

The Relationship Between RMB Internationalization and Sino-US Trade

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Abstract. As China is the largest exporting economy, the rapid internationalization of RMB does impact on the trade structures of many countries. As the United States is China's most significant trading partner, the factors influencing Sino-US trade cannot be neglected. As a result, in order to widen the study findings in the field of RMB internationalization, this article applies multiple regression analysis to completely evaluate the influence of RMB internationalization on Sino-US trade. The paper demonstrates that RMB internationalization increases both Chinese imports and Chinese exports to the United States, but has a greater impact on exports than imports. Our preliminary results make favorable recommendations for achieving RMB internationalization and benign interactions in Sino-US trade.

1. INTRODUCTION

A pilot project for RMB cross-border settlement was established in 2009. Since then, the RMB's role in cross-border payment and settlement has been strengthened, indicating the onset of the RMB's internationalization process [1]. The "One Belt, One Road" initiative, which ran through many countries in Europe, Asia, and Africa, was launched in 2013, and the RMB officially joined the SDR in 2016, demonstrating that the RMB's internationalization has continued to deepen. The process of expanding RMB circulation to the international market is referred to as RMB internationalization [2]. This means that the proportion of international trade settled in RMB has increased, as have the types and scales of RMB-denominated securities. According to officially released news, foreign investors increased their holdings of domestic RMB bonds by a net 73.4 billion yuan in the first quarter of 2020, and Hong Kong banks added RMB 6.5 billion in RMB deposits in the first two months of 2020. Furthermore, according to SWIFT data, the share of RMB international payments reached 2.11 percent in February 2020, placing RMB fifth in the international payment market.

With the steady progress of RMB internationalization, the confidence of participants in international RMB transactions will be significantly increased [3], stimulating demand for RMB and increasing RMB purchasing power. On the other hand, accompanied by RMB internationalization, the RMB cross-border payment system would be better constructed to facilitate international RMB trading, which further promotes China's exports. However, China's trade structure has undergone great changes due to the slowdown of world economic growth and the conflict of interests of major powers. For instance, due to its massive trade deficit with

China, the United States has raised tariffs on China's export goods in recent years, causing many uncertainties in the Sino-US Trade structure, exacerbating the multi-directional impact of RMB internationalization. The United States has been China's primary trading partner in the past decades. We noticed that the trade volume between China and the United States was US\$755.645 billion from January to December 2021, a 28.7 percent increase year on year. Among them, China's exports to the United States increased by 27.5 percent to 576.114 billion US dollars; China's imports from the United States increased by 32.7 percent to 179.531 billion US dollars.

As a result, this paper employs multiple regression analysis to thoroughly examine the impact of RMB internationalization on the Sino-US trade in order to broaden the research findings in the field of RMB internationalization. The study shows that RMB internationalization increases both Chinese imports and Chinese exports to the United States, which provides favorable recommendations for achieving RMB internationalization and benign interactions in Sino-US trade.

2. LITERATURE REVIEW

As the scope of RMB transactions continuously expands and the proposal of the major initiative "One Belt, One Road," many efforts have been devoted to the development of RMB internationalization. China has large US dollar reserves, but as the US maintains quantitative easing [4], the Chinese government has begun to internationalize the yuan in order to minimize its reliance on the US currency [5], thereby protecting the value of official reserves. It turns out that the speed of RMB internationalization is truly astonishing [6], especially

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when there is no precedent to draw from [7]. Later, some scholars investigated factors hindering the process, such as exchange rate constraints, trade frictions with the US [8], and capital outflows [9]. Similarly, there is a massive argument over how to continue to internationalize the RMB, such as accelerating the construction of the international banking system and continuing to promote trade cooperation with neighboring countries [10]. Indeed, the RMB internationalization will not only boost China's economic development [11], but will also help maintain the international monetary system's stability [12].

Many studies on the nexus between RMB internationalization and China's foreign economic cooperation conducted in countries along the "Belt and Road" because the "Belt and Road" initiative has figured prominently in RMB internationalization [13]. The "Belt and Road" initiative prompted the RMB to take the first step toward internationalization, namely regionalization [14]. Simultaneously, the internationalization of the RMB allows the RMB to serve as a medium of exchange in overseas infrastructure construction [15], assisting countries along the "Belt and Road" to achieve a leap in economic strength. The impact of RMB internationalization on China's trade competitiveness, in particular, is a dynamic process. China's trade competitiveness will not significantly increase at first, but it will enter the fast lane with the deepening of RMB internationalization and eventually maintain a stable level [16]. Furthermore, the relationship between RMB internationalization and China's ODFI to countries along the "Belt and Road" is positive, owing to the frequent trade between the two sides [17].

To summarize, there has been little research on the relationship between RMB internationalization and the Sino-US trade structure. Given that the United States and China have the world's largest trade volumes, changes in their trade structure will be related to the global pattern of trade competitiveness. As a result, this paper employs multiple regression analysis to investigate the impact of RMB internationalization on the US exports to China and imports from China.

3. ANALYSIS MODEL

The sample data used in this paper is monthly data from 2009 to 2021. The dependent variable is the amount of US exports/imports to China, retrieved from census.gov. The degree of RMB internationalization, as measured by Hong Kong RMB deposits [18], is the explanatory variable, obtained from hkma.gov.hk. In order to eliminate the effect of absolute scale as much as possible, the above variables were logarithmically processed. In addition, several control variables based on the literature in related fields are chosen [19, 20]. Economic freedom is determined by heritage.org based on tax burden, monetary freedom, trade freedom and other factors, which implies the sunk costs incurred by the trade among two countries. Given that international trade involves frequent currency exchange, exchange rates are expected to exert a significant impact on the selection of trading partners. The effective USD/CNY exchange rate and normalized GDP

index were obtained from fred.stlouisfed.org. GDP is used to reflect the level of economic development of a country, and to some extent, it can reflect its market size. Specifically, the constructed econometric model is listed as follows.

$$\frac{l_export_t}{l_import_t} = \beta_0 + \beta_1 l_rmb_t + \beta_2 economicfreedom_c_t + \beta_3 economicfreedom_u_t + \beta_4 exch_vola_t + \beta_5 gdp_u_t + \beta_6 gdp_c_t + \varepsilon_t \quad (1)$$

Table 1 displays the descriptive statistics of all observed variables.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.
<i>l_export</i>	156	13.917	.253
<i>l_import</i>	156	14.961	.296
<i>l_rmb</i>	156	13.102	.82
<i>economicfreedom c</i>	156	54.462	3.124
<i>economicfreedom u</i>	156	76.531	1.518
<i>exch_vola</i>	156	-0.0004	0.008
<i>gdp u</i>	156	99.612	1.33
<i>gdp c</i>	156	99.919	1.39

4. EMPIRICAL RESULTS AND DISCUSSION

Since many economic variables are non-stationary, regression analysis cannot be performed directly on the data; otherwise, spurious regression problems would arise [21]. The data must be subjected to a unit root test first. The ADF test is used, and the results are shown in Table 2. The t-statistics of all variables passed the ADF test ($p < 0.05$), indicating that the pseudo-regression problem will not occur.

Table 2. Unit root tests

Variable	t-Statistic	1% critical value
<i>l_export</i>	-9.790	-3.492
<i>l_import</i>	-8.150	-3.492
<i>l_rmb</i>	-8.468	-3.492
<i>economicfreedom c</i>	-4.677	-3.492
<i>economicfreedom u</i>	-10.667	-3.492
<i>exch_vola</i>	-11.316	-3.492
<i>gdp u</i>	-13.130	-3.492
<i>gdp c</i>	-12.261	-3.492

As demonstrated in the accompanying tables, this research applies multiple regression analysis to investigate the link between RMB internationalization and Sino-US commerce. The coefficient of RMB internationalization is significantly positive ($p < 0.05$) regardless of whether the dependent variable is export or import, indicating that RMB internationalization is positively correlated with the scale of trade between China and the United States, with an impact on US exports being greater than imports. Presumably, it's because the international currency must be continuously exported in order to meet the currency's demand in the international market [22]. If the cross-border outflow of RMB is achieved via Current Account, China needs to expand its imports continuously in order to provide access to the flow of RMB abroad. Furthermore, the United States' economic freedom is not conducive to

US exports to China or imports from China. However, China's economic freedom benefits bilateral trade between China and the United States.

Table 3. Linear regression results (export)

l export	Coef.	St.Err.
l_rmb	.076***	.026
economicfreedom c	.012***	.004
economicfreedom u	-.077***	.015
exch_vola	.793	1.389
gdp u	.023**	.01
gdp c	.043***	.01
Constant	11.582***	2.422
R-squared	0.711	

Note: *** p< 0.01, **p< 0.05, * p< 0.1

Table 4: Linear regression results (import)

l import	Coef.	St.Err.
l_rmb	.074**	.029
economicfreedom c	.048***	.005
economicfreedom u	-.044***	.016
exch_vola	2.561*	1.534
gdp u	.033***	.011
gdp c	.096***	.011
Constant	1.81	2.675
R-squared	0.742	

5. CONCLUSION

This paper employs multiple regression analysis to examine the impact of RMB internationalization on Sino-US trade based on monthly trade data between China and the United States from 2009 to 2021. It shows that RMB internationalization significantly increased both US exports to China and US imports from China, resulting in a win-win situation. Indeed, the trade structure between China and the United States has a significant impact on RMB internationalization as well. In the context of the trade war, China and The US has put stringent controls on imported and exported commodities, as well as cross-border investment, threatening further RMB internationalization. As a consequence, empirical studies show that it will demolish the trading structure between China and the United States, leading both sides to lose. As a result, while supporting RMB internationalization, active participation in cross-border commerce is expected to enhance the international market's sustained and healthy growth.

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