The Impact of Financial Development on International Trade in China

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Abstract. With the deep integration of the world economy resulting from globalization, finance and trade interact with each other and jointly affect the economic development of a country or region. However, there are few studies on the impact of financial development on international trade in China. This review investigates the effects of different aspects of financial development on international trade in China through three parts. Also, it analyzes the relevant data on financial growth over the past decade. After reviewing previous research, the author also puts forward some discussions based on the unique national conditions of China and an empirical analysis of time series data. It is found that moderate expansion of financial scale, the upgrading of financial structure, and the improvement of financial efficiency are beneficial to the development of China's international trade. In addition, the government should minimize its intervention in financial growth.

Keywords: China · Financial development · International trade

1 Introduction

International trade is an important driving force for the economic growth of a country or region. Finance is the core of the modern economy, and international trade cannot develop without financial support. With the improvement of financial globalization and trade internationalization, the relationship between financial growth and international trade development is becoming closer and closer [1]. However, most of the research of scholars from different countries focuses on western countries, and there are few pieces of research on China. This paper reviews the previous relevant studies of scholars worldwide on the impact of financial development on international trade from three aspects: financial scale, financial structure, and financial efficiency. Combining with pertinent data of the past decade, this paper also studies the impact of financial development on international trade in China. In addition, the author conducts an empirical analysis of the relevant time series data in the past 30 years to study the impact of the financial development scale on international trade in China. The author also puts forward some discussions on government intervention in the development of finance and international trade by combining China's unique national conditions. These analyses and discussions will help to better formulate the policy of financial market reform and promote financial development to play a positive role in international trade.

2 Theoretical Analysis

2.1 Financial Scale

Financial development provides a safe and reliable financial market for international trade. Financial capital is an essential element in international trade, which requires capital investment and turnover in many aspects. However, in the case of insufficient funds, financial institutions, especially banks, will only provide financial support to particular industries or enterprises. In contrast, the development of other industries or enterprises will only be hindered by the lack of funds [2]. Through a series of financial activities, the idle funds in society can be effectively gathered and applied to various industries and functional departments to provide a strong fund guarantee for the effective operation of economic organizations. Enterprises can use various financing tools to increase the scale of investment and working capital, achieve industry mergers and scale expansion, and achieve economies of scale in a relatively short period [3]. Economies of scale can reduce the production cost of foreign trade enterprises, enhance the profit space, and improve international competitiveness with price advantages. In addition, enterprises can have more idle funds to invest in technology research, optimize the structure of foreign trade, and improve the international competitiveness of products (Table 1).

For the scale of financial development, scholars of various countries usually adopt Goldsmith's financial-related index. Here the total amount of financial assets is approximated by the sum of the deposit balance and loan balance of the financial institution. The formula is the finance-related index (FIR) = (the balance of deposits + the balance of loans)/GDP. Plugging the relevant data of China in the past decade into this formula

Table 1. Finance-related index (original).

Year	The Sum of the balance (100 million yuan)	GDP (100 million yuan)	FIR
2012	1547464.41	537329	2.87991977
2013	1762808.32	588141.2	2.997253585
2014	1955414.65	644380.2	3.034566627
2015	2296561.77	685571.2	3.349851584
2016	2571903.89	742694.1	3.462938362
2017	2842365.21	830945.7	3.42063893
2018	3138192.73	915243.5	3.428806356
2019	3459908.53	983751.2	3.517056477
2020	3853172.95	1005451.3	3.832282031
2021	4249403.21	1133239.8	3.749782888

Table 2. Securitization and insurance penetration (original).

Year	GPCZ (100 million yuan)	Premium income (100 million yuan)	GDP (100 million yuan)	Securitization	Insurance penetration
2012	4134.38	15488	537329	0.007694318	0.028824054
2013	2802.76	17222	588141.2	0.004765454	0.029282084
2014	8498	20235	644380.2	0.013187866	0.031402268
2015	16362	24283	685571.2	0.02386623	0.035420099
2016	20297	30904.15	742694.1	0.027328883	0.041610873
2017	15536	36581	830945.7	0.018696769	0.044023334
2018	11378	38017	915243.5	0.012431664	0.04153758
2019	12539	42644.8	983751.2	0.012746109	0.043349172
2020	14222	45257.3	1005451.3	0.014144892	0.045011926
2021	15401	44900.17	1133239.8	0.013590239	0.039621067

shows that the scale of China's financial development is constantly expanding from the general trend.

2.2 Financial Structure

Generally, the financial structure can be divided into the bank-led financial system and market-led financial system. In the modern economic system, the banking system plays the role of payment and clearing in the trade of all countries in the world, notably impacting trade activities. The payment and clearing services provided by commercial banks can be accepted by all countries, which makes the complex trade settlement system run with high efficiency and provides the driving force for developing national trade [4]. State-supported export credit can also accelerate the capital turnover of domestic export enterprises and reduce the risk of international trade. In the market-led financial system, the capital market is relatively developed. Effective capital allocation through the financial market can make limited capital invest in the most excellent enterprises, and provide long-term effective incentive mechanisms and risk-sharing mechanisms for the development of foreign trade enterprises. This will promote technological progress and the upgrading of international trade [5]. Moreover, insurance institutions and companies also provide foreign trade enterprises with ways to avoid and diversify risks. Therefore, the two financial systems have their advantages, so the balanced development of each financial market and the optimization of the financial structure can better serve the development of international trade (Table 2).

To measure the structure of China's financial development more comprehensively, this paper calculates the level of securitization and the depth of insurance, respectively, by comparing the amount of equity raised and premium income with the GDP. Plugging data from the National Bureau of Statistics into this formula shows that China's financial structure has generally optimized over the past decade.

Table 3. Loan deposit ratio (original).

Year	Deposits of financial institutions (100 million yuan)	Loans of financial institutions (100 million yuan)	FE
2012	917554.77	629909.64	0.686509035
2013	1043846.86	718961.46	0.688761434
2014	1138644.64	816770.01	0.717317749
2015	1357021.61	939540.16	0.692354604
2016	1505863.83	1066040.06	0.707925935
2017	1641044.22	1201320.99	0.73204669
2018	1775225.73	1362967	0.767771094
2019	1928785.33	1531123.2	0.793827688
2020	2125720.88	1727452.07	0.812642942
2021	2322500.4	1926902.81	0.829667375

2.3 Financial Efficiency

Financial efficiency refers to the input and output of the financial sector. Specifically, it can be divided into macro-financial efficiency and micro-financial efficiency [6]. Macro-financial efficiency refers to the Pareto optimal allocation of all available financial resources in society. The allocation efficiency of financial resources is used to measure the effectiveness of financial resources flowing to productive uses. International trade will be improved if financial resources are preferentially allocated to productive foreign trade firms or sectors. Micro-financial efficiency refers to the operating efficiency of financial institutions. If a certain amount of financial resources can be effectively used to invest in the production of an industry, it will be conducive to the rapid growth of this industry. The effective use of financial resources means that a certain amount of financial resources will be put into international trade with higher output, which means that global business will develop faster and better. Therefore, whether it is the utilization efficiency of financial resources at the micro level or the allocation efficiency of financial resources at the macro level, the higher the efficiency, the higher the level of international trade (Table 3).

Regarding the efficiency of financial development, this paper adopts the loan deposit ratio as the measurement index. The formula is the financial efficiency index (FE) = the loans of financial institutions/the deposits of financial institutions. Plugging relevant data from the National Bureau of Statistics into this formula shows that China's financial efficiency has continuously improved over the past ten years.

3 Analysis and Discussion

3.1 Empirical Analysis of Time Series Data

To study the impact of financial development scale on the development level of international trade, this paper establishes a univariate regression model with the level of

Table 4. Descriptive statistics (original).

Variable	N	Max	Min	Mean	p50	SD
FIR	30	1.34346	0.50542	0.9508	0.95364	0.24243
ITD	30	-1.03766	-1.90749	-1.51443	-1.57362	0.22998

Table 5. Augmented Dickey-Fuller test for unit root (original).

Variable	Test Statistics	——critical value——			P-value	Result
		1%	5%	10%		
LnFIR	-0.962	-3.730	-2.992	-2.626	0.7668	Unstable
LnITD	-1.941	-3.730	-2.992	-2.626	0.3132	Unstable
D(LnFIR)	-5.368	-3.736	-2.994	-2.628	0.0000	Stable
D(LnITD)	-3.813	-3.736	-2.994	-2.628	0.0028	Stable

international trade as the explained variable and the scale of financial growth as the explanatory variable: Ln(ITD) = C + α1Ln(FIR). In this model, ITD represents the development level of international trade, FIR represents the financial development scale, C is the intercept term, and α1 is the coefficient of the scale of financial development. This paper uses the export trade dependence degree to reflect the development level of international trade. As for the scale of financial development, this paper chooses to use the related financial index mentioned above.

The data used here are time series from 1992 to 2021, and all data are from the National Bureau of Statistics. The variable data were processed logarithmically to eliminate the influence of heteroscedasticity and obtain the variable indicators. Definitions of variables and descriptive statistics are provided in Table 4.

To ensure the validity of the results, it is necessary to carry out a unit root test for each variable to ensure the stability of the variables. According to the ADF test results in Table 5, at the critical level of 10%, all variables are non-stationary series. However, after the first difference, they all pass the test of 1% critical level.

Cointegration test. The cointegration test can analyze the long-term equilibrium relationship between variables. As can be seen from the results in Table 6, the P-value is 0.0001, which rejects the null hypothesis, and it is considered that there is a long-term stable cointegration relationship between this group of variables.

Granger causality test. The Granger causality test can further determine whether there is a causal relationship between variables. The test results are provided in Table 7. It can be seen that at the significance level of 1%, LnITD is not the Granger cause of LnFIR, while LnFIR is the Granger cause of LnITD.

Table 6. Cointegration test (original).

Variable	Test Statistics	——critical value——			P-value
		1%	5%	10%	
Residual	-4.660	-3.736	-2.994	-2.628	0.0001

Table 7. Granger causality test (original).

Null hypothesis	P-value	Result
LnFIR does not granger-cause LnITD	0.001	Reject***
LnITD does not granger-cause LnFIR	0.340	Accept

*Note: * significant at 10%; ** significant at 5%; *** significant at 1%*

Table 8. Regression analysis (original).

Dependent variable: LnITD	Sample:1992–2021
C	0.0294757 0.210
LnFIR	-1.012787 0.016**
F-statistic	6.55
Prob(F-statistic)	0.0164

*Note: * significant at 10%; ** significant at 5%; *** significant at 1%*

Regression analysis. To verify the impact of China's financial development scale on international trade, this paper adopts the least square method to analyze the regression model, and α1 passes the significance test. The final results are shown in Table 8.

As can be seen from the regression results, the financial scale has an inhibition on the development of China's foreign trade. For every one unit increase in financial scale, the level of foreign trade decreases by 1.012787. This result is inconsistent with the previous conclusion. This shows that the expansion of the financial scale should be based on improving the quality and efficiency. Otherwise, such expansion will have substantial hidden risks.

3.2 Discussion About Government Intervention

China has a powerful government. However, it is a double-edged sword. For example, in the article Impact of Coronavirus on liquidity in financial markets [7], it was shown

that liquidity declined after the pandemic in all equity markets observed by the authors except for China, where the liquidity effect disappeared within 10 to 60 days after the pandemic announcement. But through the analysis of the price impact ratio, the author found that from the perspective of long-term financial stability, only China was affected by COVID-19. A powerful government can play a good role in regulating and supporting financial market, but excessive government intervention is likely to cause problems, such as financial repression, which means that the government obstructs the growth of the financial system through excessive intervention in financial activities, and the backward development of the financial system hinders economic development, including international trade. And financial repression will directly affect the pattern and structure of international trade, resulting in serious economic consequences [8].

4   Conclusion

There are three main conclusions of this paper. First, China's financial development has played a significant role in promoting international trade, including moderate expansion of financial scale, upgrading of financial structure, and improvement of financial efficiency. Second, in the past 30 years, China's financial scale has had an inhibitory effect on the development of international trade. The possible reason is the financial growth in different regions is unbalanced. The expansion of financial scale in the developed coastal areas promotes international trade, while the imperfect financial system in the less developed inland areas acts as a constraint [9]. Third, China's powerful government can quickly neutralize the impact of the pandemic on domestic financial markets in a short period but keep financial stability trapped in the effects of the COVID-19 for a long time.

According to the conclusions, the following suggestions are put forward. Firstly, China should expand its financial sector based on high quality and high efficiency rather than blindly expanding it, and correctly guide the flow of credit to international trade industries. Secondly, China should vigorously develop the stock market and bond market, innovate various financial products, and make the credit market and capital market grow together. Thirdly, China should give full play to the role of the market, optimize the allocation of financial resources, and make financial resources flow to foreign trade enterprises with high production efficiency and high added value [6]. Forth, China should balance the level of financial development among different regions, and strive to narrow the differences in financial development between coastal areas and inland areas, to make the financial markets in inland areas richer and more efficient. Last but not least, China should strengthen the supervision of the financial system and reduce the influence of institutional factors at the same time, deeply integrate financial development into the market economic system [10].

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