An Empirical Study on Internationalization as Reserve and Investment Currency: Implication for RMB in China[1]

Nam, Soojoong (Kongju National University)

<ABSTRACT>

When the global financial crisis of 2008 revealed the inherent defects of the existing dollar-centered international monetary system, the People's Republic of China (PRC) government has started its efforts to promote the use of its currency, RMB, internationally. In this paper, we analyze the potential of the RMB to join a club of international currencies. For the sake of analytical convenience, this paper focuses on two different functions of an international currency; one is the investment currency demanded by the private sector and the other is the reserve currency demanded by the public sector for the purpose of official foreign exchange reserves. To predict the possibility of RMB internationalization, we conduct an analysis on the effects of economic and financial determinants, such as GDP, trade volumes, price and exchange rate stability, and development of financial market, on the internationalization of currency, using panel data. The empirical results show that it is now unrealistic for the RMB to shortly become a strong candidate for reserve currency. However, our empirical results support possibility that the RMB could become investment currency through the private sector's demand for RMB-denominated bonds. These empirical findings strongly suggests that despite the numerous limitations the RMB has a potential to join a rank of international currencies with the U.S. dollar and euro, ultimately forming a tri-polar global currency system in the future. This work was supported by 2016 Hannam University Research Fund

Keywords: RMB internationalization, Reserve currency, Investment currency

[1] 본 논문은 국제금융연구(2016년 제6권 제2호)에 게재된 것을 수정 및 보완하였으며, 질적 개선을 위한 추가적인 Comments를 환영합니다.

1. Introduction

Global financial crisis in 2008 vividly revealed the inherent imperfections of the existing global monetary system. As shown in the previous crises, numerous proposals for reforming the global monetary and financial systems have been put forward. At that time, many international economists and pundits widely shared the view of America's decline. While the United States was seriously damaged by financial meltdown and economic stagnation, the People's Republic of China (PRC) has shown remarkably resilient capabilities to stay on steady growth trajectory. During that crisis period, furthermore, China surpassed all the other developed countries except for the United States in the overall economic size, and proudly strode to become a member of G2 (Group of Two) with the United States.[2]

The status of China's currency, the Renminbi (RMB), however, was not equally commensurate with the country's global economic prowess. As shown in the BIS Triennial Central Bank Survey, the most comprehensive data source for global foreign exchange (FX) turnover, the RMB's share of total turnover was only 0.4 percent in 2010. This share is extremely small vis-à-vis the U.S. dollar share of 42.4 percent. BIS data on issuance of debt securities points to a rise in the RMB's share to 1.4 percent of the total in 2014, from a share of 0.1 percent in 2010. SWIFT data on the currency denomination of trade finance shows that RMB-denominated L/C (letters of credit) accounted for 3.8 percent of the total in 2015Q1, treating Hong Kong SAR, Macao SAR, and Taiwan Province of China as domestic.[3] In many other measures for international financial transactions, the RMB status is rapidly improving, but still quite disappointing. Not entirely but largely for that reason, the PRC government has started to its efforts to promote the use of its currency internationally.[4] Similar to its other reform measures, however, China has taken a gradual approach in seeking the RMB's global status.

The reason why RMB internationalization is so interesting is mainly due to the fact that

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[2] China surpassed Japan to become the world's second largest economy in 2010, and with a population four times that of the United States, will almost certainly become the world's largest within a generation.

[3] For more discussion on the current status of the RMB, see Review of the Method of the Valuation of the SDR – Initial Considerations, prepared by the International Monetary Fund (IMF) in August, 2015.

[4] In the context of political economy, Alex He (2015) provides an insight for the motivation behind RMB internationalization.

China is still a developing country and the first developing country attempting the internationalization of its currency, without full capital account convertibility, free floating exchange rate, and credible domestic financial market. Nonetheless, since 2009, the People's Bank of China (PBOC) has adopted a functional approach in order to promote the role of the RMB as a settlement currency, investment currency, and finally reserve currency.

The main purpose of this paper is to analyze the potential role of the RMB to become an international currency in terms of various functions. For the sake of analytical convenience, this paper focused on two functions – investment currency and reserve currency. The distinction basically lies in the demand of two different sectors for an international currency. One is the private sector's demand for investment currency and the other is the public sector's demand for official reserve currency. By constructing two empirical model specifications based on these two different functions of international currency, this paper aims to verify the possibility of RMB internationalization. In other words, the empirical analysis shows whether RMB internationalization assumes a role of reserve currency or a role of investment currency, or both or neither. Using pooled OLS and panel estimations on both sectors (Reserve Currency Model and Investment Currency Model), we can make an inference for the presumed role of the RMB during the course of internationalization. In conclusion, we briefly contemplate the possibility of the tri-polar international monetary system in the future.

2. Literature Review

China has already become the world's largest exporter and is rapidly closing the gap with the United States in terms of Gross Domestic Product (GDP). The rise of a great power almost always goes hand in hand with its rise as global financial powerhouse. London was the financial center of the world during Britain's reign as a nineteenth-century imperial power. New York replaced London as the world's financial capital after World War I as the United States emerged as the global power of the twentieth century. China's ascent is perhaps the most remarkable economic trend of the last generation. But whether Shanghai can become a great center of global finance on the order of New York or London remains very much in question.[5] Nonetheless the possibility that the RMB may soon join the ranks of international currencies has recently generated much excitement.

The literature on what determines international currency status is fairly well-established. The literature on international currencies has identified a number of factors that

[5] See Neil Irwin (2014) for more discussions on the PBOC's financial development plan.

determine whether a currency is suited for international currency status.[6]

One relates to patterns of output and trade. The economic size is definitely an important determinant of the extent of international use of a national currency indicating a presumption that there should be a momentum for more widespread use of its currency. It is also important to note that in the bilateral trade a larger country has more negotiation power to use its currency in determining the invoice and settlement currency than a relatively small one. When there is a financial infrastructure for supporting international transactions between those two trading countries, there will be no need for adopting any third country's currency. However, unfortunately, the bilateral trade between emerging market economies not having an internationally used currencies is more likely to use already established international currencies such as the U.S. dollar or Euro. Thus, once China sooner or later achieves the status of international currency, China's currency, the RMB, would be more widely used in the bilateral trade between China and other developing countries in consideration of China's economic size.

As mentioned above, a financial infrastructure is a prerequisite for financial market development. To attain international currency status, long-term capital and short-term money markets must be well developed and externally liberalized. The large financial marketplaces of New York and London clearly benefit the dollar and pound. The Tokyo and Frankfurt financial markets have changed a lot over the last few decades but they still lag behind New York and London as financial centers (Frankel 2012). In Asia, Singapore and Hong Kong have gained the confidence and reputation as regional financial centers, respectively. Shanghai may be next.

The measures for the economic size of the country are relatively clear and easily available. But, it is difficult to find some relevant proxies for size, depth, or general development level that is available for all the financial centers. Several variables such as foreign exchange turnover, stock market capitalization, M2/GDP, and other qualitative variables have been extensively used for empirical studies.

A third factor is confidence in the value of the currency. Stability is clearly important for the international store of value function, particularly for the willingness of central banks to hold their foreign reserves in a particular unit and of private investors to include it in their internationally diversified portfolios (Eichengreen, 2015). The currency is likely to shows some symptom of depreciation mainly due to current account deficits, fiscal deficits, high inflation, and capital outflows. Thus, weaker and more volatile currency cannot have a

[6] Among the relevant references are Chinn and Frankel (2005, 2007), Eichengreen and Frankel (1996), Kenen (1983), Krugman (1984), Talvas (1993), and Talvas and Ozeki (1992) selected from the list of Frankel (2012).

necessary qualification. Even the U.S. dollar has historically experienced dollar crises several times during the periods of high inflation and weak economic fundamentals. As regards confidence variable, relevant proxies are inflation rate and exchange rate volatility.

A fourth factor is network externalities. But there are some disagreements on the persistence of such network externalities. Frankel (2012) uses the analogy with language. He argues, "Nobody would claim that the English is particularly well-suited to be the world's lingua franca by virtue of its intrinsic beauty, simplicity, or utility. It is neither as elegant and euphonious as French, for example, nor as simple and logical in spelling and grammar as Spanish or Italian. Yet it is certainly the language in which citizens of different countries most often converse and do business, and increasingly do so. One chooses to use a lingua franca, as one chooses a currency, in the belief that it is the one that others are most likely to use." But, Eichengreen (2011) points to the possibility that the current dollar dominance cannot persist forever. Network externalities are certainly an important factor that continues to strengthen the incumbency. However, once the incumbent currency loses its credibility and confidence among both public and private sectors, it is a matter of time to disappear or degrade down to a secondary currency.

According to Peter Kenen (2009), an international currency is one that is used and held beyond the borders of the issuing country, not merely for transactions within that country's residents, but also significantly for transactions between nonresidents. From a more theoretical point of view, an international currency should play a role as a unit of account, a medium of exchange, and a store of value not only within but also outside the jurisdiction of the issuing country. Kenen (1983) provided some early thought on the role of an international currency in both public and private transactions. Chinn and Frankel (2005) further developed a list of the international functions of an international currency. Conceptually, an international currency has all three functions at the international level. But, in reality an internationally used currency has some limitations in its functions at the international level; for instance, a currency can be widely used as a medium of exchange for invoicing trade and financial transactions, but cannot be used as a store of value for official foreign exchange reserves unless some prerequisite conditions are sufficiently satisfied.

As regards the status of RMB internationalization, the RMB has started to assume some functions of an international currency, mainly through trade settlements and financial transactions such as bond issuance, foreign direct investment, and bank deposits. But it does not achieve any prominent status as a reserve currency.

There are three sources of demand for the international currency. They are anchor currency as a unit of account, vehicle currency (invoice or settlement currency) as a means of payment, and reserve currency (or investment currency as a means of store of value). Among them, the demand for anchor currency consequently increases as other two sources of demand grow, meaning that the anchor currency can be seen simply as a dependent one rather than

autonomous sources of demand for the international currency. Thus, vehicle currency and reserve currency are more prominently the actual sources of demand for the international currency.

In our following empirical study, we will focus on these two sources. First, the dependent variable of the Reserve Currency Model which is applied to estimate the public sector demand of the currency internationalization is the share of the currency in the foreign exchange reserves used in Chinn and Frankel (2005). Then, as in the study of Chen et al. (2007), the determinants of RMB internationalization are analyzed.

Second, the Investment Currency Model is set to examine the private sector demand of the currency internationalization. For the dependent variable, the amount issued in the global bond market is used. Lim (2006) also has shown that the function of the dollar as a dominant global currency and the role of Euro as a regional key currency are the major factors in determining the role of international currency as a means of store of value, by analyzing the determinants of the investment currency for international bond market.[7] He has examined a phenomenon called multi-polar international currency. He asserts that it happens mainly due to an external effect of the network in determining the status of the global currency. In other words, the U.S. dollar achieves a dominant global status which serves as a means of store of value due to a *de facto* global dollar standard, while Euro only serves regionally as a means of store of value. Krugman (1984) also earlier advocated the possibility of a regional currency becoming the key global currency through the demand of diversification on global currency system and adjustment in balance between those currencies.[8]

3. Empirical Model and Data

3.1. Model Specification

In the previous studies of Chen et al. (2009) and Chinn and Frankel (2005, 2008), the lagged variable was included in the independent variable which has overwhelming effect on the current term. In other words, it is hard to determine the relations between the independent variables and dependent variables, when only current terms are used. Thus, the inclusion of

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[7] According to Lim (2006), in order to estimate the demand of currency internationalization in a region where the currency is used, the demand forecasting model for investment currency is utilized.

[8] Krugman (1984) developed the model in which there can be multiple equilibria in use of an international currency.

the lagged variable is very suitable for explaining the solid position of the dollar as a key international currency. On the other hand, in specifying the empirical model of a new global currency, the lagged terms do not have sufficient explanatory power. In addition, as shown in the study of Li and Liu (2008), a country dummy is used for controlling unobservable variables in estimating the demand for RMB internationalization. But in these preceding researches, it is hard to tell that the endogeneity problem between variables is acceptably controlled. So in this paper, we exclude the lagged terms to make more appropriate model for examining RMB internationalization. Two models used in this paper can be written below.

1) Reserve Currency Model

This paper constructs a Reserve Currency Model that predicts the public sector demand for the currency internationalization, as used in the study of Chinn and Frankel (2005). Equations below are the reserve currency model.

First, the Pooled OLS regression equation can be written as

$$RS_i = \alpha_i + \beta_1 GDP_i + \beta_2 IDEF_i + \beta_3 FXV_i + \beta_4 TRA_i + \beta_5 FM_i + \gamma_1 COUNTRY_{dummy} + \epsilon_i \quad (1)$$

In this Pooled OLS estimation, we use log variables and log difference variables in estimation.

Second, the Panel regression equation can be written as

$$RS_{ti} = \alpha_{ti} + \beta_1 GDP_{ti} + \beta_2 IDEF_{ti} + \beta_3 FXV_{ti} + \beta_4 TRA_{ti} + \beta_5 FM_{ti} + \mu_i + \epsilon_{ti} \quad (2)$$

This equation can estimate the fixed and random effects. We also use log variables and log difference variables in estimation.

The letter small *i* in the model stand for each U.S. dollar, euro, yen, pounds, and Swiss franc. RS represents the share of each currency in the total foreign reserves in the world. GDP stands for the portion of each country's economy in the world total GDP. TRA is the share of trade volume of each country in the global trade. IDFF stands for the average inflation rate of G7[9] countries as a proxy for the stability of the currency value. FXV is the exchange rate volatility measured by past five year's exchange rate fluctuation based on SDR. Finally, to estimate the impact of the development of the financial market, we used M2/GDP which is the FM_i variable.

To avoid the endogeneity problem within the variables, Fixed and Random Effect model and Panel estimation were conducted along with using time-differenced variables. In the

[9] The members of G7 countries include four European countries (Germany, France, and Italy, and United Kingdom), the United States, Canada, and Japan.

Pooled OLS, the country dummy was used to control other kinds of unobservable variables in currency internationalization. In reality, the currency internationalization entails many other omitted variables such as reputation, inertia, and so on. Therefore, the preceding empirical studies, for instance Frankel (2012), used the country dummy or first difference measure to control the omitted variables problem. So this paper also uses Pooled OLS added with country dummy and log differenced variables to estimate the regression. However, this empirical methodology also has a caveat in the degree of freedom, in other words, diminishing number of data. To avoid shortcomings of the original model, this paper uses the panel analysis along with Fixed Effect Estimation and Random Effect Estimation to evade the shortcomings of the original method.

2) Investment Currency Model

This paper also constructs the Investment Currency Model to estimate the private sector demand for the currency internationalization by borrowing the model used in Lim (2006).

First, the Pooled OLS can be written as

$$\text{Bond}_i = \alpha_i + \beta_1 GDP_i + \beta_2 IDEF_i + \beta_3 FXV_i + \beta_4 TRA_i + \beta_5 FM_i + \gamma_1 COUNTRY_{dummy} + \epsilon_i \quad (3)$$

In this Pooled OLS estimation, we use log variables and log difference variables in estimation.

Second, the Panel regression equation can be written as

$$Bond_{ti} = \alpha_{ti} + \beta_1 GDP_{ti} + \beta_2 IDEF_{ti} + \beta_3 FXV_{ti} + \beta_4 TRA_{ti} + \beta_5 FM_{ti} + \mu_i + \epsilon_{ti} \quad (4)$$

This equation can analyze the fixed and random effects. We also use log variables and log difference variables in estimation.

3.2. Overview of the Data

Table 1 summarizes the data sources and methods of calculation for each independent variable used in our estimation. For the currency composition of foreign exchange reserves, the dependent variable, IMF's COFER (Currency Composition of Foreign Exchange Reserves) Database was used. The amount issued for each currency in the global bond market is obtained from the BIS data. Due to the variety of currency counted by the BIS and the IMF's COFER, which are the U.S. Dollar, Euro, Japanese Yen, British Pound and the Swiss Franc, those five international currencies are considered for our analysis. For independent variables, the proportion of country's GDP share from the total world GDP, and

the amount of trade share of the country in the world total are used. We collect the data on exchange rate volatility and inflation from IMF IFS as currency stability variables. For measuring the status of the financial market development, M2 money supply of each country is used. All the variables we used covers the period of quarterly data of 1999-2013.

<Table 1>

Independent variables	Reference	Method of calculation
GDP Share	IMF IFS	1. Get the GDP share of each country[10] from IMF IFS data bank. The panel data period will be from 1999 first quarter to 2014 third quarter. Then multiplying market exchange rate on each data to make a quarterly GDP. 2. Using same method as above, calculate all G20[11] GDP and integrate them all. 3. Divide the data of step 1. by step 2., then multiply 100 to each countries data to get the relative size of the each country over G-20.
Trade Share	IMF DOT	1. From the data of IMF IFS, evaluate the total trade volume of each country 2. Divide the total trade volume of each country by the total sum of all country and multiply 100 to get the relative proportion of each country's trade in world trade market.
Inflation Differential	IMF IFS	Get each country's CPI and subtracts G7 CPI average to get the differential value.
FX Volatility	Bloomberg	1. Get daily closings data for each currency from 1999Q1 to 2014Q3, AUD, CAD, RMB, EURO, JPY, CHF, GBP, and USD. Then divide them by SDR daily closings to get the relative share of each country by SDR. 2. Each country's (daily closings – previous closings)/(previous closings) to get the fluctuation of the FX 3. The completed data will be the standard deviation value of FX fluctuation in each relevant quarter
Financial Market volume	IMF IFS CEIC	Quarterly M2 share of each country from the G7 total. This is referenced from the previous study of Outreville (1999), King and Levine (1993a, 1993b) which used M2 as a measured value for representing the development level and volume of financial market.

[10] U.S., European Union, Canada, Japan, England, Switzerland, and Australia.

[11] India and Saudi Arabia are excluded due to lack of the data.

4. Empirical Results and Implications

4.1. Empirical Results of Reserve Currency Model

We now investigate the determinants of the share of the international currencies for the official foreign exchange reserves. Table 2 summarizes the empirical results. In the column 1-3, we could find out that there is a significant distortion due to the global financial crisis after 2008. Our analysis focuses on the period before the crisis. As shown in columns 4-6, only the economic size variable is significant in the estimation. All other variables do not have significant coefficients. In most estimations, the R^2 has no sufficient explanatory power. So it is obvious that the Reserve Currency model performs very poorly to estimate currency internationalization. These empirical findings provide an insight that any country with advancement in the economic size measures does not necessarily lead to a greater demand of the relevant currency.

<Table 2>
Estimation on public sector demand of global reserve currency model

Reserve Share	1999Q2~2013Q2			1999Q2~2007Q4		
	1(FE)	2(RE)	3(POLS)	4(FE)	5(RE)	6(POLS)
GDP	0.629***	0.341***	0.607***	0.570***	0.566***	0.598***
	(0.196)	(0.103)	(0.099)	(0.207)	(0.173)	(0.172)
Trade	-0.009	-0.204***	-0.180***	0.127	0.217	0.294*
	(0.13)	(0.072)	(0.057)	(0.188)	(0.171)	(0.175)
Inflation	0.193***	0.058***	-0.034***	0.017	0.016	0.005
	(0.03)	(0.014)	(0.005)	(0.011)	(0.010)	(0.013)
FX	0.356	-0.346	0.233*	-0.052	-0.037	-0.039
	(0.444)	(0.353)	(0.13)	(0.034)	(0.026)	(0.026)
Financial	-0.015	-0.037***	0.001	-0.041	-0.179	-0.345
Market	(0.013)	(0.064)	(0.003)	(0.229)	(0.214)	(0.226)
Country			-0.299***			0.011
dummy1			(0.007)			(0.016)
Country			-0.272***			-0.008
dummy2			(0.028)			(0.019)
Country			-0.146***			-0.016
dummy3			(0.039)			(0.017)
Country			-0.196***			0.019
dummy4			(0.033)			(0.016)
C	-0.041	0.259***	0.259***	-0.001	-0.001	-0.002
	(0.137)	(0.064)	(0.042)	(0.005)	(0.005)	(0.012)
R-Sq.	0.545	0.675	0.964	0.108	0.113	0.135

Note: (S.E.) ***, **, * stands for each 1%, 5%, 10% notable

FE = Fixed Effect, RE = Random Effect

4.2. Empirical Results of Investment Currency Model.

From the analysis of the investment currency model which estimates the private sector demand for the international currency, we can have some inference that when the RMB is internationalized, it could become a settlement currency or an investment currency similar to the Japanese yen and the Australian dollar.

<Table 3>

Estimation of public sector demand on Investment Currency Model

International bond issuance	1999Q2~2013Q2			1999Q2~2007Q4		
	1(FE)	2(RE)	3(POLS)	4 (FE)	5(RE)	6(POLS)
GDP	-0.2055	-0.3896**	0.623***	0.8678***	0.6996***	0.6625***
	(0.3404)	(0.1736)	(0.097)	(0.0686)	(0.0652)	(0.0613)
Trade	-0.2479	-0.372***	-0.245***	-0.0392	-0.0806	-0.0525
	(0.2268)	(0.1222)	(0.056)	(0.0623)	(0.0636)	(0.0625)
Inflation	0.2493***	0.11***	-0.021 ***	0.0155***	0.0156***	0.0049***
	(0.052)	(0.0247)	(0.005)	(0.0037)	(0.0038)	(0.0049)
FX	-1.847**	-2.333***	0.283**	0.0128	0.0216**	0.0220**
	(0.7712)	(0.5929)	(0.128)	(0.0115)	(0.0101)	(0.0092)
Financial market	0.0072	-0.009	0.024 ***	0.1893	0.2271***	0.1148
	(0.0231)	(0.0113)	(0.0808)	(0.0759)	(0.0793)	(0.0808)
Country dummy 1			-0.378***			0.0185***
			(0.007)			(0.0059)
Country dummy 2			-0.278***			-0.0142**
			(0.276)			(0.0071)
Country dummy 3			-0.025			-0.0140**
			(0.038)			(0.0064)
Country dummy 4			0.159***			0.0057
			(0.033)			(0.0059)
C	-0.218***	-0.447***	-0.16***	-0.010***	-0.010***	-0.009**
	(0.2388)	(0.1082)	(0.041)	(0.0017)	(0.0023)	(0.0043)
R-Sq.	0.0668	0.1068	0.9659	0.5235	0.5333	0.6084

Note: (S.E.) ***, **, * stands for each 1%, 5%, 10% notable
FE = Fixed Effect, RE = Random Effect

Table 3 summarizes the basic regression results. Following the same distortion caused by the global financial crisis, coefficients of GDP and FX showed an unexpected outcome. An integrated period analysis should be considered with a different approach. Therefore we analyze the fundamentals of currency globalization by concentrating on period before the

crisis. The economic size variable has the most significant explanation in our estimation. As the size of the economy grows faster, the demand for a certain investment currency also increases in parallel. Also when a financial market in a certain country develops, the international bond investment issued by that country briskly increases. From this empirical estimation, the international demand for bond denominated in a certain currency is influenced by the economic size, price stability, exchange rate stability, and financial market development, showing 5 percent significance on the random effect estimation (column 7). In contrast to the result of reserve currency model which showed a weak explanation power of the independent variables, our second estimation model is comparably persuasive.

Of course, it is important to be cautious in interpreting our empirical results directly for the purpose of drawing implications for RMB internationalization. Due to data limitations, we could not conduct more diverse empirical specifications by incorporating more independent variables. Nevertheless, our empirical results are quite suited for anticipating the future progress of RMB internationalization. In short, once the RMB is more internationally used, the RMB is more likely to function as an investment currency rather than reserve currency. In particular, given huge potential investors' demand for the RMB-denominated bonds, a series of capital account liberalization is not necessarily pessimistic. But, it will be highly difficult for the RMB to reach up to the reserve currency status because such status requires more liquid and deep government bond market and international credibility as a safe asset.

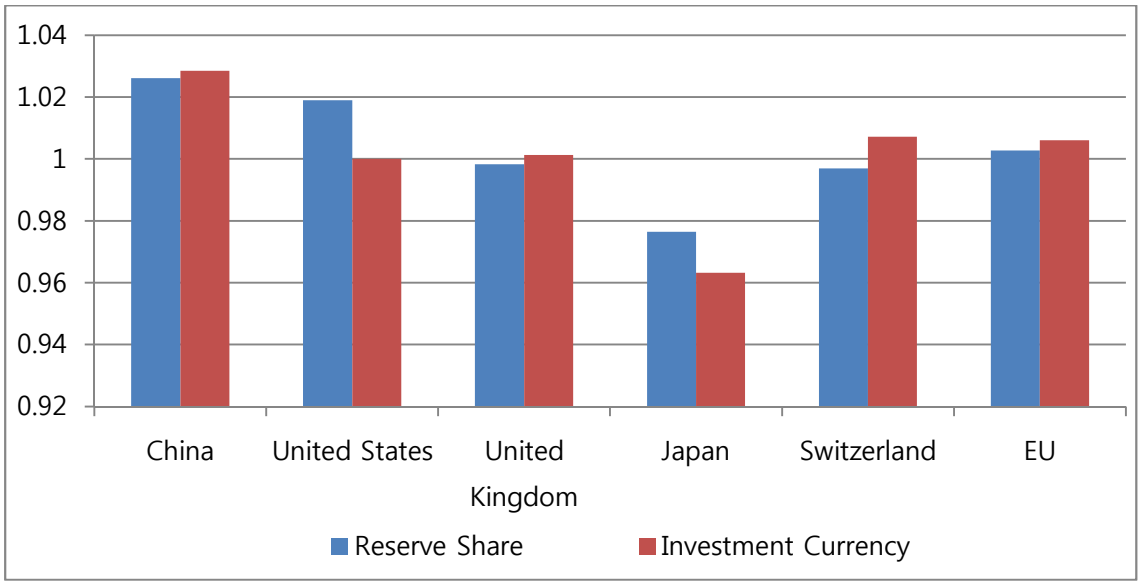
4.3. Estimation on the potential scale of RMB internationalization as an investment currency

We can forecast the shares of the RMB by using the estimated parameters in two international currency models. This simulation has only mechanical interpretation because the RMB has not yet obtained the status of international currency and we do not know the future course of RMB internationalization. The simulations are providing only approximate numbers based on the assumption that the parameters we estimated from the historical data would be stable in the future. Our simulations are conducted by using the data of the second quarter of 2013.

Table 4 shows that the speed of internationalization of the RMB will be relatively faster that other currencies. By using the parameters obtained in the log differenced variable of investment currency model, the RMB's speed of international bond issuance is 1.028, much faster than those of other countries, ranging from 0.957(JP) ~1.002 (CH).

<Table 4>
Internationalization Speed

Log Differenced Variable	Reserve Share	Investment Currency
China	1.026	1.028
United States	1.011	0.993
United Kingdom	0.992	0.995
Japan	0.970	0.957
Switzerland	0.992	1.002
EU	0.998	1.001



5. Concluding Remarks

For decades, the U.S. economic power has legitimized the dollar's claim to reign supremacy. However, since the global financial crisis of 2008 broke out, it has been widely recognized that the costs of dollar dominance are starting to outweigh the benefits.

First of all, both developed and emerging market economies must endure wild fluctuations generated by the U.S. shocks. As shown in the Bernanke's mere indication of Fed tapering in June 2013, global financial markets were severely shaken. The 'taper tantrum' ensued when investors panicked in reaction to news of this tapering and drew their money out of the bond market, which dramatically increased bond yields. This phenomenon is still valid today. The prospects of even a tiny rate rise in the Fed would be likely to suck capital from emerging markets, battering currencies and share prices.

The second problem is the lack of a stabilizing mechanism to mitigate volatile international capital flows. The U.S. Fed's currency swaplines with emerging market economies are very selective and not permanent. Since 2008-2009, the U.S. Congress has grown wary of the Fed's emergency lending. Thus, in the absence of the Fed's role as lender of last resort in a dollar liquidity crisis, the emerging market economies have to accumulate huge amount of foreign exchange reserves as a self-defense mechanism. Furthermore, in times of financial turmoil, the U.S. Treasuries are more likely regarded as safe assets. At this moment, it is highly unlike to expect that the U.S. would share the burden with other currencies.

The dollar has no peers at this moment. The Euro is a currency whose very existence cannot be taken as granted. However, the euro area is still struggling to agree on a full banking union and move forward to forming a fiscal union jointly issuing Euro bond. The Euro is more or less a regional currency vis-à-vis the U.S. dollar. In Asia, the Japanese Yen is more widely used than the Chinese RMB, but cannot even achieve the status of a regional currency. Over the years, the Chinese RMB is expected to emerge as a rank of international currencies. Nonetheless, a move to a multi-polar or tri-polar international monetary system is still deemed as a distant prospect.

Since 2009, the Chinese government, in particular, the People's Bank of China (PBOC), has pursued RMB internationalization. All the policy measures undertaken for RMB internationalization so far have been basically gradual and manageable. In other words, China's RMB internationalization has been pushed in a rather unconventional manner, with the perception of China being not yet well prepared for capital account liberalization, as well as China not having finished its market-oriented exchange rate regime, and not finalizing its market-determined domestic interest rates. In that sense, RMB internationalization is an unfinished agenda, and more or less tantamount to an ultimate goal for China's financial market development in the long run.

Currency internationalization is an endogenous process along with the well-sequenced policies and market responses. Although RMB internationalization is still in its infancy, many people expect the RMB to appreciate against the dollar in the long run, given that China is a creditor and still running large current account surpluses while the U.S. is a debtor and is still running large deficits. Whenever the RMB is anticipated to appreciate, there has been increasing offshore demand for the RMB. But, there is a strong tension between the goal of internationalization and the goal of keeping the currency competitively valued. Historical experiences, for example, the case of the Japanese yen, told us that only strong currency could attain full internationalization status.[12] How to overcome "fear of floating" – widely prevalent in export-oriented countries – also in China's monetary authority remains a big question.

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[12] In the first few years of its life, the Euro also did not receive much respect. This was largely related to its substantial weakness against the dollar. But subsequently this depreciation was fully reversed, and then the Euro started to gain the status of international reserve currency particularly from the central banks.

The list of challenges on both domestic and international fronts is numerous and daunting, which includes 1) deregulation of domestic market interest rates, 2) full development of benchmark financial products such as government bonds with various standard maturities, 3) free entry of foreign institutions to domestic financial markets, 4) free of capital restrictions, and 5) more flexible exchange rates. At the same time, strong and sound macro-prudential regulations and effective and competent financial supervisory institutions are required to be put in place. However, capital account liberalization is likely to result in the boom-bust cycles. During the transition period, China must be very cautious of volatile capital flows. In addition, large fluctuations in the capital flows would generate financial market instability in the region. Many Asian countries would be vulnerable to China shocks. Thus, the process of RMB internationalization must be gradual, patient, and orderly. Otherwise, it will be a disaster.

At this moment, the RMB will not replace the role of the U.S. dollar as Euro also couldn't challenge the U.S. dollar status in the previous decade. The power of strong network externalities of the U.S. dollar, so called "exorbitant privilege", will not vanish anytime soon. Without any formal monetary arrangements like Euro, the RMB may not achieve a regional anchor currency status. But, the RMB may achieve a regional key currency status as both settlement and investment currency within Asia, given increasing volume of trade with China. In the long run, many Asian countries will use more RMB for both trade and finance. In that sense, the possibility of RMB bloc should not be ignored. The natural candidates for RMB bloc may be Hong Kong SAR, Taiwan, and countries having strong trade and investment linkages with China.

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