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The Benefits and Costs of Renminbi Internationalization

Liqing Zhang and
Kunyu Tao

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Liqing Zhang is Dean of the School of Finance and Director of the Center for International Finance Studies at Central University of Finance and Economics, Beijing. Kunyu Tao is Assistant Professor in the School of Finance at Central University of Finance and Economics.

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Please contact the authors for information about this paper.

Email: zhlq@cufe.edu.cn; tina.taokunyu@gmail.com

Asian Development Bank Institute
Kasumigaseki Building 8F
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

Abstract

Despite the increasing recognition that the renminbi (RMB) may eventually become a key global currency, several important questions remain to be answered. This paper analyzes the benefits and costs of the RMB becoming an international currency. The benefits include reduced exchange risk, promotion of the development of the financial market, and expansion of firms in the People's Republic of China. The costs include general costs, which complicate monetary policy and exchange rate policy, and several transitional risks. We argue that the benefits of RMB internationalization should surpass its costs, particularly in the long run, and provide comprehensive policy choices for a sustainable process of RMB internationalization.

JEL Classification: F42, F31, F36

Contents

1. INTRODUCTION

The United States (US) financial crisis of 2007–2008 has created a new wave of discussion about the reform of the international monetary system. Once again, the US dollar-centered reserve system has been strongly criticized for its exorbitant privileges, which not only cause financial instability but also give rise to inequality between rich countries and poor countries (Stiglitz 2009; Zhou 2009). Although various reform proposals have been repeatedly presented, such as a return to the gold standard, creation of a single world currency, special drawing right-based proposals, and an improved US dollar standard, many economists believe that a multipolar currency system is the most realistic development in the foreseeable future, or even in the coming decades (Eichengreen 2011). Through currency competition, any reserve currency-issuing country could become more disciplined in its monetary and other macroeconomic policies, which could eventually lead to a more stable international monetary system (Zhang 2012).

There has been a consensus that the US dollar, the euro, and an Asian currency should be the main parts of the multipolar reserve system. Until 2009, many economists believed that either the Japanese yen or a sort of synthesized currency, called the Asian dollar, could be popular in Asia and become one of the pillars of the multipolar system. However, since 2009, the currency of the People's Republic of China (PRC), the renminbi (RMB), has been increasingly used in trade settlements and other cross-border financial transactions, indicating that the currency structure of the multipolar system may take a different form.

Although some researchers early in this century argued that the PRC should push forward the internationalization of the RMB (Zhao 2001), and more recently some have argued that the internationalization of the RMB should become a new driver of deep economic reform and opening up, the PRC government has never declared such a move or mentioned it in its official documents. Nevertheless, the 2009 removal of restrictions on trade settlements in RMB has spurred a de facto process of RMB internationalization. In the ensuing 4 years, the scale of RMB use and holdings beyond the borders of the PRC has rapidly increased.

Despite an increasing recognition that the RMB may eventually become a key global currency, several important questions need to be answered. Among others, how should we think about the benefits and costs of the RMB becoming an international currency? What are the key preconditions for it to become a reserve currency, and can this trend continue if the PRC does not fully remove its capital controls? This paper is intended to provide some new perspectives on the benefits and costs of RMB internationalization and its related policy issues.

2. LITERATURE REVIEW

By definition, an international currency is one that is used and held beyond the borders of the issuing country, not merely for transactions with that country's residents but also, and importantly, for transactions between nonresidents (Kenen 2009). From a more theoretical perspective, an international currency should function as a unit of account, a means of exchange, and a store of value not only within but also outside the borders of the issuing country. Kenen (1983) provided some early thoughts on the roles that an international currency should play in both governmental and private transactions. Chinn and Frankel (2005) developed a list of the international functions of an international currency (Table 1).

Table 1: Roles of an International Currency

Function of money	Governments	Private Sectors
Store of value	International reserves	Currency substitution (private dollarization)
Medium of exchange	Vehicle currency for foreign exchange intervention	Invoicing trade and financial transactions
Unit of account	Anchor for pegging local currency	Denominating trade and financial transactions

Source: Chinn and Frankel (2005).

Since the 15th century, the currencies of Portugal, Spain, the Netherlands, France, the United Kingdom, and the US have in succession played a role as a leading international currency. In the late 20th century, in addition to the dominant role of the US dollar, the Japanese yen, the German deutsche mark, the Republic of Korea's won, the Singapore dollar, and more recently, the euro have played some role as international currencies. The evolution of international currencies suggests that the internationalization of any national currency is basically a market-driven process, mainly reflecting economic fundamentals such as robust economic growth, price stability, a highly developed financial market, foreign confidence in the stability of the convertibility regime, and a healthy situation with regard to balance of payments (Bergsten 1975).

Although some countries' policy making has indicated a reluctance to have their currencies internationalized, there has long been academic discussion of the benefits and costs of being an international currency. Cohen (2012) summarized the benefits and risks of being an international currency. He argued that the benefits may include transaction cost reductions, collection of international seigniorage, macroeconomic flexibility, political leverage, and reputation as a soft national power. The corresponding costs or risks include a tendency toward currency appreciation, external constraints imposed on domestic monetary autonomy, and a greater global policy responsibility. Genberg (2010) pointed out that there are incremental benefits during the internationalization process and that one of the costs is associated with international bond issues, which make domestic interest rates more dependent on external factors.

In a more specific context, Papaioannou and Portes (2008) analyzed the costs and benefits of the euro as an international currency. They argued that the introduction of the euro noticeably reduced transaction costs in both financial markets and financial services and promoted global financial integration. They also found no evidence that currency internationalization made it more difficult to enforce monetary policy. Kim and Suh (2011) compared the gains with the losses during internationalization of the Republic of Korea's won. They argued that one of the main benefits of the won becoming an international currency was to blunt the adverse effects of external financial shocks, which could be very important for a small, open economy. However, there also was a significant transitional risk. An emerging market economy hoping to internationalize its currency must liberalize its capital account, which may increase the country's vulnerability to external shocks and even cause financial instability.

The process of RMB internationalization started during the last decade and has rapidly gained speed in the past few years. The People's Bank of China Study Group (2006) established an index to identify the degree of internationalization of a specific currency. Based on the index, the US dollar was set at 100, the euro was 40, the Japanese yen was 28.2, and the RMB was only 2. Chen and Hu (2013) presented an RMB internationalization index (RII) based on the RMB's role as an invoice, settlement, and reserve currency and found that the RII was still very low, though it had increased dramatically since 2010. Later, the study group announced an annual report on RMB internationalization (Renmin University of China Institute of International Currency 2012), which extended the RII to 2012. A comparison of these measurements of RMB internationalization is summarized in Table 2.

Table 2: Comparison of Measurements of Renminbi Internationalization

Year	Renminbi	US dollar	Euro	Yen
2006	2%	100%	40%	28.2%
2009	0.02%	52.79%	26.92%	3.6%
2010	0.23%	53.33%	25.58%	4.34%
2011	0.45%	54.18%	24.86%	4.56%
2012	0.87%	52.34%	23.72%	4.78%

Sources: For 2006, People's Bank of China Study Group (2006); for 2009–2011, Chen and Hu (2013); for 2012, Renmin University of China Institute of International Currency (2012).

Although the internationalization of the RMB is still only beginning, there is a lot of discussion of the pros and cons of the process. Chen et al. (2007) stressed the importance of benefit–cost analysis in promoting RMB internationalization for the government of the PRC. Gao and Yu (2010) suggested a road map for RMB internationalization and argued that regardless of whether it was to be an international or a regional currency, the process would be beneficial to the whole economy. Hai and Yao (2010) compared the benefits and challenges of RMB internationalization, arguing that the cross-border circulation of RMB would have a very small impact on the effectiveness of the PRC's monetary policy, based on the VAR model. Zhang (2013) pointed out the arbitrage risks during the process of RMB internationalization. Li and Liu (2008) suggested that, due to the PRC's high savings rate, the benefit of borrowing internationally may be low, and considering financial repression (including interest rate controls, credit constraints, capital controls, etc.), the benefit of seigniorage income after the PRC's capital account liberalization might be small. Ba et al. (2010) analyzed the impact of RMB internationalization on the PRC's finance industry, including the banking sector, the stock market, the bond market, and insurance. They demonstrated that the effects of RMB internationalization on the PRC's financial industry will be long-lasting and profound.

The literature provides a background for further discussion of the benefits and costs of RMB internationalization. The remainder of this paper is organized as follows. First is a brief review of the development of RMB internationalization during the past 4 years. The next part elaborates the main benefits and costs of RMB internationalization. Third is a discussion of the related policy issues to maximize the benefits and mitigate the costs of internationalization, particularly the costs and risks in the transitional period. The final part outlines the conclusions and a further research agenda.

3. MAIN DEVELOPMENTS IN RENMINBI INTERNATIONALIZATION SINCE 2009

Since 2009, the RMB has assumed some functions of an international currency, mainly through trade settlements and financial transactions such as bond issuance, foreign direct investment, and bank deposits. It also has become a reserve currency in some emerging market economies and a denominated currency in bilateral currency swap agreements. Although its scale is still very limited, over the past few years the RMB has rapidly emerged as an international currency with some functions as a unit of account, a means of exchange, and a store of value.

3.1 Trade Settlement in Renminbi

Trade settlement in RMB is probably the most important development in the currency's internationalization. In April 2009 the PRC government announced a pilot scheme of cross-border trade settlement in RMB; as a result, the amount of trade settlements in RMB has increased dramatically. As of the first quarter (Q1) of 2013, the quarterly trade settlement in RMB was CNY1 trillion, or around 11% of total trade settlements. About 80% of trade settlements in RMB are through Hong Kong, China. As a result, RMB deposits in Hong Kong, China also rose dramatically during the past 3 years. This demonstrates the importance of Hong Kong, China in the internationalization of the RMB.

3.2 Cross-Border Direct Investment in Renminbi

Cross-border direct investment in RMB has increased rapidly since 2011, and the scale of RMB settlement for foreign direct investment has been much greater than for overseas direct investment. In 2012 the total amount of cross-border direct investment reached CNY284 billion. Of this, foreign direct investment accounted for about CNY253.6 billion, whereas overseas direct investment was about CNY30.4 billion. More impressively, foreign direct investment in RMB represented 36% of total foreign direct investment inflows into the PRC.

3.3 Cross-Border Financial Transactions in Renminbi

In 2005, the PRC permitted domestic financial institutions to issue RMB-denominated bonds in Hong Kong, China. More recently, many PRC financial institutions and foreign financial corporate and multinational enterprises have joined in the issuance of RMB-denominated bonds there, and nonfinancial institutions were allowed to issue RMB-denominated bonds in Hong Kong, China, according to a May 2012 provision announced by the National Development and Reform Commission.[1] By August 2012 there had been more than 180 such issues, totaling CNY221.8 billion.

Since 2010, in addition to issuing bonds, the PRC government has launched a series of policies aimed at promoting the financial use of the RMB, and such financial transactions have greatly increased. RMB-denominated qualified foreign institutional investment began at CNY20 billion in 2011 and increased to CNY270 billion 1 year later.

[1] More information can be found at http://www.chinabond.com.cn/d2s/cbData.html.

3.4 Reserve Currency and Currency Swaps with Foreign Central Banks

Over the past few years, the RMB has become a reserve currency for some emerging market economies and developing countries, such as Belarus, Cambodia, Malaysia, Nigeria, the Philippines, the Republic of Korea, and the Russian Federation. Although the scale is very small, often below 5% of the total holding in these countries, it is somewhat symbolic that the RMB has to some degree emerged as a reserve currency. More impressively, from 2008 to 2009, following the outbreak of the US subprime mortgage crisis in 2008, the PRC signed 8 currency swap agreements with 6 Asian countries and 2 others, a move toward RMB internationalization. Since then, the total amount of RMB swapped has increased rapidly, reaching more than CNY2 trillion by March 2013.

3.5 Reasons behind the Rapid Development of Renminbi Internationalization

It is fair to say that the internationalization of the RMB has developed so rapidly over the past 3 years due to various pilot schemes and related liberalization measures, which have greatly facilitated such development. However, the internationalization of the RMB is basically a market-driven rather than a government-driven process. The following factors have helped push the process forward.

First, increased trade between the PRC and Southeast Asian countries has played an important role. From 2002 to 2011, trade between the PRC and countries in the Association of Southeast Asian Nations (ASEAN) increased from $55 billion to $360 billion. In particular, it rose dramatically after the establishment of the PRC–ASEAN free trade agreement in 2009, which resulted in a 70% trade increase from 2009 to 2011. The rapid increase of trade with ASEAN and other Asian countries created a significant opportunity for both sides to use the RMB as a settlement currency.

Second, the continuous appreciation of the RMB since 2005 has encouraged foreign exporters to settle their trades in RMB. It is worth noting that the scale of RMB settlement for imports has been much larger than the scale of RMB settlement for exports over the past years, on average accounting for 80% of settlements. The best explanation for the PRC's imbalanced currency structure of trade settlements is probably the expectation of RMB appreciation. Zhang (2013) found that from January 2010 to March 2013, the coefficient of correlation between RMB appreciation and the increment of RMB deposits in Hong Kong, China was 0.54.

Third, given the global financial instability caused by the recent global financial crisis, many emerging economies have suffered from capital outflows and liquidity shortages. To deal with possible liquidity problems, it is natural for central banks from these economies to sign currency swap agreements with the PRC, which holds the largest foreign exchange reserves in the world (Woo 2010).

Fourth, since its return to the PRC in 1997, Hong Kong, China has been trying to strengthen its role as an international financial center, with support from the central government. To maintain the prosperity of its banking sector, Hong Kong, China has constantly requested that the central government allow banks and other financial institutions in Hong Kong, China to conduct business in RMB.

4. BENEFITS OF RENMINBI INTERNATIONALIZATION

The key to most successful international currency use is the trade-off between the benefits and associated losses arising from externalities. Although it is developing very quickly, RMB internationalization is still only beginning, and on the whole it is very limited in scale. Therefore, it might be too early to comprehensively evaluate its economic consequences, from either a national or a global perspective. Nevertheless, it is surely necessary and possible to have some forward-looking discussion about the benefits and costs of the ongoing process.

RMB internationalization, particularly when the RMB eventually becomes a key international currency, may bring significant benefits to the PRC. First, by using the RMB as an invoicing and settlement currency, PRC firms may reduce the exchange risks of international trade and investment, thereby reducing transaction costs. The theoretical description of the benefit of currency internationalization in reducing exchange rate risks and transaction costs is quite similar to the analysis of optimal currency area theories, which was brilliantly made by Mundell (1961). As the second-largest trading country in the world, the PRC accounted for nearly 9% of global trade in 2010, and this is expected to reach 12% by the end of 2014, according to an estimate by the International Monetary Fund (Maziad et al. 2011). In addition, other than the US, the PRC is probably the largest destination country for foreign direct investment, and the country is becoming an increasingly important source of overseas direct investment. Obviously, RMB internationalization would create a great deal of monetary efficiency and integrate the PRC more deeply into the world economy.

Similarly, the internationalization of the RMB should be helpful in reducing currency mismatch for financial institutions. It would alleviate the problem of "original sin," which many emerging economies have to live with.[2] The PRC is a typical emerging market economy, with underdeveloped financial markets. As its economy becomes more deeply involved with the world economy, particularly through a more open financial sector and a more internationalized banking sector, PRC banks may find currency mismatch problems to be a greater challenge. RMB internationalization may help these banks to reduce exchange risks. In addition, the increased weight of the RMB-denominated assets in financial institutions would reduce the effects of foreign exchange risk in the Bank for International Settlements' computation of capital adequacy requirements.

Second, RMB internationalization would go hand in hand with a larger, more sophisticated financial sector in the PRC and would benefit the PRC's transformation of its economic growth model. Some writers argue that financial development should be a precondition of currency internationalization (e.g., Dobson and Masson [2009]; Tavlas [1997]). However, the increased use of a domestic currency for international trade and investment would increase the breadth and depth of the financial market by attracting more market participants and strengthening the linkages with the global financial market. Chen, Peng, and Shu (2007) used the currency internationalization experiences of Germany and Japan to illustrate the importance of financial development and the possible gains produced by currency internationalization. Papaioannou and Portes (2008) also argued that currency internationalization would promote the development of financial markets, both domestically and globally. Taking

[2] Currency original sin is a commonly used metaphor in international finance. It was proposed by Barry Eichengreen, Ricardo Hausmann, and Ugo Panizza in a series of papers to refer to a situation in which a country is not able to borrow from abroad in their domestic currency.

Europe's Economic and Monetary Union following the introduction of the euro as an example, they found that private credit in participating countries increased by roughly 1.15% more than in other countries, and that these welfare gains resulted from the internationalization of the euro.

In the case of the PRC, it is recognized that a more developed financial market is the precondition of RMB internationalization. On the other hand, if the RMB internationalization is wide and deep, it would inevitably push forward the development of the financial sector through international trade settlements in RMB and financial services related to RMB-denominated international bond transactions. Indeed, RMB internationalization may become an important driver of the PRC's bond market. In addition, as some researchers have argued, RMB internationalization will largely benefit the rise of Shanghai as an international financial center (Gao and Yu 2010; Ranjan and Prakash 2010). Furthermore, RMB internationalization may actually become a new catalyst for financial reform if PRC authorities believe that a more internationalized currency is in the national interest (Maziad et al. 2011; McCauley 2011).

In addition to these arguments, empirical evidence shows the effects of currency internationalization on the development of domestic financial markets. We first look at the global experiences and then focus on the PRC's experience.

4.1 The Global Experience

Since the 1990s a great deal of literature has described the determinants of financial development, including laws, institutions, political systems, the nature of bureaucracy, culture, social capital, and other elements (Allen and Gale 2001; Chinn and Ito 2006; La Porta et al. 1998; Levine 1999). However, little empirical research has focused on the effect of currency internationalization on financial development. We have based our empirical model on Chinn and Ito (2006) and Papaioannou and Portes (2008):

$$FD_{it}\text{-}FD_{it-3} = \alpha_0 + \beta_1 FD_{t-3} + \beta_2 CI_{it-3} + \Gamma \mathrm{X}_{it-3} + \varepsilon_{it} \tag{1}$$

The dependent variable is financial development (*FD*), and among the various measurements of financial development (Beck, Demirgüç-Kunt, and Levine 2000), we use the amount of private credit relative to gross domestic product (GDP) and total stock market value relative to GDP to evaluate the degree of financial market development. Our concerned explanatory variable is currency internationalization, denoted as *CI*.

The extent of currency internationalization is determined by complex factors, and there is no uniform measurement of currency internationalization worldwide. The three main functions of a currency (as a store of value, a medium of exchange, and a unit of account) are the general factors to consider when measuring the internationalization of a currency, and among these, the function as a medium of exchange may be the most important in terms of impact on financial development. Therefore, rather than constructing a comprehensive index, we use the currency's share of global trade settlement to estimate a currency's function as a medium of exchange and treat this as a proxy for currency internationalization.

X is a vector of control variables that are in line with the literature. These include the GDP growth rate (*growth*); log GDP per capita in purchasing power parity terms (*income*); the inflation rate (*inflation*); trade openness (*openness*), measured as the ratio of the sum of exports and imports to GDP; and financial openness (*KAopen*), which measures the degree of capital account openness. Subscript *i* refers to the country, subscript *t* refers to the year, and ε_{it} is the error term.

The sample covers Japan, the United Kingdom, and the United States from 1980 to 2005 and the eurozone from 2000 to 2005. Financial development and most of the control variables come from the International Monetary Fund's International Financial Statistics and the World Bank's World Development Indicators. The share of currency settlements for the US dollar and the euro are from Kamps (2006), and the share for the pound sterling and yen are collected from national central banks and statistical offices. The index for financial openness comes from Chinn and Ito (2006).

To avoid problems of endogeneity, we specify our model as a growth rate on levels regression, similar to a panel error-correction model with non-overlapping data. We only sample data every 3 years between 1980 and 2005, and we use the 3-year average growth in the level of financial development as the dependent variable and the "initial conditions" for time-variant explanatory variables, including the initial level of financial development indicator for each 3-year panel.

The regression results for equation (1) are reported in Table 3. We can see that when controlling for economic indicators, currency internationalization in terms of trade settlement has a significant and positive effect on the development of a financial market; a one-unit rise in currency internationalization will increase the development of the financial market by 0.2 percentage points in terms of private credit and 0.7 percentage points in terms of stock market total value. For the control variables, higher income levels and greater trade openness will assist the development of financial markets, and inflation has a negative impact on the dependent variable.

Table 3: Impact of Currency Internationalization on Financial Development

Variable	Private Credit (I)	Total Stock Market Value (I)	Private Credit (II)	Total Stock Market Value (II)
CI	0.0022** (0.0009)	0.0071* (0.004)	0.0024** (0.0011)	0.0088** (0.0041)
Growth	---	---	0.0022 (0.0015)	0.0024* (0.0013)
Income	---	---	0.0031** (0.0014)	0.0037** (0.0015)
Inflation	---	---	-0.0212** (0.0121)	-0.0302** (0.0133)
Openness	---	---	0.0122** (0.0055)	0.0117** (0.0051)
KAopen	---	---	0.0027** (0.0014)	0.0088 (0.0071)
Observations	32	32	32	32
Adjusted R-squared	0.18	0.16	0.24	0.22

Notes: Numbers in parentheses are associated standard errors. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' estimation.

4.2 The Case of the People's Republic of China

Based on the global experience, we try to analyze the case of the PRC. In general, RMB internationalization may affect the PRC's financial development in the banking industry, the stock market, the bond market, and the insurance market. To examine the general effect, we have constructed the following regression model, based on Chinn and Ito (2006) and Papaioannou and Portes (2008):

$$FD_t = \alpha + \beta_1 rmb_t + \beta_2 Control_t + \varepsilon_t \qquad (2)$$

The dependent variable is financial development; we use only the share of private credit relative to GDP to evaluate the extent of the PRC's financial market development. The main explanatory variable is RMB internationalization, for which we use two indicators. The first is the RMB internationalization index (*RII*) published by Chen and Hu (2013). Chen and Hu based this quarterly index on the three major functions of an international currency and found that the index increased dramatically from 2010 to 2013. The other indicator is the RMB cross-border trade settlement ratio (*settlement*), because one of the most important functions of an international currency is its use as a medium of international payment, and the rise of payment demand will promote its use in the international reserve. The control variables, which are in line with the literature, include the GDP growth rate (*growth*) and GDP per capita (*income*). The final item is an error term.

All of the variables are quarterly data and most are compiled from official National Bureau of Statistics data from December 2009 to June 2013. Due to the limited sample period we cannot use the same regression method as for the global experience, and instead use a simple ordinary least squares regression with robustness check.

The results are presented in Table 4. Columns 1 and 2 are estimated with *RII* and columns 3 and 4 are based on *settlement.* First, we find a significant and positive relationship between RMB internationalization and the PRC's financial development, which indicates that RMB internationalization will promote the PRC's financial market development as a whole. Second, a 1 percentage point rise in *RII* will boost the PRC's financial market development by 0.6 percentage points. Third, among the three major currency functions, international payment can be regarded as the leading index. Given that the effect of cross-border RMB trade settlements on financial development is greater, a 1 percentage point increase in the settlement ratio can increase the share of private credit relative to GDP by 1.8 percentage points.

Table 4: Basic Estimation of the Impact of Renminbi Internationalization on the Financial Development of the People's Republic of China

Variable	1 RII	2 RII	3 Settlement	4 Settlement
RII	0.006* (0.0033)	0.0078** (0.0032)	---	---
Settlement	---	---	0.012** (0.004)	0.018*** (0.005)
Growth	---	0.052*** (0.0189)	---	0.048** (0.0147)
Income	---	0.024** (0.0102)	---	0.021* (0.0101)
Observations	16	16	16	16
R-squared	0.68	0.76	0.74	0.82

Notes: Numbers in parentheses are associated standard errors. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' estimation.

This regression may include an endogeneity problem because financial development may also promote RMB internationalization. Because the sample period is short, we refer to Wooldridge (2002) and use the lagged value of the explanatory variable as the instrumental variable to deal with the endogeneity issue and the simultaneity problem, because the lagged RMB internationalization index will affect financial development but current financial development will not influence previous currency internationalization.

The results listed in Table 5 indicate that even when the reverse causality and endogeneity issues are considered, RMB internationalization will still have a positive effect on the PRC's financial development. What is more, even though we cannot testify to the nonlinear effect in the previous regression, due the sample size, many studies have revealed a non-monotonous effect, arguing that the long-run effect will be greater than the short-term effect (Ba et al. 2010; Papaioannou and Portes 2008).

Table 5: The Impact of Renminbi Internationalization on the Financial Development of the People's Republic of China—Robustness Check

ln FD	**1** **RII**	**2** **RII**	**3** **Settlement**	**4** **Settlement**
Lagged RII	0.0055* (0.0026)	0.0062** (0.0028)	---	---
Lagged settlement	---	---	0.010* (0.004)	0.016*** (0.005)
Lagged growth	0.044** (0.0142)	0.048*** (0.0149)	0.032** (0.0124)	0.038** (0.0117)
Lagged income	0.020* (0.01)	0.021* (0.010)	0.015 (0.009)	0.019* (0.009)
Observations	16	16	16	16
R-squared	0.62	0.67	0.72	0.76

Notes: Numbers in parentheses are associated standard errors. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Source: Authors' estimation.

Third, RMB internationalization would allow PRC firms and financial institutions to borrow in RMB, which may reduce costs in two ways. First, PRC firms and financial institutions may borrow in domestic financial markets at a lower cost, due to increased foreign demand for RMB-denominated securities. Second, PRC firms and financial institutions may get loans or issue bonds at lower cost in offshore RMB markets if the restriction on borrowing abroad is loosened.

Similarly, RMB internationalization would allow the government of the PRC to borrow at lower cost and thus to maintain higher fiscal deficits than it can at present. This benefit is akin to so-called monetary privilege or macroeconomic flexibility (Cohen 2011). By selling RMB-denominated government bonds and treasury bills to foreign investors, the PRC may get low-cost funding from the rest of the world. Looking forward, as a consequence of the aging society, the PRC may face more fiscal deficit pressure than it faces today. RMB internationalization may provide the PRC with a new channel for dealing with these challenges. Of course, such a benefit will largely depend on how sophisticated the PRC's financial market (particularly the bond market) is in the future. And it would certainly be a big mistake for the PRC to abuse such a benefit and lose control of its fiscal deficits.

Fourth, RMB internationalization would benefit the overseas expansion of PRC firms and financial institutions and would increase the ability of PRC firms to invest abroad. Generally, investors prefer to operate in their domestic currency, where it is allowed, because it is more convenient and less expensive for them to hold. In the future, along with an increase of foreign direct and indirect investment, the RMB will increasingly function as an international currency in contracts and claims documents. Accordingly, the PRC's capital and financial accounts may show big deficits, something both the US and Japan have experienced in the past. For instance, from 1953 to 1971 (except for 1968 and 1969), US capital and financial account deficits increased dramatically; the deficit in 1971 was 51.39 times the deficit in 1953. Likewise, since 1981, when Japan began to promote the international use of the yen, Japan's capital and financial accounts have been in deficit, with the deficits from foreign investment increasing from ¥4.71 trillion in 1981 to ¥21.35 trillion in 1998 (International Monetary Fund 2012).

Meanwhile, RMB internationalization could promote the expansion of the PRC's financial institutions. The main PRC commercial banks (the Bank of China, the Construction Bank of China, and the Industrial and Commercial Bank of China) have become the leaders of the global banking industry in terms of assets, capital, and profitability. While the domestic market has become more competitive, these banks have built up ambitious internationalization strategies.

As the RMB becomes an increasingly important currency in global financial markets, financial institutions will conduct more and more RMB business, and in comparison with foreign banks, the PRC's banks could be more competitive in this area. Therefore, it is reasonable to speculate that RMB internationalization would push forward the overseas expansion of PRC financial institutions; in the early stages, this would be particularly true of the commercial banks.

Fifth, RMB internationalization would allow PRC monetary authorities to collect seigniorage from the rest of the world, although this should not be considered a primary benefit. Seigniorage is defined as the profit resulting from the difference between the nominal value of a currency and its cost of production. The government that issues a specific currency can gain seigniorage by exchanging its paper money for goods and services. Cohen (2011) pointed out there are two components in seigniorage: the first results from foreign accumulations of actual cash bank notes and coins; the second derives from foreign accumulations of financial claims denominated in the local currency. The latter actually means an increase of effective demand for assets, which drives the cost of borrowing below what it might be otherwise.

The first component—holding of notes and coins abroad—represents the equivalent of an interest-free loan to the issuing country. We can define this part of seigniorage based on Hai and Yao (2010):

$$S = r^{*}\Delta Mr , \qquad (3)$$

where S is the international seigniorage; r is the zero-risk interest rate of RMB in the offshore market; and ΔMr is the increment of money supply held by other countries.[3] The overseas outflow of RMB is mainly the result of cross-border trade, cash payments made during cross-border travel, and underground foreign exchange. Because it is difficult to get accurate data on cash payments and underground exchanges, we use the net import settlements in RMB to represent ΔMr.[4]

Estimated RMB seigniorage is presented in Table 6. The rough estimate of the share of import transactions comes from the Chinese Academy of Social Science. Assuming that the zero-risk interest rate for offshore RMB remains at 3% during the sample period gives us estimated results. For example, in 2012, current account transaction settlements in RMB were valued at roughly CNY3 trillion. Due to the appreciation expectation, more than 70% of these transactions related to the import of goods or services, so the net import transaction share was 40%, equating to around CNY1.2 trillion in net outflows. Supposing that these funds remained outside the PRC for 1 year

[3] With the development of RMB internationalization, r could be different. In the case of US dollar, r is measured as the difference between the rate of return on long-term assets (such as US investors earn on foreign direct investment and portfolio investment) and the rate of return on short-term US dollar liquidity.

[4] Because RMB deposits in Hong Kong, China and other offshore RMB markets are basically sourced from the overseas outflows of RMB in trade settlement, we ignore them to avoid a double calculation.

in the form of bank deposits or various financial assets, and that the zero-risk interest rate of RMB in the offshore market was 3%, the seigniorage on these RMB could be CNY36 billion. If the RMB plays a more important role in trade settlements and becomes a more attractive store of value, its seigniorage would be more significant.

Table 6: Seigniorage Revenue of Renminbi, March 2010–June 2013

(CNY billion)

Date	Renminbi Settlements in Cross-Border Transactions	Share of Import Transactions	Share of Net Import Transactions	Seigniorage Revenue
Mar 2010	18.35	0.6	0.2	0.1101
Jun 2010	48.66	0.6	0.2	0.29196
Sep 2010	126.48	0.6	0.2	0.75888
Dec 2010	312.85	0.6	0.2	1.8771
Mar 2011	360.32	0.65	0.3	3.24288
Jun 2011	597.25	0.65	0.3	5.37525
Sep 2011	583.41	0.65	0.3	5.25069
Dec 2011	539.02	0.65	0.3	4.85118
Mar 2012	580.40	0.7	0.4	6.9648
Jun 2012	671.55	0.7	0.4	8.0586
Sep 2012	798.96	0.7	0.4	9.58752
Dec 2012	889.09	0.7	0.4	10.66908
Mar 2013	1,003.92	0.8	0.5	15.0588
Jun 2013	1,046.08	0.8	0.5	15.6912

Source: Authors' calculations

Sixth, RMB internationalization may help the PRC reduce its reliance on the US dollar. The PRC is an emerging market economy with a very large and sometimes volatile export sector, and financial reform and liberalization of its capital accounts is listed on the country's policy agenda. To avoid external shocks and to maintain financial stability, it is reasonable for the PRC to accumulate sufficient foreign exchange reserves for insurance purposes, though it should also seek to avoid excessive holdings. However, because the US dollar is currently the main reserve currency, the PRC may have no choice but to hold US dollars in large amounts, and it is clear that overreliance on US dollar–denominated assets not only offers low returns but also is risky.

Developing countries that have not carried out currency internationalization must hold a large amount of foreign exchange reserves as a safety net against external shocks. Central banks in developing countries cannot be the lenders of last resort for foreign currency, because they have no power to print it. They can play a limited role as quasi lenders of last resort in foreign currency, if they have large foreign reserve holdings. However, even if they do hold massive foreign reserves, they can use only a limited amount of those reserves in the event of a crisis, due to their fear of losing those international reserves (Aizenman, Chinn, and Ito 2008). Therefore, RMB internationalization and the emergence of the RMB as a main reserve currency may help the PRC reduce its demand for foreign exchange reserves and thereafter reduce its reliance on US dollar holdings.

What is more, RMB internationalization can help the PRC prevent large losses in its foreign reserve management. Zhang, Wang, and Hua (2010) constructed three measures of the returns on the PRC's foreign exchange reserves, looking at goods and services, a basket of currencies, and the US dollar. They found that returns on the PRC's foreign exchange reserves held in a basket of currencies or in goods and services were much lower and more volatile than the returns on reserves held in US dollars. The average value of real returns on the PRC's foreign reserves in goods and services was 3.2%, whereas the dollar-denominated return was 5.72%, and both of these were lower than the PRC's benchmark loan rate. The unsatisfactory return on the PRC's current foreign reserves represents a huge welfare loss resulting from overreliance on the US dollar. With the acceleration of RMB internationalization, the PRC not only can reduce its reliance on the US dollar, but also can improve the efficiency of its foreign reserve management.

Seventh, RMB internationalization would improve the PRC's political position in the world and strengthen its influence. As a reserve currency-issuing country, particularly when the RMB becomes a key currency, the PRC could play a more important role in global macroeconomic policy dialogue and coordination. For instance, were the RMB an important global financial asset, the PRC might contribute to world peace by monitoring and freezing the assets of terrorist organizations, if needed.

5. COSTS OF RENMINBI INTERNATIONALIZATION

The costs of RMB internationalization may be discussed from two perspectives. The first is in terms of the general costs that may accrue to any international currency, whether it is the pound sterling, the yen, the US dollar, or another currency. As long as a national currency plays a role as an international currency, such general costs may always exist. The other perspective relates to transitional costs or challenges, which may exist only during the period in which a national currency is becoming an international currency, particularly if the internationalization happens in an emerging market economy. Such costs or challenges are usually temporary and may disappear after a certain period of time.

5.1 General Costs of Renminbi Internationalization

First, RMB internationalization may complicate the PRC's monetary policy and reduce its effectiveness and independence. This cost, which may be the main challenge for an international currency, is similar to the problem that Mundell (1961) described as the "impossible trinity" of an open economy, meaning that no country can simultaneously reach the policy goals of free capital movement, exchange rate stability, and independent monetary policy. Normally, a highly internationalized currency must be combined with a convertible capital account. In such a circumstance, the country must forgo its domestically oriented monetary policy if it wants to keep its exchange rate stable.

Some economists argue that the effectiveness and independence of the PRC's monetary policy may not be a big problem at the current stage, because the country still maintains relatively strict capital control. As the RMB becomes a leading international currency, however, the PRC's monetary policy may become less effective at keeping its exchange rate stable. For instance, Aizenman, Chinn, and Ito (2008) argue that with a reduction in the effectiveness and independence of the PRC's monetary policy as the RMB is becoming an international currency, the PRC's position in the impossible trinity will move from its current status to a more extreme point. Similarly, Hai and Yao (2010) indicated that RMB internationalization would not have a significant influence on the effectiveness of PRC monetary policy in the short to medium term. However, with the growing scale of RMB cross-border circulation and enhancement in other currency functions, RMB internationalization might affect the independence of the PRC's monetary policy through endogenous monetary transmission mechanisms.

It is noted that RMB internationalization does not necessarily involve the removal of all restrictions on capital movement. The government of the PRC may continue to impose restrictions on residents' financial transactions in foreign currency instruments. Nevertheless, RMB internationalization will broaden the scope for residents and nonresidents to buy and sell domestic currency instruments, which will limit the ability of the People's Bank of China to influence domestic interest rates and the money supply through open market operations.

Specifically, due to the rapid development of Hong Kong, China, the offshore RMB market, and its increasingly close links with financial markets in the mainland PRC (Maziad and Kang 2012), the People's Bank of China could find it more difficult to control monetary aggregates and maintain its autonomy in setting domestic interest rates. To some extent, the Hong Kong, China offshore RMB market is a pool of hot money. At any point it could present a shock to the mainland PRC's monetary policy.

Second, RMB internationalization could similarly reduce the autonomy of exchange rate policy. As the RMB becomes an international reserve currency, it could accordingly become an anchor currency for other countries and thus the exchange rate of the RMB against that currency would lose its flexibility. Without this exchange rate flexibility, the PRC could lose its macroeconomic flexibility and trade competitiveness. Over the past decades, for example, the United States has often suffered from such exchange rate inflexibility, particularly from its inability to devalue the dollar (Bergston 1975).

Third, should the RMB become a key international currency, the PRC would bear more responsibility in the rest of the world. It is widely recognized that the macroeconomic policies of a reserve currency-issuing country often have significant spillover effects to the rest of the world. In addition, a key reserve currency-issuing country is responsible for keeping the international financial and monetary system in order. Among others, it should play the role of being a lender of last resort, meaning that it will have some responsibility to provide liquidity support during periods of global financial stress, even though such support may have an adverse effect on its domestic economy.

Therefore, any reserve currency-issuing country must be very careful about its policies. Although we should not forget the notion made famous by one US policy maker that "the dollar is our currency, but your problem," it is more important to remember that any persistent misuse of macroeconomic policies will lead to a significant depreciation of a currency, and sooner or later a country will lose its currency privilege. Under the multipolar reserve currency system, such a risk could be much greater than in other situations.

5.2 Transitional Risks of Renminbi Internationalization

First, RMB internationalization may increase the probability of asset bubbles and financial instability. This challenge could be regarded as a transitional cost. Over the past four years, the scale of RMB circulating beyond the borders of the PRC has increased very rapidly. Except for RMB remaining in Hong Kong, China, as offshore currency, most of these RMB return to the PRC through the export of goods and services from the PRC or through foreign direct investment and other security investment in the PRC, such as RMB-denominated qualified foreign institutional investment. At present, due to capital controls, the purchase of RMB-denominated financial assets is not fully liberalized and is only possible through managed channels. However, should capital accounts become more convertible, the PRC might face increased demand for RMB-denominated assets, especially if the RMB is under pressure from exchange rate appreciation and tight monetary conditions. Given the constrained scale of the PRC market, increased asset demand could cause an asset bubble, and if RMB-denominated assets are widely held domestically and abroad and the holders come to believe that the PRC's asset prices are likely to fall sharply, the PRC could suffer an asset bubble collapse. Such a collapse would likely be accompanied by a great depreciation of RMB or a currency crisis.

The PRC is an emerging market economy, and even if the RMB were not internationalized, the country could experience "boom and bust" cycles if it makes mistakes in its macroeconomic policies and opens its capital accounts in the wrong way. However, RMB internationalization would surely increase the probability of suffering from an asset bubble cycle. Even the US, a developed reserve currency-issuing country with the largest bond market in the world, was unable to avoid such problems, as its subprime mortgage crisis of 2007 and 2008 demonstrated. This crisis illustrates one of the risks of being an international currency. Due to increased demand for dollars as a reserve currency by many emerging market economies at the end of the 1990s and the early 2000s, the long-term interest rate was continuously kept at a historically low level, and the asset bubble, which to a large degree caused the subprime debt crisis, became a big problem during those years.

Second, RMB internationalization may induce exchange rate appreciation, due to nonresidents' demand for RMB-denominated assets, and may depress the PRC's trade competitiveness. The more popular a currency becomes, the more likely it is that a certain degree of appreciation will occur. For domestic consumers, currency appreciation represents a benefit, but for producers and exporters, the effect of RMB appreciation will be negative, because the competitiveness of exports and import-competing industries will be damaged. Reserve-issuing entities such as the European Union, Japan, and the United States all had similar experiences, at least in the early stages of their internationalization (Maziad et al. 2011).

However, there is no evidence that such exchange rate appreciation would exist indefinitely. More likely, the exchange rate would stop appreciating and would begin to depreciate after a certain point, partly as a result of the earlier appreciation. Another interpretation of the depreciation could be the well-known Triffin Dilemma, which states that a reserve currency-issuing country will find it difficult to keep its exchange rate stable or avoid currency depreciation while still satisfying the constantly increasing demand for sufficient liquidity, unless it maintains current account deficits. Because the RMB is just in its beginning stage of internationalization, there is certainly no immediate worry about its depreciation. However, it could be problematic if the currency appreciates too much in a short period because exports are still so important to the PRC's economic growth.

Third, there are some risks related to the offshore RMB market. Due to the capital controls in the PRC, the offshore RMB market in Hong Kong, China has been developing rapidly and actually has played a key role in the present internationalization of the RMB. However, because the RMB exchange rate is under severe management in the mainland PRC whereas it appears fully market-determined in the Hong Kong, China offshore market, the exchange rate difference often becomes a source of arbitrage and speculation. Arbitrage in parallel markets is not always a bad thing, because it can encourage equilibrium. According to Zhang and He (2012), however, because the RMB is under appreciation expectation, the arbitrage on RMB exchange rates between onshore and offshore markets will cause an unbalanced trade settlement structure—RMB settlement would be used more for imports but less for exports (Maziad et al. 2011). Eventually, this would result in a greater accumulation of foreign exchange reserves in the PRC.

Moreover, the offshore RMB market could become a conduit for speculative attack, as Thailand's hard experience during the Asian financial crisis in 1997 demonstrated. In that case, the Thai baht's offshore center played a significant role in the speculative attack, because foreign speculators were able to easily obtain Thai baht, which they then sold short within a very short period. Massive short selling of the baht eventually triggered the financial crisis on 2 July 1997.

6. POLICY CHOICES FOR A SUSTAINABLE PROCESS OF RENMINBI INTERNATIONALIZATION

Although RMB internationalization has made rapid progress over the past 4 years, it is still in an early stage. A research team from Renmin University created an index to identify the extent of currency internationalization. According their calculations, by end of 2011, the RMB's internationalization index was only 0.45, whereas the index of the US dollar was 54.18, the euro was 24.86, the yen was 4.56, and the pound sterling was 3.87 (Renmin University of China Institute of International Currency 2012). Similarly, the International Monetary Fund indicated that the international currency status of the RMB remains very low—in some respects even lower than some emerging market economies (Maziad et al. 2011)

The internationalization of the RMB and its emergence as a leading international currency will take time—perhaps a decade or even longer. The time required will largely be determined by the PRC's future economic, trade, and financial situation. Scale, stability, and liquidity will be the other main determinants (Eichengreen 2013). Although RMB internationalization is a market-driven process, successfully building up the required preconditions would certainly help shorten the time required.

An analysis of the benefits and costs of RMB internationalization are summarized in Table 7. The question is how we should judge the overall economic consequence of RMB internationalization. For a few reasons, it is fair to speculate that the benefits of RMB internationalization should surpass its costs, particularly in the long run. First, most of the benefits elaborated here, such as reduced exchange rate risks, development of the financial sector, and increased economic openness to the rest of the world, are related to the real economy and could be more significant if the RMB becomes a leading international currency. Second, although the costs should not be ignored, most of these costs could be alleviated by some appropriate policy mix. For instance, a more flexible exchange rate regime and/or optimal capital account management may increase the independence of monetary policies. Third, transitional costs will be reduced with the improvement of RMB internationalization. The current limited variation in the RMB's exchange rate against the US dollar and the early stage of development of the financial market are probably the main factors that explain the concern about the potential destabilizing effect of the external demand for the RMB. However, increased exchange rate flexibility and progress in financial sector reform and development should help increase the domestic economy's resilience to external shocks over time and reduce the transitional cost of RMB internationalization. Finally, the history of the US dollar and other leading international currencies has shown that it is not a bad decision or a wrong choice to allow a currency to be internationalized. Therefore, the related policy suggestions should focus on how to deal with the transitional cost and sustain the lasting gains.

Table 7: Benefits and Costs of the Renminbi as an International Currency

Benefits		Reduces exchange risk
		Promotes financial development, thus benefiting the PRC's economic transformation growth model
		Allows PRC firms and financial institutions to borrow in renminbi, which may have lower cost
		Assists the overseas expansion of PRC firms and financial institutions
		Earns international seigniorage
		Helps the PRC reduce its reliance on US dollars
		Improves the PRC's political position in the world
Costs	**General Costs**	Complicates the PRC's monetary policy and reduces its effectiveness and independence
		Reduces the autonomy of the PRC's exchange rate policy
		Increases responsibility to the rest of the world in terms of policy spillover
	Transitional Risks	Increases the probability of asset bubbles and financial instability
		Induces exchange rate appreciation and reduces the PRC's trade competitiveness
		More risks linked to the offshore renminbi market, which may transfer back to the mainland

PRC = People's Republic of China.

Source: Authors' summary

First, for a smooth and sustainable RMB internationalization, it is important that the PRC maintain strong and sustainable growth in the coming decades. Economic size is probably the most important precondition for the RMB becoming a leading international currency. Although the PRC has become the second-largest economy in the world, it is still a developing country, with a per capita annual income of around $5,000. After maintaining nearly 30 years of high growth, the present increase in labor costs, income disparity, environmental deterioration, and other social problems as well as a declining comparative trade advantage increasingly raise concerns about whether the PRC will soon step into the "middle-income trap" (Asian Development Bank and Peking University 2012). If it should do so, the PRC may fail to maintain its steady economic growth in the coming years.

To avoid this middle-income trap, the PRC should accelerate technology innovation and industrial upgrading, deepen its market-oriented economic reform to improve economic efficiency after the development strategy gradually switches to domestic market, build up and improve the social security network to deal with the income disparity problem, and implement political reform to create a more transparent and democratic society.

Second, although the PRC is moving toward a more domestic-oriented economic structure, maintaining a competitive trade sector and a leading role in global trade is still extremely important. In order to reach this goal, the PRC should improve its capacity for technology innovation, build up new trade advantages, broaden its trade network, and further enlarge its share of global trade. It is important to have more export settlement in RMB, so as to alleviate the imbalanced trade structure.

Keeping the RMB exchange rate stable is very important for RMB internationalization. Significant appreciation in a short period may encourage more import settlement in RMB and rapid accumulation of RMB deposits in Hong Kong, China, as reflected in the rapid development of RMB internationalization over the past 4 years. However, if such appreciation goes on continuously, the PRC's current account could be negatively affected—the RMB's position might weaken, and the trend toward RMB internationalization might reverse. Of course, keeping the RMB exchange rate stable does not mean that the PRC should stop its reform of the exchange rate regime. Instead, the PRC should maintain a balanced external economic position, avoiding both a significant balance of payment surplus as well as deficits.

Third, if the RMB is to be a reliable and convenient store of value, it is extremely important for the PRC to accelerate its domestic financial reform, especially the building up of a highly liquid bond market, and gradually push forward the liberalization of capital accounts.

Economic size does matter for RMB internationalization, but it is not a sufficient precondition, as the precedent history of the US dollar indicates. Although the US surpassed the United Kingdom in economic size in the mid-1870s and was twice its size by 1914, the US dollar only surpassed the pound sterling in the mid-1920s. The critical incident that enabled the dollar to surpass the pound was the creation of the Federal Reserve Bank and followed the rapid development of trade acceptance markets (Eichengreen 2009).

Although the PRC created its central bank in the early 1980s and has been trying to build up a modern financial sector, its financial market is still under development, with limited scale and openness. According to statistics from the Bank for International Settlements and the People's Bank of China, the PRC's share of the global financial market is very small, although its stock market represents roughly 10% of the world market. For instance, the foreign exchange turnover in RMB was only about 0.9% of total world turnover in 2010, and cross-border bonds and notes denominated in RMB represented only about 0.16% of world cross-border bonds and notes in 2011.

The PRC has sped up its financial reform since last year. The People's Bank of China made significant progress on the liberalization of interest rates in 2012, increasing the restrictive deposit rate ceiling by 10% and fully removing controls on the interest rates on loans. Meanwhile, various measures have promoted the development of capital markets, particularly the bond markets, to change the indirect finance-dominant and bank loan-dominant structure.

The PRC also is going to liberalize its capital account, although at a more cautious pace. After nearly 10 years of effort, the PRC has already removed many restrictions on its capital account. According to the International Monetary Fund (2012), the PRC has fully or partly liberalized 34 of 40 items related to capital account restrictions, or 85% of the total. Specifically, since 2010 the PRC has launched several liberalization measures directly linked to RMB internationalization, including introducing RMB-denominated qualified foreign institutional investment; allowing foreign central banks and other qualified institutions to invest in its domestic bond markets; and allowing Hong Kong, China offshore banks to lend RMB to the firms in the Qianhai special pilot areas. The restricted six items, or 15% of the total, mainly relate to the issuance of money market instruments, collective investment instruments, and financial derivatives.

There is some evidence that the PRC will continue to liberalize its capital account. However, it is not necessarily the case that there will be no progress on RMB internationalization until the PRC has fully liberalized its capital account. The rapid development of the Hong Kong, China offshore RMB market over the past years has shown that RMB internationalization could make much progress even if the PRC partially retains capital control. In fact, the eurodollar market in the 1950s and 1960s provides a very interesting historical precedent. In that case, the US dollar became much more influential as an invoice and settlement currency through the offshore market, given that the US domestic financial market retained many restrictions, including controls on cross-border capital movement.

There has been a consensus that external financial liberalization should be the last step of economic liberalization in a typical emerging market economy (McKinnon 1991). Because the PRC's domestic financial reform is still underway, financial supervision is not very adequate, and the exchange rate regime still lacks flexibility. Any big push for capital account liberalization could present significant risks to the PRC's economic and financial system and economic growth. In the case of a crisis, the process of RMB internationalization could be stopped or even reversed.

Fourth, the PRC needs to reform its exchange rate as soon as possible in order to better address the speculation between onshore and offshore markets. Given that full liberalization of the capital account may take time, the offshore RMB markets in Hong Kong, China; London; Singapore; and perhaps other international financial centers will likely continue to play an important role in the coming years. If the RMB exchange rate continues to be strictly managed with very limited flexibility, the difference between onshore and offshore markets may well remain in a constant state of arbitrage. When the RMB is under pressure of appreciation, arbitrageurs may try to use permitted capital account or disguised trade channels to make RMB accumulate in offshore markets. Likewise, when the RMB is under pressure of depreciation, arbitrageurs may try to make RMB accumulate in the offshore market. These kinds of speculation may cause an abnormal fluctuation in demand for RMB and therefore affect the effectiveness of the PRC's monetary policies. In extreme situations, as with Thailand's experience in 1997, it may become a source of speculative attack or even trigger a financial crisis. Increasing the flexibility of the RMB exchange rate regime could be the best way to abolish speculation between onshore and offshore markets. In addition, it is very important to the further liberalization of the capital account and therefore crucial for RMB internationalization.

Finally, strengthening global and regional financial cooperation may help create a good environment for RMB internationalization. RMB internationalization is a market-driven process and is basically a by-product of the PRC's steady economic growth and continuous opening up to the rest of the world. However, this does not mean that the government plays no role in the process.

The US dollar's early experiences show that a government can significantly promote its currency as a key international currency. In addition to the crucial influence of the creation of the Federal Reserve Bank in 1914 (Eichengreen 2009), the Bretton Woods system, which was undoubtedly driven by the US government, represented another important milestone in the dollar becoming the dominant international currency. According to the International Monetary Fund agreement, each country was requested to peg its currency to the US dollar. Through this institutional arrangement, the US dollar received an advantageous chance to become an official reserve currency.

The PRC should play a more important role in the G20 and other international macroeconomic coordination processes. In particular, the PRC should continue to actively push forward the reform of the international monetary system and work for a more representative and democratic international financial architecture. It would be meaningful to the PRC to have the RMB become a special drawing right basket currency in 2014. By this arrangement, the RMB would have an increased chance to become an important reserve currency.

The PRC also should actively promote Asian monetary and financial integration. Given that Asian countries, particularly ASEAN countries, have increasingly close economic and financial relations with the PRC, it would be beneficial for both sides to push forward monetary integration. In fact, the RMB could become a nominal anchor for most of the Asian economies. As more and more currency swap agreements, intraregional trade, and investments are denominated in RMB, it would be helpful for Asian countries to keep their currencies pegged or partially pegged to the RMB, and to eventually make the RMB one of their main reserve currencies.

7. CONCLUSION

Although it is developing very quickly, RMB internationalization is at an early stage, with very limited scale. Therefore, it might be too early for a comprehensive evaluation of its economic consequences, either nationally or globally. Despite increasing recognition that the RMB may eventually become a key global currency, several important questions remain to be answered. For instance, what are the benefits and costs of the RMB becoming an international currency? What are the key preconditions for it to become a reserve currency? And can the ongoing trend continue if the PRC does not immediately remove all of its capital controls?

This paper has tried to offer a comprehensive analysis of the pros and cons of RMB internationalization. One benefit is that by using the RMB as an invoicing and settlement currency, PRC firms may well reduce the exchange risks of international trade and investment, thereby reducing transaction costs. Second, RMB internationalization would be accompanied by a larger and more sophisticated financial sector in the PRC and would benefit the PRC’s transformative economic growth model. Our empirical evidence suggests that when controlling for other economic factors, currency internationalization will help the development of the domestic financial market; this is applicable not only globally but also in the PRC. Third, RMB internationalization would allow PRC firms and financial institutions to borrow in RMB, which may cost less. Fourth, internationalization would benefit the overseas expansion of PRC firms and financial institutions. Fifth, RMB internationalization would enable PRC monetary authorities to collect seigniorage from the rest of the world. As long as the RMB plays a more important role in trade settlements and becomes a more attractive store of value, its seigniorage will be more significant. Sixth, RMB internationalization may help the PRC reduce its reliance on the US dollar and reduce the welfare loss caused by the low returns on foreign reserves. Finally, internationalization would improve the PRC’s political position in the world and strengthen its influence.

On the other hand, RMB internationalization includes general costs, which are permanent, and transitional risks, which are usually temporary and may disappear after a certain period of time. The general cost is that RMB internationalization may reduce the effectiveness and independence of the PRC’s monetary policy and the autonomy of its exchange rate policy. There also are some transitional risks during the process of

RMB internationalization. For instance, it may increase the probability of asset bubbles and financial instability, and it could induce exchange rate appreciation and depress the PRC's trade competitiveness. However, these transitional risks would be eliminated if proper policy responses were undertaken.

In general, comparison of the benefits and costs of RMB internationalization indicates that the pros overweigh the cons. In order to accomplish RMB internationalization smoothly and sustainably, it is important that the PRC maintain strong and sustainable growth and a competitive trade sector in the coming decades. Second, it is vital to accelerate domestic financial reforms, though this should be done in a cautious manner, especially in the case of capital account liberalization. Fourth, the PRC should reform its RMB exchange rate and reduce speculation between onshore and offshore RMB markets. Finally, strengthening global and regional financial cooperation may foster a good environment for RMB internationalization.

RMB internationalization began in 2009 and is still at a preliminary stage, so it is difficult to conduct solid empirical studies. However, with the development and acceleration of RMB internationalization, there will be more and more interesting aspects to study. Our next research priorities will be to focus on a specific benefit or cost of RMB internationalization, with more convincing evidence; to find the key preconditions for the RMB to become an international currency; and to explore the obstacles to RMB internationalization and how to deal with the transitional risks during the process.

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