 12 and Table 13:

Table 12. $\rho = 2$ LM inspection results

F-statistic	4.581777	Prob. F(2,12)	0.0332
Obs*R-squared	7.793775	Prob. Chi-Square(2)	0.0203

Table 13. $\rho = 3$ LM inspection results

F-statistic	2.801252	Prob. F(3,11)	0.0895
Obs*R-squared	7.795790	Prob. Chi-Square(3)	0.0504

It can be seen in Table 12 that if the p value is less than 0.05, the original hypothesis H_0 is rejected, the alternative hypothesis is accepted, and there is second-order autocorrelation. It can be seen from table 13 that if the p value is greater than 0.05, the original hypothesis will

not be rejected. At this time, there is no autocorrelation problem, so it is considered that there is a second-order autocorrelation problem in the model.

5.2. Autocorrelation Remedy

The generalized difference method is used to remedy the autocorrelation problem in the model. In order to estimate the autocorrelation coefficient, the residual sequence is used for autoregression with one lag period, and the regression equation is as follows:

$$\hat{e}_t = 0.3840e_{t-1}$$

$$\ln Y_t - 0.3840 \ln Y_{t-1} = \beta_0(1 - 0.3840) + \beta_1(\ln X_{1t} - 0.3840 \ln X_{1t-1}) + \beta_2(\ln X_{2t} - 0.3840 \ln X_{2t-1}) + \beta_3(\ln X_{3t} - 0.3840 \ln X_{3t-1}) + v_t \tag{5}$$

Operate in EViews to obtain the generalized differential regression results, as shown in table 14:

Table 14. Results of generalized differential regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.134590	0.255274	-24.03136	0.0000
LN1-0.3840*LN1(-1)	0.012196	-0.003431	-3.553782	0.0295
LN2-0.3840*LN2(-1)	0.037995	0.008032	4.730484	0.0437
LN3-0.3840*LN3(-1)	1.870115	0.086676	21.57588	0.0000
R-squared	0.996727	Mean dependent var		4.985015
Adjusted R-squared	0.995972	S.D. dependent var		0.662352
S.E. of regression	0.042040	Akaike info criterion		-3.298084
Sum squared resid	0.022975	Schwarz criterion		-3.102034
Log likelihood	32.03372	Hannan-Quinn criter.		-3.278597
F-statistic	1319.579	Durbin-Watson stat		1.810265
Prob (F-statistic)	0.000000			

$$\ln \hat{Y}_t^* = -6.134590 + 0.012196 \ln X_{1t}^* + 0.037995 \ln X_{2t}^* + 1.870115 \ln X_{3t}^* \tag{6}$$

$$Se = (0.255274)(-0.003431)(0.008032)(0.086676)$$

$$t = (-24.03136)(-3.553782)(4.730484)(21.57588)$$

$$R^2 = 0.996727 \quad F = 1319.579 \quad DW = 1.810265$$

The following regression method can be obtained from the above table:

Of which:

$$\ln Y_t^* = \ln Y_t + 0.3840 \ln Y_{t-1}, \ln X_{1t}^* = \ln X_{1t} + 0.3840 \ln X_{1t-1},$$

$$\ln X_{2t}^* = \ln X_{2t} + 0.3840 \ln X_{2t-1}, \ln X_{3t}^* = \ln X_{3t} + 0.3840 \ln X_{3t-1} \tag{7}$$

The difference method is used in the process of generalized difference correction, so there are 17 existing data and 3 explanatory variables. Under the 5% significance level, after looking up the table, it is obtained that DW = 1.810265 in the model, indicating that under the 5%

significance level, there is no autocorrelation in the generalized difference model, and the decisive coefficient, t statistics and F statistics have reached a reasonable level.

$$\beta_0 = \frac{-6.134590}{1-0.3840} = 9.95875$$

Thus, the foreign exchange reserve model of long-term equilibrium after final optimization can be obtained as follows:

$$\ln \hat{Y}_t = 0.95875 + 0.012196 \ln X_{1t} + 0.037995 \ln X_{2t} + 1.870115 \ln X_{3t} \quad (8)$$

For a new regression model, the following tests are carried out:

1) Test of economic significance of the model:

In the optimized long-term balanced export volume model of financial service trade, it can be seen that when the number of employees in the financial industry and the amount of foreign direct investment in the financial industry remain unchanged, the export volume of financial service trade increases by an average of 0.012196% for every 1% increase in the disposable income of urban residents, While the disposable income of urban residents and the amount of foreign direct investment in the financial industry remain unchanged, when the number of employees in the financial industry increases by 1%, the export volume of China's financial service trade will increase by 0.037995% on average. On the premise that the disposable income of urban residents and the number of employees in the financial industry remain unchanged, the amount of foreign direct investment in the financial industry increases by 1%, The export volume of financial services trade increased by 1.870115% on average. The economic significance of the test results is in line with the development law of the export volume of financial service trade. The symbols of all variables are consistent with a priori expectations [8]. Therefore, it can be concluded that the disposable income of urban residents, the number of employees in the financial industry and the amount of foreign investment directly utilized by the financial industry are the main factors affecting the international competitiveness of China's financial service trade.

2) T-test

When the significance level is 5%, the absolute value of T statistics of each regression parameter is greater than 2.201, so we can know that the regression parameters are significant.

3) F test

In the regression results, the F value is 1319.579, with high significance, indicating that the overall fitting effect between the three explanatory variables is very good.

4) Test of goodness of fit

From the regression results, it can be seen that the revised decision coefficient is 0.995972, which further shows that the goodness of fit of the model is very high, indicating that the disposable income of urban residents, the number of employees in the financial industry and the amount of foreign investment directly utilized by the financial industry jointly explain 99.5972% of the export volume of financial service trade.

6. Error Correction Model

6.1. Cointegration Test

There are two methods to test cointegration. One is the cointegration test based on regression residuals, which is also called the cointegration test of single equation; The other is johhansen cointegration test based on complete information of regression coefficients. For the cointegration test of multiple variables, the Johansen cointegration test based on the complete information of regression coefficients may have the problem of insufficient sample size. Therefore, here, we use the eg two-step test of a single equation.

6.1.1. Test of Single Square Equation

The cointegration test analyzes the cointegration relationship between the explained variable and a single explanatory variable. First, make the regression between the explained variable and the explanatory variable. The OLS regression method is used to estimate the regression model as follows:

$$\ln \hat{Y}_t = 1.977641 + 0.877792 \ln X_{1t} + e_t$$

$$\ln \hat{Y}_t = -4.050998 + 10.80878 \ln X_{2t} + e_t$$

$$\ln \hat{Y}_t = -7.440249 - 1.533690 \ln X_{3t} + e_t$$

Make the residual diagram of each regression model. From the fitted residual diagram, it can be seen that the residual sequence of urban residents' income, the number of employees in the financial industry and the amount of direct foreign investment in the financial industry is stable.

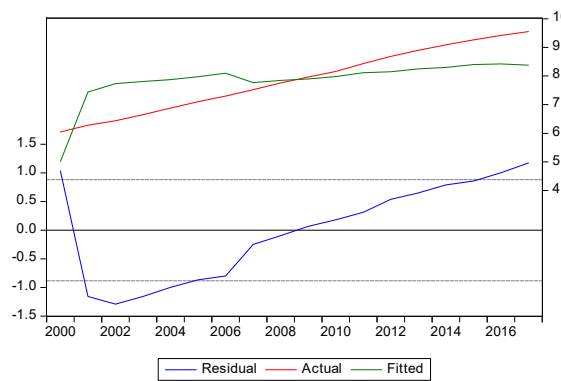


Figure 10. Sequence $\ln X_1$ residual fitting diagram

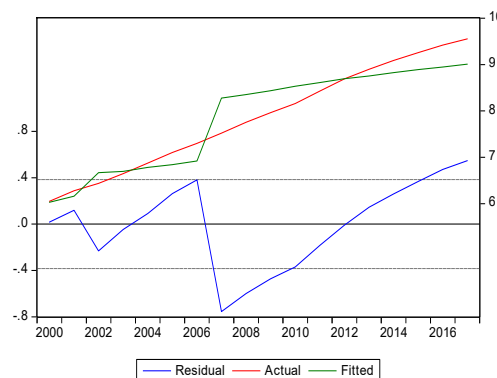


Figure 11. Sequence $\ln X_2$ residual fitting diagram

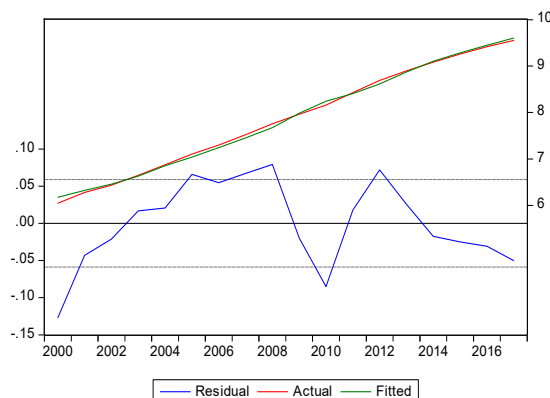


Figure 12. Sequence lnX₃ residual fitting diagram

It can be seen from the fitted residual diagram that although the explanatory variables lnX₁, lnX₂ and lnX₃ tend to be stable, the deviation between the fitted value and the actual value is also large, so there is no long-term equilibrium. In order to more accurately obtain the stability of each residual sequence, the unit root test, i.e., ADF test, is carried out for each residual. At the significant level of 5%, the cointegration relationship is shown in Table 15:

Table 15. Analysis of cointegration relationship between variables

variable	Statistics of residual ADF	critical value	Is there a cointegration relationship
lnY _t and lnX ₁	-17.50893	-3.065585	have
lnY _t and lnX ₂	-4.205499	-3.065585	have
lnY _t and lnX ₃	-3.786027	-3.081002	have

It can be seen from the above table that there is a long-term equilibrium relationship between the export volume of financial service trade lnY_t and the disposable income of urban residents lnX₁, the number of employees in the financial industry lnX₂ and the direct utilization of foreign investment in the financial industry lnX₃. Therefore, we can get the long-term equilibrium equation between the export volume of financial service trade and the efficiency of financial system and the openness of financial service trade.

$$\ln Y_t = -10.24038 + 0.091023 \ln X_1 + 0.032424 \ln X_2 + 0.007921 \ln X_3 \quad (9)$$

se= (2.03167) (0.007253) (0.114962) (0.002167)
 t= (-50.40382) (12.54853) (3.545603) (3.654205)
 R₂=0.994520 F=3582.814 DW=1.232017

6.1.2. Unit Root Test of Population Residuals

Table 16. Unit root test results of overall residual series

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.703001	0.0172
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

The value of T is greater than the critical value at the confidence level of 1%, 5% and 10%, so the original hypothesis is rejected. It can be concluded that the overall residual series is a

stationary series. Combined with the cointegration test between the explained variable and a single explanatory variable, it shows that there is a long-term equilibrium relationship between the export of financial service trade and the disposable income of urban residents, the number of employees in the financial industry and the amount of foreign direct investment in the financial industry.

6.2. Error Correction Model

Different from the long-term cointegration equation, the error correction model can not only reflect the long-term equilibrium relationship of different time series, but also reflect the correction mechanism from short-term deviation to long-term equilibrium. By establishing the error correction model of the export volume of financial service trade, we can clearly find the impact of various factors on the international competitiveness of financial service trade in the short and long term, and introduce the residuals in the optimized regression model of the export volume of financial service trade with long-term equilibrium as explanatory variables, Represents the degree of "error" at each time point in the process of ECM obtaining long-term equilibrium [9], and then reestablishes a regression model in the form of first-order difference for each explanatory variable and explained variable in the optimized long-term relationship model to test the short-term dynamic relationship item by item, and the insignificant explanatory variables are gradually eliminated until the optimal model is reached.

In EViews, lnyt is regressed with intercept terms dlrx1, lnx2, LnX3 and ECM (- 1), and the insignificant lag period is gradually eliminated. The model regression results are shown in Table 17:

Table 17. Error correction model results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.114135	0.053009	2.153132	0.0543
D(LNX1)	0.375799	0.084973	4.422568	0.0327
D(LNX2)	0.333710	0.088421	3.774065	0.0273
D(LNX3)	0.400843	0.093458	4.289014	0.0357
ECM	-0.076007	0.038888	-3.094290	0.0390
R-squared	0.320084	Mean dependent var		0.204606
Adjusted R-squared	0.072842	S.D. dependent var		0.036601
S.E. of regression	0.035242	Akaike info criterion		-3.602830
Sum squared resid	0.013662	Schwarz criterion		-3.361396
Log likelihood	33.82264	Hannan-Quinn criter.		-3.590467
F-statistic	1.294616	Durbin-Watson stat		1.521118
Prob(F-statistic)	0.330740			

The relationship can be obtained as follows:

$$\Delta \ln \hat{Y}_t = 0.114135 + 0.375799\Delta \ln X_{1t} + 0.333710\Delta \ln X_{2t} + 0.400843\Delta \ln X_{3t} - 0.076007ECM(-1)$$

The short-term change of China's export volume of financial services trade can be divided into two parts: one is the impact of short-term fluctuations of various explanatory variables, and the other is the impact of deviation from long-term equilibrium. In the above error correction model, the t-test of each parameter estimator is significant. Therefore, the export volume of financial service trade depends not only on the disposable income of urban residents, the

number of employees in the financial industry and the amount of foreign investment directly utilized by the financial industry, but also on the deviation of the export volume of financial service trade in the previous period from the equilibrium level. The coefficient of error term estimation -0.076007 reflects the correction of the error deviation, When the short-term fluctuation deviates from the long-term equilibrium, the non-equilibrium state will be pulled back to the equilibrium state with the adjustment strength of -0.076007 .

7. Conclusions and Suggestions

7.1. Conclusion

Based on the above econometric empirical analysis, it is clear that the important factors affecting the export volume of financial service trade include the disposable income of urban residents, the number of employees in the financial industry, and the amount of foreign investment directly utilized by the financial industry:

First, the disposable income of urban residents is an important factor affecting the export volume of China's financial service trade, and there is a positive change relationship with the export volume of financial service trade. The increase of China's urban residents' disposable income will increase the export volume of financial service trade in a certain proportion, and then improve the international competitiveness of China's financial service trade.

Second, the number of employees in the financial industry is also another factor affecting the export volume of China's financial service trade. The increase of knowledge reserves and talents in the financial industry provides intellectual support for the effective development of financial service trade and promotes the deepening development of the field of financial services. [10] Therefore, in order to promote the improvement of the international competitiveness of China's financial service trade, the state actively implements the talent introduction strategy, adopts relevant policies to encourage the development of innovative talents, and effectively increases the endogenous driving force for the development of financial service trade.

Third, compared with the first two factors, the amount of direct utilization of foreign capital in the financial industry has a greater impact. This fully shows that to promote the optimal development of financial service trade, we should not only improve the ability to use our own capital, but also make active and rational use of foreign capital, so as to realize the healthy and stable development of financial service field.

Finally, although the other three variables are excluded in this paper: the efficiency of the financial system, the statutory deposit reserve ratio and the exchange rate of RMB against the US dollar, after checking the relevant literature and data, these three factors also have an important impact on the export volume of financial service trade. [11] It is only because it does not conform to the establishment of multiple linear regression model and error correction model, but these are still relevant factors affecting the international competitiveness of China's financial service trade, which cannot be ignored in the analysis of the international competitiveness of financial service trade.

7.2. Policy Suggestion

7.2.1. Promote Financial Innovation

Financial innovation is the fundamental thrust to enhance the competitiveness of financial service trade and promote the high-quality development of financial services. First, we should promote the integration of Finance and technology. Take advantage of financial technology to build a characteristic financial industry, provide differentiated high value-added financial service products and improve service means. [12] Second, increase human capital investment. According to the new trend of the development of financial service industry, colleges and

universities innovate the training mode of financial talents, enterprises and institutions constantly improve the human resource management system, and use various ways to strengthen the training of financial service practitioners. It is an important way to improve the innovation ability of R & D and management means of financial service industry.

7.2.2. Increase Market Demand for Financial Services

The demand of enterprises and individuals will drive the export growth of financial service trade. Therefore, we should increase the proportion of demand for financial services and expand the financial service market. First, we should vigorously develop Inclusive Finance, support the development of small, medium-sized and micro enterprises, and increase scientific research support for small, medium-sized and micro enterprises. Promote the sustainable and balanced development of the financial industry. Second, we should continue to help improve residents' consumption environment and consumption structure, guide diversified scientific consumption behavior, constantly tap domestic demand and expand the financial service market. [13] By expanding demand, we can promote financial institutions to continuously innovate high-quality products and services, so as to improve the international market competitiveness of China's financial service industry.

7.2.3. Steadily Promote Financial Services

The continuous opening of the financial service market has provided more international market cooperation and development opportunities for China's financial service enterprises. First, relax the access threshold of the financial industry, strengthen the introduction of foreign capital, expand the market candidates, business scope and service objects of foreign-funded financial institutions, and increase the vitality and competitiveness of the financial service market. Improve the internationalization level of China's financial market. Second, seize the opportunity. One belt, one road, and another one, will be strengthened to enhance our economic and social exchanges and cooperation with other countries. Improve the international competitiveness of RMB. Third, continuously improve the financial supervision system, establish a scientific network information supervision system and improve the internal core competitiveness according to the national conditions and the development trend of the financial industry. Rabia Khatun, Jagadish Prasad Bist. Financial development, openness in financial services trade and economic growth [J]. International Trade, Politics and Development, 2019, 3 (2).

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