A Study of the Internationalization of the Chinese Renminbi

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Abstract

Since 2009, the People's Bank of China has focused on the liberalization of trade and investment, establishing a policy framework to facilitate international use of renminbi. On October 1, 2016, the RMB was formally included in the SDR currency basket of the International Monetary Fund. This is an important milestone in the process of RMB internationalization. However, over the past two years, the global use of renminbi as a payment currency has declined. Fitch Ratings suggests that China’s policy of restricting capital outflows and global concerns about the devaluation of renminbi impede the internationalization of the currency in the short term. From the end of last year 2017, things have changed. The cross-border use of renminbi has been expanded, and new progress has been made in the internationalization of renminbi.

There are several factors that promote renminbi internationalization in the long term. The “One Belt and One Road” initiative suggests global participants also cooperates in the increased international use of RMB. The Renminbi Cross-Border Payment System (CIPS) promoted the opening of China's capital market and brought more opportunities for RMB product innovation in the global markets. Hong Kong RMB offshore financial center continues to develop and serve as an intermediary for RMB to go to globe. According to SWIFT, 49.4% of renminbi payment transfers through Hong Kong. And Chinese financial technology has playing a role promoting renminbi internationalization.

As an important strategy in the new era, renminbi internationalization will be confronted with various risks and challenges. The aim of this thesis is to study the potential risks during the RMB internationalization. The analysis will be based on an empirical study of the development of RMB internationalization as well as development in exchange rate regime and liberalization of capital account. The research period is from 2009 to 2018, focusing on the reforms in the past three years. Moreover, the thesis encompasses a description of historical experience of Japanese yen. Through the historical approach, the thesis finds out the reason of failure of yen internationalization.

Through theoretical research and empirical analysis, article suggests that there are four main challenges RMB may face in the future. It includes: the autonomy of monetary policy, currency speculation attempts, currency mismatch and economic instability. These are important obstacles of RMB internationalization. Finally, thesis puts forward risk management concept and policy advice according to the conclusion of the above analysis.
Key words: RMB internationalization, monetary policy, currency substitution; economic instability, risks assessment

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Key Abbreviations

ASEAN	Association of Southeast Asian Nations
BoP	Balance of Payments
BIS	Bank for International Settlements
CA	Current Account
CFETS	China Foreign Exchange Trade System
CIPS	Cross-border Inter-bank Payment System
CNY	The Chinese Renminbi
COFER	Currency Composition of Official Foreign Exchange Reserves
FA	Financial Account
HKMA	Hong Kong Monetary Authority
IMF	International Monetary Fund
OFC	offshore financial centre
PBC	People's Bank of China
RMB	The Chinese Renminbi
RQFII	Renminbi Qualified Foreign Institutional Investor
SAFE	State Administration of Foreign Exchange
SDR	Special Drawing Right
SAR	Special Administrative Region
SWIFT	Society for Worldwide Interbank Financial Telecommunication
USD	The American Dollar
WTO	World Trade Organization
XCS	Cross Currency Swap

1 Background

This chapter aims to present the background of China's economic development and its strategy of renminbi internationalization. Then it illustrates the problem formulation and its delimitations. In the end, some terminologies regarding the internationalization of currency will be explained.

1.1 Introduction

The mortgage crisis erupted in in the United States in 2008, and the consequent European debt crisis and rising global financial risks, are closely linked to the current dollar-dominated monetary system. The serious consequences of the crisis have made the international community aware that the reform the world monetary system must take place in order to reduce excessive dependence on the U.S. dollar.

In recent years, China's economy has maintained a high pace development and the participation in the world economy has continued to increase. But Renminbi, Chinese currency, has not played a significant role in the international monetary system. China's economy scale has surpassed Japan in 2010 and the scale of foreign trade exceeded that of the United States in 2013. So far, China is the country with the largest foreign trade scale. However, by February 2015, the use of Renminbi only accounted for 1.81% of international payments, ranking seventh in the world.(Swift) [1]Many governments and institutions have called for the renminbi to play a more important role in the world currency system, and to become a freely convertible currency.

In 2009, Chinese government has made renminbi internationalization an important national strategy for development. And the strategy has been taken into action with the RMB settlement project for cross-border trade in 2009. Since then, the use of RMB in cross-border trade between China and neighboring countries has grown rapidly, which lays a sound foundation for the internationalization of the money. In the next few years, currency exchanges agreements, offshore RMB markets and other projects have also been designed and launched, accelerating the process of internationalization of Chinese currency. In December 2015, Renminbi was included in the SDR basket by the International Monetary Fund and became the fifth currency

[1] SWIFT is a global member-owned cooperative and the world's leading provider of secure financial messaging services. Available at https://www.swift.com/

in the basket, together with the US dollar, the euro, the British pound, and the Japanese yen. It marks the international recognition of the Chinese currency. In the future, with the implementation of the One belt, One road strategy and the construction of the multilateral banks, the use of Renminbi in foreign trade settlement is expected to expand.

However, the internationalization of the renminbi brings about not only gains but also risks. From the historical perspective of the US dollar, the euro, and the yen, it can be found that currency internationalization may put country's financial system at great risk. Therefore, it is necessary to carry out a detailed analysis of the risks involved in the process of RMB internationalization, and to control risks in a timely manner. This is of great significance to the stability of the financial system.

1.2 Problem Formulation

Based on the above the author finds it interesting to investigate the process of the internationalization of the Chinese currency, renminbi. Therefore, the main problem statement of this thesis is proposed as "What are the potential risks in the process of the internationalization of Renminbi?"

In order to provide an answer to the main problem statement, the following questions may be researched throughout the thesis:

- What factors influence the choice of the currency in the international payment and national reserve, according to the research literature?
- In what way are economic policies, balance of payments and the national reserve affected by the international use of the currency?
- What are the underlying determinants for the risks in the process of currency internationalization?
- How to control the potential risks in the process of the internationalization of Renminbi?

1.4 Terminology

1.4.1 Currency internationalization

Chetty, V. K. (1969) put forward the concept of "currency internationalization" for the first time: that is, a currency that break through its own national territorial restrictions and is widely accepted by the international community to play a part or all of its monetary functions. In essence, currency internationalization is a process of currency substitution. It means that the currency of the issuing country circulates overseas and to some extent replace the local currency and exercise monetary functions.

Cohen, B. J. (1971) then defines currency internationalization from monetary functions. He believes along with the development of the country's foreign trade, the currency of a country floats out the country and is traded overseas. In this sense, the national currency evolved to the regional currency and then finally to the world currency. Hartmann, P. (1998) developed Cohen's theory and categorized the functions of the world currency as a medium of exchange, as a unit of account and as a store of value.

According to the International Monetary Fund (IMF), currency internationalization refers to a process which a nation's currency can break through the national boundaries, and be freely exchanged, traded, and circulated throughout the world, eventually becoming a world currency. The international currency plays an important role in the world market. The country to which the international currency belongs to can obtain certain economic and political interests. For example, the country owning the international currency may receive a large number of coinage taxes.

Mundell, R. A.(2003) proposed that the success of currency internationalization largely depends on the confidence of foreign entities in the stability of the value of the currency. This, in turn, relies on a stable monetary policy, a large scale of currency transactions and economic strengths of the currency issuing countries.

Therefore, the process of currency internalization is in the fact a form of currency competition, in which a country's currency performs monetary functions outside the issuing country.

1.3 Delimitations

As stated above, the main purpose of this thesis is to determine the potential risks during the internationalization of renminbi. To provide a thorough answer to this question, a descriptive analysis of the current states of the internationalization of renminbi is given. And a historical analysis of Japanese yen's internationalization was also conducted, with a focus on the risks which contributes to its failure. Apart from research of the phenomenon, thesis also include qualitative analysis of the underlying determinants of the potential risks of the internationalization of renminbi.

As for the research period, 2018 is not included. It is mainly for the reason that when author writing this thesis, the data of relevant economic variables is not complete published yet. So the policies issued in 2018 are not taken into effect. Meanwhile, in the sections of the internationalization of Japanese yen, data from 2017 is also not included, for the economic fundamentals in 2017 is not revealed. However, some statistics such as exchange rate and foreign reserve in 2018 can be obtained, as it published on a regular manner in the database. Due to the fact that thesis is mainly a review of what renminbi comes so far and a prediction based on the facts and historical lessons, so the result of the analysis can only reflect the economic variations before mid-2018. And the statistics cannot be obtained throughout the research period, so every section may contain different research period and it will be explained in each part.

The description of the current situation of the internationalization of renminbi are only composed of cross-border trade RMB settlement, offshore renminbi (CNH), RMB bilateral swap agreements and RMB as a reserve currency. But as we are known, the process consists of other perspective such as RMB as investment currency. As one of the effort to attract foreign investors to invest in RMB dominated capital market, qualified foreign institutional investor (QFII regulation) [2]were invented. In terms of Hong Kong offshore RMB market, dim sum bonds and offshore RMB bond market are awaiting to be presented. So as Shanghai Free Trade Zone

[2] Once licensed, foreign investors are permitted to buy RMB-denominated “A shares" in China's mainland Shanghai and Shenzhen stock exchanges.

(SFTZ) in 2014. Because of the limited lengths and time of the thesis, a lot of aspects of RMB are still waiting to be further studied.

The analysis in Chapter 5 contains the policy issues, currency speculation, currency mismatch and financial instability. This leaves out other possible risks such as currency account imbalances, obstructions from other currencies and Triffin Dilemma, etc. The thesis limits the risks to the above factors, mainly because that these risks are highly possible to happen. And once occurs, they may impose huge damage to Chinese economy. Some of the risks are not merely possible but are going on problems. They are risks deserving great attention in the future.

Due to the limited time of the thesis, only qualitative research is conducted. The author studies the internationalization of RMB mainly from the theory, literature review and published statistics. From other studies, we can find quantitative research is also an effective approach to study the problem, especially when aiming to find out the influencing factors of the internationalization of the currency. When analyzing the potential risks, author recognizes that it is also a reliable approach to access each economic variable. But this thesis only includes qualitative approach, for the author find it easy to apply the theory to fully analyze the problem.

2 Methodology

This chapter contains a description of data collected in this thesis and the analyzing approach of it. Besides that, the structure of the thesis will be briefly introduced in this chapter.

2.1 Statistics

The statistics used in the thesis is collected through variable sources. Most of the data are from official website of the government. The reason of gathering data from governmental websites is that the reliability of the statistics is without doubt. Besides from governments, the author also obtained data from international organizations, including World Bank and International Monetary Fund(IMF). These are well-reputed world organizations whose data is highly reliable.

The theories explained in chapter three contains academic articles and published economic book. And it can be accessed through two popular database—-CNKI and

JSTOR[3].Moreover, the relevant information of Chinese policies is derived from public announcements on the official websites. It includes People's Bank of China(PBC), State Administration of Foreign Exchange (SAFE), National Bureau of Statistics(NBS) and Ministry of Commerce. Their annual report consists of statistics of great importance and the author find it inspiring when writing the thesis. Besides governmental websites, the author also used data in official database such as China's custom information online etc. to gather statistics such as import and export trade volume.

In the section of offshore RMB financial center, the economic statistics of Hong Kong is collected from the monthly statistical bulletin from Hong Kong Monetary Authority(HKMA)[4] and its annual report of renminbi internationalization. And in the analysis of renminbi as a store of value, the data of foreign exchange reserve of each country is offered by COFER, which is a database managed by the Statistics Department of IMF. The economic statistics of Chinese economy is also used from CEIC, which is a database providing macroeconomic data for business decisions and economic analysis. It consists a great volume of data and is of high quality.

The information used in the analysis of Japanese yen in chapter four is mainly collected from RIETI[5](research institute of economy, trade and industry database). It is a policy think tank established in a non-civil way to provides analytical foundation for introducing new policies and abolishing inefficient policies. The institute is highly regarded in Japan and its sources of data is clear and reliable. The other data sources

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[3] The access to the database is provided both by UIR and Aalborg University.

[4] The Hong Kong Monetary Authority (HKMA) is the government authority in Hong Kong responsible for maintaining monetary and banking stability.

[5] It can be access at https://www.rieti.go.jp/en/

consist of Japanese ministry of finance[6], bank of Japan, Japan foreign trade council[7] and e-Stat(Statistics of Japan)[8].

In the analysis of risks during the process of Renminbi internationalization, WIND database is of great use of exploring the real-time data as well as historical data. The wind financial database is a powerful platform for the author to gather information on Renminbi exchange rate, bonds and Chinese economy. It is a website frequently used in research reports and academic paper. Thus, the author is also convinced of the reliability of its statistics. Moreover, Swift also provides real-time financial information important to academic analysis.

Significantly, there has been no official statistics of capital flight. The author can only give an inaccurate estimate of the scale of capital outflow. The SAFE's documents clearly stated that "*according to the difficulty of data collection, some balance of payments transactions may not be collected.... Illegal activities that violate laws or regulations have not been calculated accordingly*." In other words, China has no official statistics on capital flight. The monitoring report of China's cross-border capital flows by SAFE only released till 2014.In this case, we can only analyze the international balance sheet to measure its potential size. Since the capital flow is a subject worth of analysis in this thesis, the author has tried to find and calculate the data from the 2017 report of international balance of payment released in 2018. So does the annual report of SAFE. It is only published till March 2017. So the analysis can only be conducted in the period of 2009 and 2016.

In general, all the statistics used in this thesis are from reliable sources, thus laid a valid foundation for the following analysis. At the same time, the author has hold a critical perspective throughout the thesis, so the author tried to use data from different sources and not merely collecting data from official websites.

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6 Chronology of the Internationalization of the Yen. Available at https://www.mof.go.jp/english/about_mof/councils/customs_foreign_exchange/e1b064c1.htm

7 Shosha Handbook--Foreign Trade 2017. Available at http://www.jftc.or.jp/english/reports.htm

8 e-Stat is a portal site for Japanese Government Statistics which provide official statistics of Japan.

2.2 Structure of the thesis

This thesis mainly studies the potential risks of the internationalization of renminbi. The thesis combines theoretical study with empirical research. And qualitative research-based method is mainly used here, including comparative study and case study in order to provide a qualified answer to the problem. The theory parts includes four theories relevant to the potential risks of RMB internationalization. Then through academic summarize and logical derivation, the author put forward the theoretic hypotheses. The empirical studies contain the study of internationalization of renminbi and the assessment of its risks.

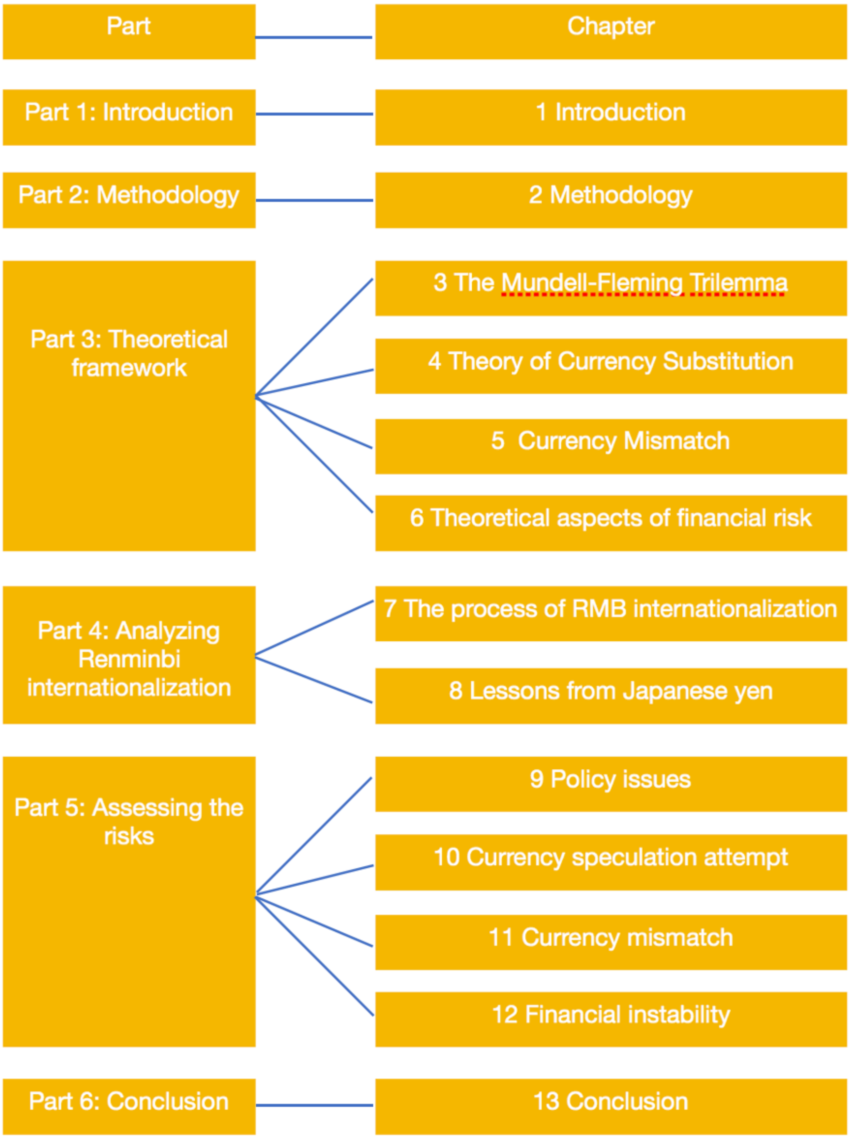
The thesis is composed of six parts shown in figure 2.1.

Part one and Part two are the introduction and methodology of the thesis, which secure a basis of analysis. In this part, problem statement as well as research questions are proposed. Then the author explains the delimitation of the problem and different choices made by the author throughout the thesis.

Part three is a description of theories in relation to the problem formulation. It includes the Mundell-Fleming trilemma, theory of currency substitution, currency mismatch and theory of financial risks. The aim of this part is to find out the potential obstructions during the process of currency internationalization, especially the currency of developing countries and find out factors which influence the choice of the currency in the international payment and national reserve. Thus, answering the first research question.

Part four is an illustration of renminbi internationalization. Through published statistics and literature review, the thesis presents a discussion of the international use of renminbi. It also mentions the heated debate about the exchange rate reform and the liberalization of the capital account. The aim of this part is not only giving a n understanding of the current development of renminbi, but also to provide a comparative view from Japanese yen to find out in what way are economic policies, balance of payments and the national reserve affected by the international use of the currency. Thus, providing answers to the second research question.

Figure 2.1 Structure of the thesis



Part five is an analysis of the possible risks in the process of renminbi internationalization. This part also combines theoretical analysis and empirical studies. Through theories and historical lessons, the author tries to find out the possible barriers and the underlying determinants for the risks. The author tries to give a persuasive answer the problem statement. In the analysis, the author takes an objective position and analyzes its risks on a neutral basis in the hope of obtaining a reliable conclusion.

Part five consists of conclusion and policy proposal. This part only concludes the whole thesis but also answer the question: how to control the potential risks in the process of the internationalization of Renminbi. Judging from current international monetary structure, the author tries to give suggestions on how to arrange renminbi exchange rate system, capital account and the ongoing currency internationalization.

2.3 Challenges and limitations of the project

To study the risks of renminbi internationalization, it is hard to conduct theoretical analysis. Instead of using one approach to establish the theoretical background, the thesis tries to use theories from different aspects. And it is hard to conclude a theory in a single section, so the author only explains the relevant part to the research question.

At the same time, there is problem of appliance of the theory. It is doubtful whether the study of one country's currency can be applied to another one. What this study can do is to give some enlightenment, such as introducing the internationalization of Japanese yen during 1993-2003 and its experience as its government promote the strategy. The author hopes it could shed a light on the internationalization of renminbi.

Difficulties have also been encountered in empirical research. First, the variables of internationalization of renminbi is measured in various ways. And each approach has its own limitations and advantages. It is worth considering which index is the most suitable figure to measure it. Besides that, since most of the data is available in the Wind database, the author did not purchase the Wind database. The author in the end manage to sign in as a client, but the right to export the data is not owned by the client. So, the author has to export the data manually to form the chart of display. The acquisition of data is rather difficult.

In general, in the analysis of data, this paper searches for the latest economic data from various countries and international organizations. The analysis results are up to date and the proposed policies are more in line with current situation.

3 Theoretical Framework of Currency Internationalization

This chapter will introduce four of the economic theories within the area of the internationalization of the currency. These theories found the framework for further analysis.

3.1 The Mundell-Fleming Trilemma

The impossible trinity, also called the Mundell-Fleming trilemma, means that in an open economy, a country cannot achieve the following three goals simultaneously:

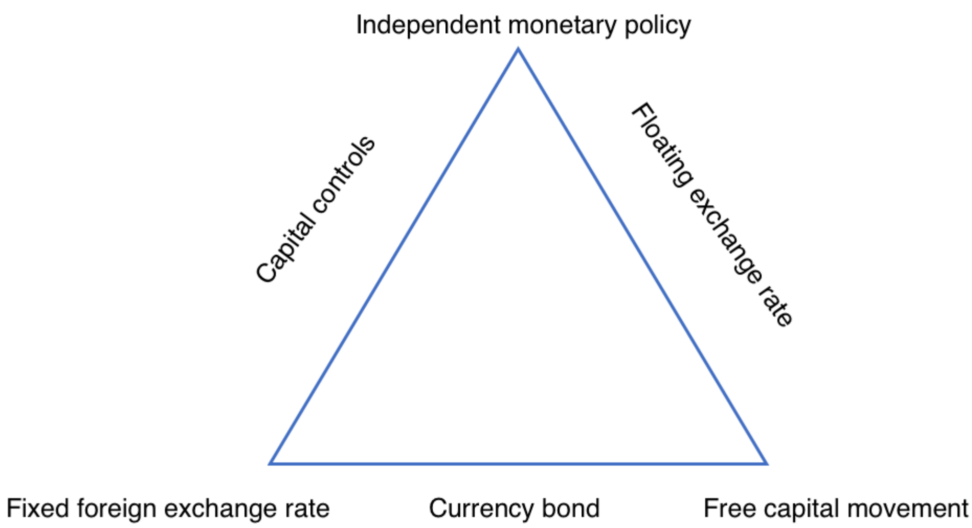
• a fixed foreign exchange rate

• free capital movement (absence of capital controls)

• an independent monetary policy

It implies that a nation can only pursue two of the three goals and the other one has to be abandoned. Independent monetary policy, a fixed exchange rate, and the free flow of capital cannot be achieved at the same time, or they will generate contradicting effects.

Figure 3.1 The impossible trinity



Source: Author's presentation based on Krugman and Obsterfeld (2009)

As can be seen from the figure, three policies cannot be implemented at the same time. But they are all important economic tools for a country. If the free flow of capital is realized, capital will circulate on a global scale, thus the efficiency will be improved. If the monetary policy can be formulated independently, country's central bank will take the initiative in terms of policies making ignore of external disturbances, and effectively regulate the domestic economy. If a fixed exchange rate is achieved, the currency value will be stable in the long term, which can attract foreign investment.

Firstly, to maintain the independence of monetary policy and the liquidity of capital, the country has no choice but to abandon the stability of the exchange rate and implement a floating exchange rate system. Because under the conditions of free capital flow, frequent capital outflows would incur instability to the balance account. If the monetary authorities of the country do not intervene in order to maintain the independence of monetary policy. Then the local currency exchange rate will inevitably fluctuate according to the supply and demand of currency. Although frequent fluctuations in the exchange rate have their disadvantages, the implementation of exchange rate fluctuations does solve the impossible trinity.

Secondly, to maintain the independence of the country's monetary policy and the stability of the exchange rate, at the expense of giving up the mobility of capital and implementing capital controls. Most economically underdeveloped countries tend to this choice. On the one hand, these countries need a relatively stable exchange rate to maintain the stability of the foreign economy. On the other hand, because of their weak supervisory capabilities, they cannot effectively manage free-flowing capital.

Thirdly, to keep the liquidity of the capital and the stability of the exchange rate, it is inevitable to abandon the independence of monetary policy. According to the Mundell-Fleming model, when capital flows freely, in the fixed exchange rate system, any change in domestic monetary policy will be offset by changes in the induced capital flow, and the national currency will lose its autonomy. In other words, under such circumstances, even countries that have participated in currency unions would find it hard to implement independent monetary policies to adjust their domestic economy. It can be seen that in order to achieve free capital flow and exchange rate stability, the domestic economy will pay a huge price for abandoning monetary policy.

At present, China is adopting the second option which is choosing monetary policy independence, implementing exchange rate stability, and abandoning the free flow of capital. However, with the development of internationalization of the renminbi, exchange rate regime and restriction on capital account will also change. It will take a toll on the autonomy of monetary policy.

The selection of the three objectives will have an important impact on the internationalization of RMB. When the country give up the fixed exchange rate regime and let the exchange rate float, the stability of the exchange rate will be in doubt and it will, to a certain extent, affect the confidence of foreign investors in investing in the renminbi; In the same way, in the other two circumstances, the risk of internationalization of the RMB will also be induced through the free flow of capital and monetary policy.

3.2 Theory of Currency Substitution

Chetty (1969) introduced the concept of "currency substitution" for the first time. He discovered the phenomenon of "good money drives out bad" contrary to the Gresham's Law. The theory of "money substitution" was called by the economists "the Gresham's Law II". In the open economy and currency is convertible, when inflation initiates depreciation of the currency, people will naturally choose the money with higher credit, and give up the currency with lower credit, in order to avoid financial losses.

Currency substitution results from the need for alternative currencies, so Keynes further proposed the "Theory of Demand for Money." (2016) Keynes attributed the demand for currency substitution to three motives: transaction motive, precautionary motive, and speculative motive. The transaction motive generates from international trade settlements, international payment delays, etc. The precautionary motive refers to tendency to minimize the risk of exchange rate, inflation rate etc. And the speculative motive means the intention to maximize the profitability of assets and optimize the portfolio.

After that, several researchers proposed different currency substitution models and further studied the impact of currency substitution on monetary policy. Joines, D. H.

(1985) presented that in an open economy, if the opportunity cost of holding a currency raises, the demand for another currency will increase. The transnational flow of the currency will undermine the autonomy of its monetary policy.

McKinnon, R. I. (1985) divided currency substitution in direct currency substitution and indirect currency substitution. Then Rogers, J. H. (1990) states that the expectations of foreign inflation rates will affect the demand for domestic currency and domestic inflation rate. Moreover, even if a small open economy adopts a floating exchange rate determined by market forces, foreign inflation will still influence domestic monetary policy.

To be sure, currency substitution will have an important impact on the nation’s economy. Currency substitution will affect the economy of a country both in the effectiveness of monetary policy and in the stability of the exchange rate. Firstly, in a fixed exchange rate regime, a country’s monetary policy will inevitably be affected by currency substitution. Secondly, when other factors remain unchanged, there is a positive correlation between exchange rate fluctuations between the two currencies and the degree of currency substitution. It will have an adverse effect on the currency convertibility, thus hindering the process of currency internationalization. To realize the internationalization of the renminbi, it is necessary to open up capital account and make renminbi free convertible. This may result in the risk of currency substitution and bring about negative effects on China's financial system and even the country's economy.

3.3 Currency Mismatch

In recent decades, currency crisis in emerging market has attracted the attention of the scholars. Currency mismatch theory was first proposed by Cooper, R. (1971). He analyses the country’s currency structure of debt.

Mishkin, F. S. (1996) used the theory of currency mismatch to study the bank crisis in Mexico. He believed that the gaps in foreign currency denominated debt was an important reason for the crisis. Eichengreen, B.etc (2007) then introduced the concept of "original sin" which measures the degree of currency mismatch in relevant countries. They believed that currency mismatch happens due to underdevelopment of international capital markets and local financial markets. The low status of local currency resulted in the use of foreign currency to repay debt.

Calvo, G. A., & Reinhart, C. M. (2002) put forward the "Fear of Floating" hypothesis: Because developing countries' asset and debt expressed in different currencies, they prefer to adopt fixed exchange rate system to prevent currency mismatch. However, abandoning floating rate system, in turn, intensifies the problem of currency mismatches in these countries. Subsequently, Reinhart, C. M., & Rogoff, K. S. (2009) further proposed the “Debt Intolerance” hypothesis: developing countries are not capable to reasonably manage its foreign debt.

Goldstein, M., & Turner, P. (2004) questioned the “original sin” hypothesis and put forward the “Beyond Original Sin” hypothesis. They define currency mismatch as: "When the net value or net income of an entity is super sensitive to changes in exchange rates, a currency mismatch occurs.” Economic entities use foreign currencies in addition to their local currencies when they engage in international business activities. They believe currency mismatch occurs when entities are easily affected by exchange rate fluctuations and cannot expect the trends. Currency mismatch can initiate financial crisis. Therefore, it is a great threat to the economic stability of emerging markets.

They also assert that the main cause of currency mismatch in emerging markets lies in economic policies. As emerging markets generally adopt fixed exchange rate arrangements, they cannot effectively control the banks' risks of exchange rate. To make things worse, the regulatory system is not well founded, and information is not fully published. Thus, once monetary policy is not well formulated and there are no well-developed hedging instruments, arbitrage will happen due to exchange rate fluctuations. In short, the root cause of currency mismatches in emerging markets can be attributed to the fact that while their economic strength continues to increase, their currency's international position is relatively low.

In short, currency mismatch focus on the risk of exchange rate and study the influence of exchange rate on other economic variables and financial stability. Therefore, this thesis defines the currency mismatch as: in the open economy, in foreign economic relations, economic actors (a country’s households, enterprises financial institutions, government departments, or even the entire country) tend to measure their income and expenses in different currencies—local or foreign currencies. And when their exchange rates change, their income and expenses will be affected.

3.4 Theoretical aspects of financial risk

3.4.1 Definition of financial risk

Generally speaking, risk refers to the potential of gaining or losing something of value coming from uncertainty. It has three meanings: (l) Risk is caused by uncertainty, and there is risk if there is uncertainty; (2) Risk may bring economic losses, it may also bring non-economic losses; (3) Risks only implies the potential of loss rather than the inevitability of loss. Therefore, to a certain extent, risk can be prevented.

Economists have different definitions about financial risks. Crockett, A. (1997)'s theory has been generally accepted by the academic circle. He defines financial stability as the smooth functioning of the institutions and markets that make up the financial system. And he then asserts that financial instability is a situation in which fluctuations in the price of financial assets or in the ability of financial intermediaries to meet their contractual obligations shall impair economic performance. In this thesis, this definition is applied.

Once financial instability is not well managed, it may lead to financial disruptions, which will in turn trigger political disturbances and social crisis, leading to economic stagnation. Therefore, it is to a great significance to maintain financial stability.

3.4.2 Source of financial risk

Monetarists, like Milton Friedman (1963), believe that the financial instability is unlikely to arise or become too severe in the absence of excessive supply of money. The root cause of financial turmoil lies in monetary policy. It is the mistakes of monetary policy that triggers financial risks and then have severe impact on the whole system.

In addition, Dornbusch, R.(1976) developed "exchange rate overshooting hypothesis". He believes that the volatility of price of the financial asset is the basic cause of financial risk and initiates financial crisis. According to the model, when an exogenous variable change, the short-term effect on the exchange rate can be greater than the long-run effect. The fluctuation of exchange rate in floating rate regime and the overshooting of exchange rate will impact the economy. Thus, financial instability arises.

Information economics holds that information asymmetry is the main reason for financial risk. According to Arrow, K. J. (1996), information as signal can described as a kind of negative measure of uncertainty. Due to social division and specialization, it is difficult for the trading partners to have the same understanding about the transaction. Information asymmetry is a common phenomenon in economy. Asymmetric information can lead to adverse selection as well as moral hazard. These two phenomena will reduce the operation efficiency of the financial market and cause financial risks.

3.4.3 Financial contagion

Market disturbances can spread from one country to another. And financial contagion happens both at domestic level and international level. (Kollmann, R., & Malherbe, F.; 2011) "*Fundamental causes of contagion include macroeconomic shocks that have repercussions on an international scale and local shocks transmitted through trade links, competitive devaluations, and financial links.*"(Dornbusch, R.etc; 2000) Dornbusch regards competitive devaluation as a currency war in which one country incurs a serious of currency depreciation to gain competitiveness in the international export market. And such move put pressure on other countries and pushing them to follow the depreciation. The irrational behavior was most likely to happen if both countries have managed exchange rate regime rather than a floating one.

Trades links includes direct links and indirect links. The first one means as financial crisis in country B incurs the reduction of national income, thereby reducing the import demand for goods and services of trading partner—country A, causing the export volume of trading countries to decline. The deterioration of the balance account leads to financial crisis in country A. The transmission mechanism of indirect trade links is: The financial crisis in country A causes the devaluation of the local currency, which reduces the competitiveness of one or more countries that compete with A in the same international market, causing the export volume of the country to decline, which inducing financial crisis.

4 Empirical Study: Renminbi Internationalization

This chapter aims to analyze the development of renminbi internationalization. Moreover, a discussion of the internationalization of Japanese yen will also be included, to determine what is the possible risks facing Chinese RMB.

4.1 The Process of RMB Internationalization

After two years of stagnation, the internationalization of the renminbi has started the journey of recovery. The use of renminbi in cross-border trade settlements have gradually increased, and the renminbi deposits in the offshore market has seen a rebound. Although some observers believe that the internationalization of renminbi has not become a trend yet, international investors have increased their holdings of renminbi assets. The future development of renminbi is highly expected.

The internationalization of renminbi started in 2009, when the government launched a pilot scheme that allowed use of the RMB in settlement of trade with ASEAN member states as well as some cities within China. (Eichengreen, B., & Kawai, M.; 2015). Chinese authorities expect to reshape the international monetary system after the global financial crisis in 2008. It is also accompanied with the need of domestic companies to avoid the risk of exchange rate, especially as to the US dollar. At that time, the international balance of payments of China was in a double surplus. So the government chose the path of "export renminbi of the current account and import currency in the capital account" to implement the strategy of the internationalization of the renminbi. This path turned out to be unsustainable.

The internationalization of renminbi has made rapid progress in the anticipation of appreciation of the currency. However, when the currency was in depreciation, the government suffered a policy goal selection, and the internationalization of renminbi was not the first considerations.

The "8.11" exchange rate reform in 2015 triggered market expectation of depreciation of CNY. After the strengthening of foreign exchange management controls, the outflow of renminbi was once an important channel for avoiding foreign exchange management and realizing capital outflows. In 2016, monetary authorities implemented strict controls of cross-border renminbi transactions and renminbi offshore markets. Since then, renminbi trade settlement, foreign direct investment, and offshore renminbi deposits have all shrunk dramatically, and the internationalization of renminbi has stagnated.

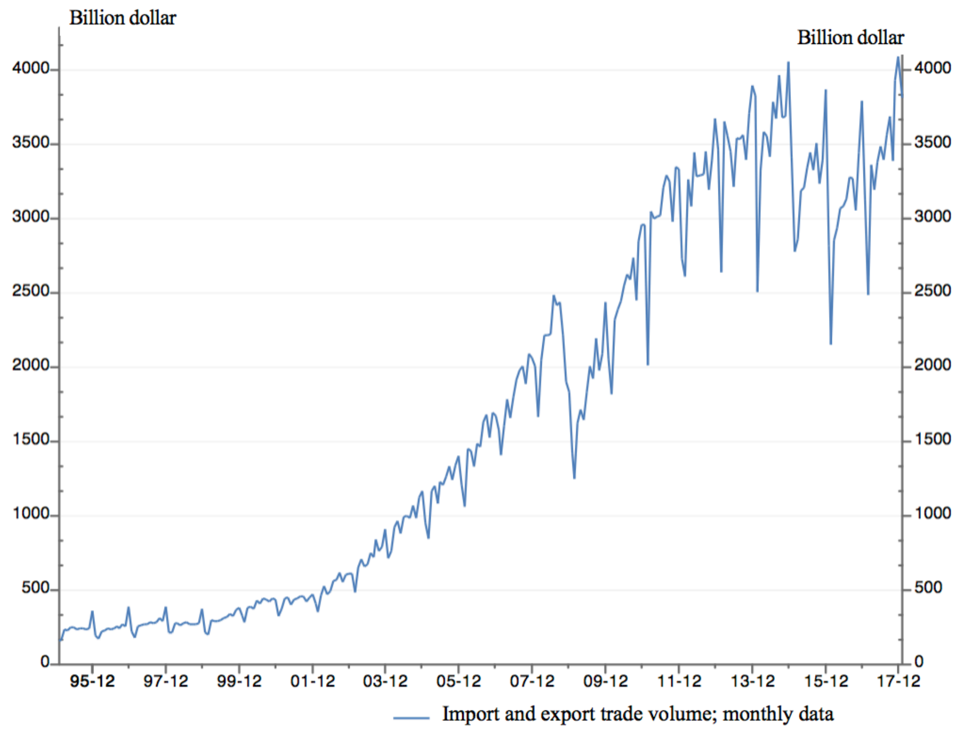
Since the end of last year in 2017, there have been positive changes in the relevant indicators of RMB internationalization. According to the SWIFT data, RMB settlement for cross border trade in global market has seen a rebound in November 2017. At the same time, high-yield offshore renminbi bonds have been issued in Hong Kong for the first time in more than one year. The scale of renminbi deposits in Hong Kong's offshore market have also stopped decline and started to rise. The renaissance of internationalization of renminbi coincided with the continued rise of the exchange rate of the currency. In the past three months, the exchange rate of renminbi against the US dollar has appreciated by nearly 4%. In the case of appreciation, investors are willing to hold renminbi and its relevant assets.

The internationalization of renminbi is a long process, with a lot of obstacles to pass. The reform of exchange rate and the liberalization of the capital account are only two of the constraints of the process. Now the 19th Congress has put great emphasis on the internationalization of the currency. And it seems clear that it will be Chinese government's main policy goal for the next decades to come.

4.1.1 Renminbi Trade Settlement

Over the past 30 years of reform and opening up, China has used its own comparative advantages in the labor force to participate in the international division of labor and has rapidly developed into an important trade power. According to statistics of China's import and export trade, in 2008, the total volume of import and export trade was 2563.25 billion U.S. dollars. By 2016, the total import and export volume had reached 3684.92 billion U.S. dollars, an increase of about 43.8%.(see Figure 4.1)

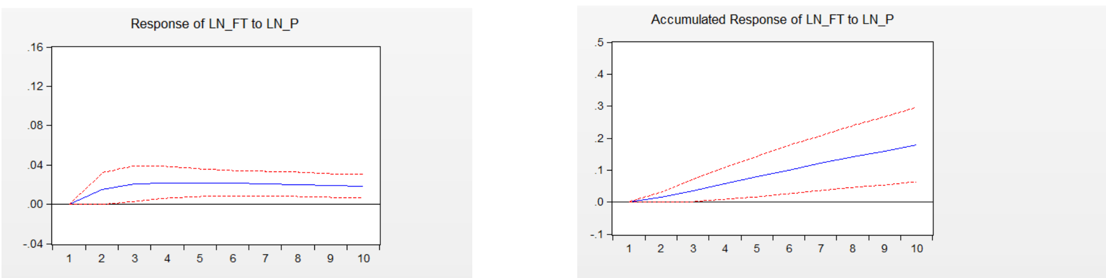
Figure 4.1 Import and export trade volume



Source by: WIND database

China's import and export trade links Chinese economy to the world. It not only provides high-quality products for the world, but also gives opportunities for countries around the world to enter the Chinese market. With the rapid development of China's import and export trade, RMB trade settlement has been strongly supported by Chinese government, and ratio of RMB settlement in cross-border trade has increased rapidly. In 2009, the Chinese government established a pilot city for RMB settlement in cross-border trade, marking the first step of the internationalization of RMB. In 2010, the amount of RMB settlement for cross-border trade was 506.4 billion yuan. As of 2016, the amount has reached 7,639.3 billion yuan.

Figure 4.2 Response and cumulative impulse response of Lnft to lnp

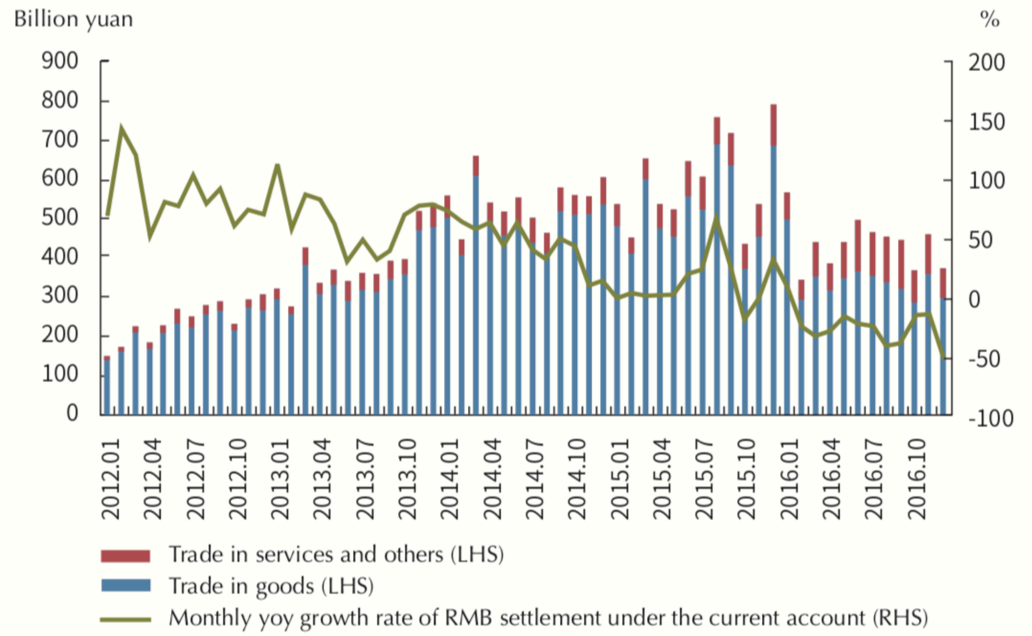


(a) (b)

Source by: author's presentation from previous academic paper

Cross border renminbi settlement achieved a rapid development. It evolved from trade settlement in the border to the pilot city and then within the whole country. The Chinese government has continuously improved domestic policies of RMB settlement, so as to increase the confidence of their trading partners in using RMB as a trade settlement currency or investment currency. Therefore, foreign trade plays an important role in promoting the internationalization of the renminbi. (see Figure 4.2) And their relationship seems to be reciprocal. As China's foreign trade develops steadily, it will promote the internationalization of the renminbi. And the latter will further boost China's foreign trade.

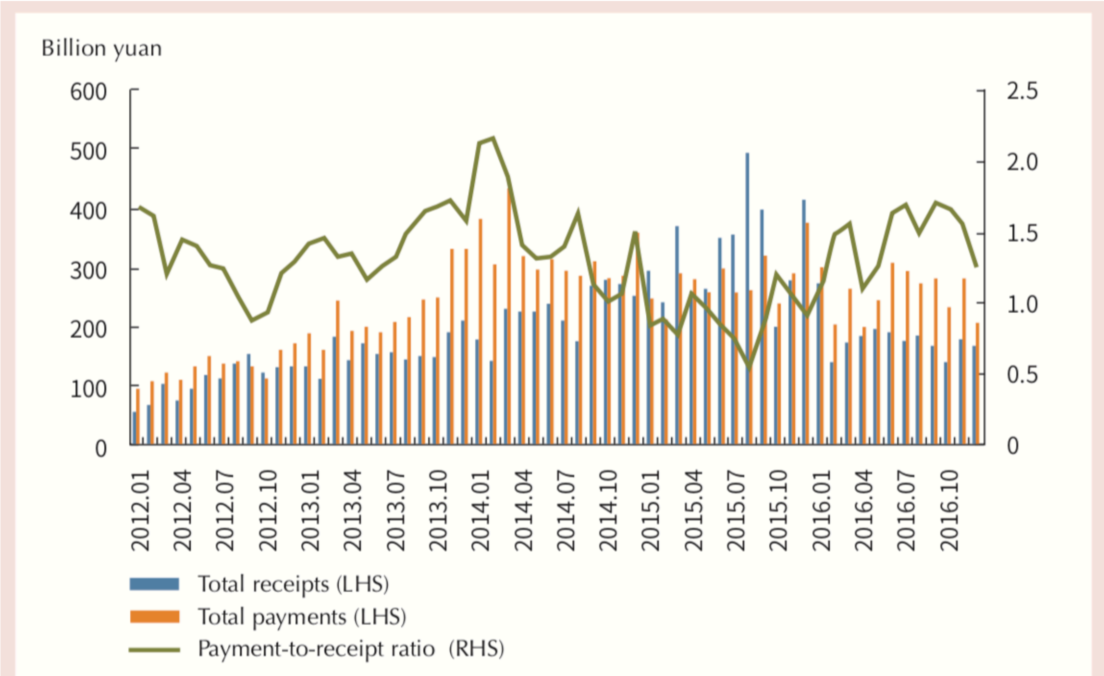
Figure 4.3 Monthly RMB Settlement under the Current Account



Source: PBC.

Cross-border trade mainly includes two major categories: trade in goods and trade in services and others. As shown in Figure 4.3 above, in terms of trade in services and others, this figure was in its highest point in history at the end of the 2013 and early 2014. With a sharp drop in the third quarter of 2014, it then picked up slowly. Although there were significant fluctuations from the end of 2015, it was far less pronounced than the trade in goods.

Figure 4.4 Payment-to-Receipt Amount and Ratio of RMB Settlement under the Current Account



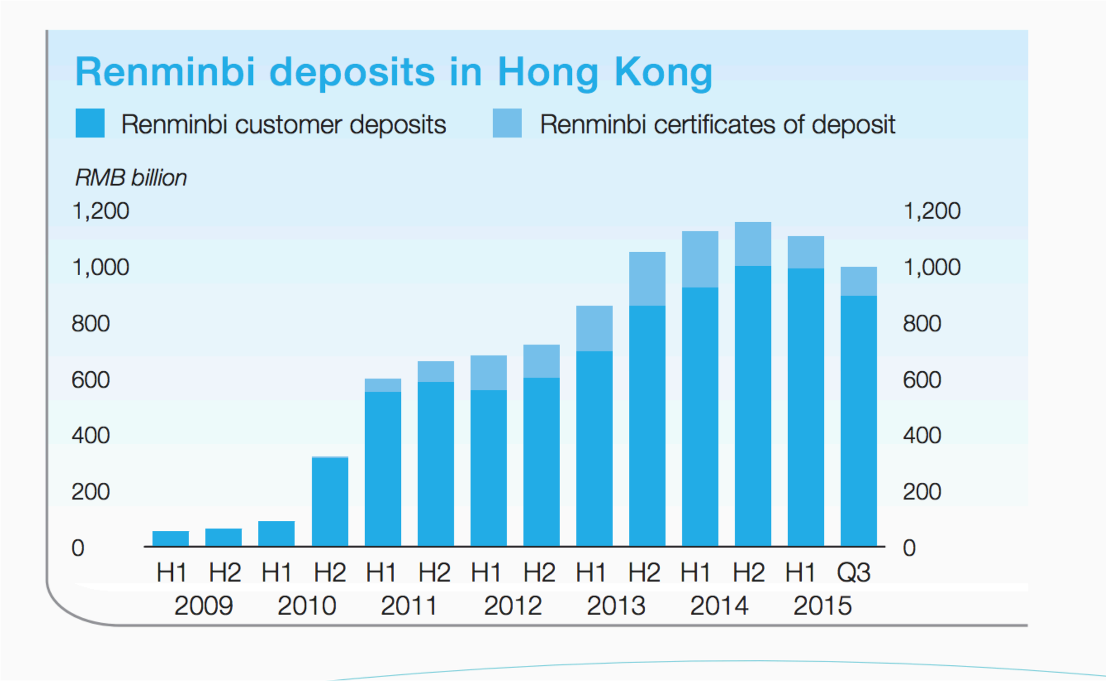
Source: PBC.

As for the trade in goods, the figure developed in high speed from 2012, which resulted in the increase in the total amount of renminbi settlements in cross-border trade. There is a continuous upward trend, but in August 2015, there has been significant ups and downs. Figures in August 2015 and January 2016 are the two most typical peaks, but since then the data has been falling.

4.1.2 Renminbi offshore markets

International Monetary Fund (IMF) defines an offshore financial centre (OFC) as "*a country or jurisdiction that provides financial services to nonresidents on a scale that is incommensurate with the size and the financing of its domestic economy*."(Ahmed Zoromé ; 2007)

Figure 4.5 Renminbi deposits in Hong Kong



Source by: Hong Kong Monetary Authority

Hong Kong is the earliest and most important offshore financial center of renminbi. Relying on the its own geographic location and favorable policies from the mainland, it has developed into the biggest renminbi offshore market. In 1989, the RMB offshore financial centre in Hong Kong was established. The amount of renminbi deposits and loans in Hong Kong began to grow rapidly. In 2002, after the Asian financial crisis, China restarted the renminbi offshore market in Hong Kong.

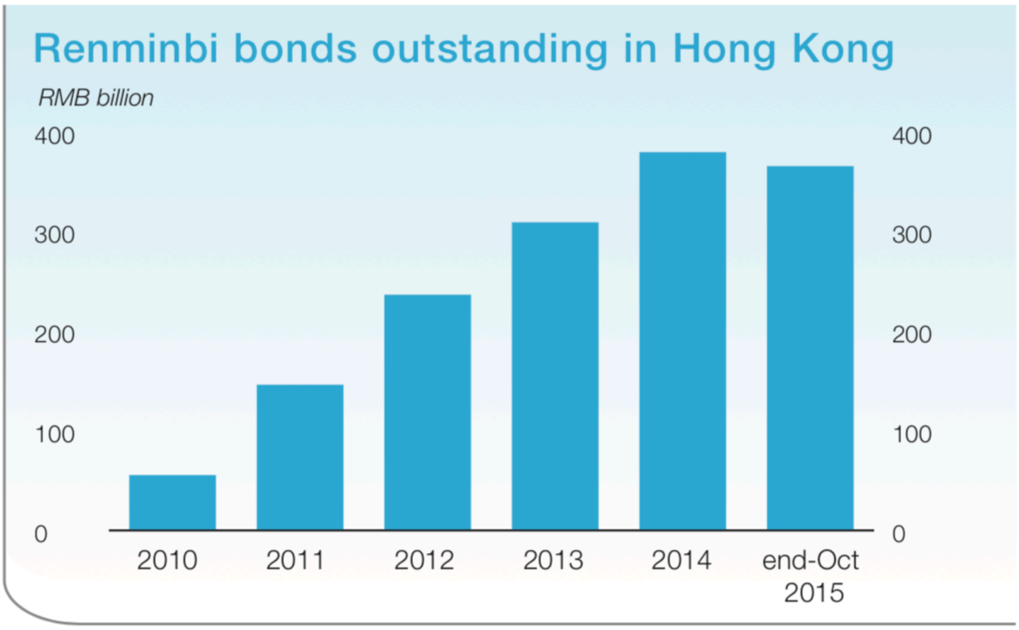
As shown in figure 4.5, renminbi deposits grew steadily from 2004 to 2010. In 2011, the renminbi deposits in the Hong Kong offshore market skyrocketed and exceeded 648.08 billion yuan. It shows that Hong Kong finance has gradually restored from the US mortgage crisis in 2008. More importantly, it revealed the favorable conditions of Chinese mainland policies. The rapid increase could largely attribute to the policy of RMB internationalization. In 2013, the amount of renminbi deposits in Hong Kong reached 860.5 billion yuan. By 2014, it had increased to 1,003.5 billion yuan. (see

Figure 4.5) However, as the pressure of economic downtown has increased, by the end of the first quarter of 2016, this figure had dropped to 720 billion yuan.[9]

Figure 4.6 Renminbi trade settlement in Hong Kong

Source by: Hong Kong Monetary Authority

Figure 4.7 Renminbi bonds outstanding in Hong Kong



Source by: Hong Kong Monetary Authority

[9] The number is not reflected in figure 4.5, as Hong Kong monetary authority has not published a yearly renminbi internationalization report since 2016. But the numbers has been published on their official websites in the monthly data revelation.

In 2012, renminbi offshore financial center was launched in London. In 2014, the Bank of China's London Branch successfully issued renminbi bonds worthy of 2.5 billion yuan. London's renminbi exchange market has risen to become the largest trading center of renminbi in addition to the mainland of China and Hong Kong, China. Other countries and regions are also willing to build a renminbi offshore trading center. The development of the RMB offshore financial centre offers more choice of currency when settling foreign trade. And it also promoted the international use of renminbi to a greater extent.

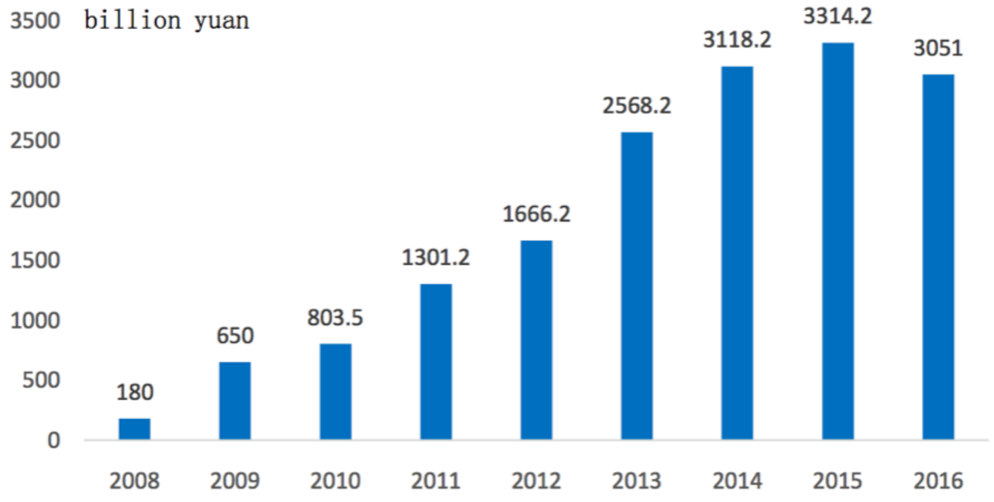
4.1.3 Renminbi currency swaps

According to Darbyshire, J. H. M. (2017), a cross-currency swap's (XCS's) is "*a derivative contract, agreed between two counter-parties, which specifies the nature of an exchange of payments benchmarked against two interest rate indexes denominated in two different currencies.*"

Since the reform and opening up, China's import and export trade volume has increased rapidly, and foreign exchange reserves have been accumulated from the surplus of foreign trade. However, most of the world's import and export trade is still mostly settled in U.S. dollars. The size of China's foreign trade volume calls for the use of renminbi in international trade settlements to avoid transaction costs and others. Moreover, the dependence on USD in international trade add the chance of financial contagion. Once the international financial crisis happens in China, it will inevitably harm the stability of China's domestic economy.

In order to lessen the dependence on the U.S. dollar in the international payments and encourage the internationalization of renminbi, the Chinese government has actively promoted bilateral currency swaps in recent years, which to a certain extent has reduced the demand for U.S. dollar currency in the bilateral trade.

Figure 4.8 People's Bank of China's balance of currency swap with monetary authorities from other countries



Source by: People’s Bank of China

Since 2008, Chinese government has begun to sign bilateral currency swap agreements with different monetary authorities, in order to provide RMB liquidity for the other country, thereby encouraging the international use of renminbi.(see figure 4.7) In December 2008, the People's Bank of China, for the first time, signed a currency swap agreement with South Korea, which worth about 180 billion yuan. Until April 2015, when the bank renewed a 120-billion-yuan currency swap agreement with the Malaysian bank, the People’s Bank of China has successively signed bilateral currency swap agreements with 30 monetary authorities and its total size was 310.12 billion yuan. The number is still going up.

The currency swap agreement has a significant role in promoting the international use of renminbi. First of all, China has signed currency swap agreements with neighboring countries who have close bilateral trade links with China. This can encourage these countries to choose renminbi as their trade settlement currency. Secondly, after choosing to use renminbi as trade settlement currency, renminbi will inevitably become the country’s reserve currency. Thirdly, the regionalization of renminbi is an important step towards the internationalization of renminbi.

4.1.4 Renminbi as a store of value

As defined by IMF (2018)[10], "*SDR allocations can play a role in providing liquidity and supplementing member countries' official reserves…The SDR is neither a currency nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies.*"

In 2010, Malaysia bought Chinese government bonds as a kind of foreign exchange reserve, and Malaysia became the first country to use the renminbi as reserve currency. At this time, renminbi has begun to evolve into an international reserve currency. At November 30, 2015, IMF officially announced approval of renminbi to join the SDR basket. The new currency basket will take effect on October 1, 2016. According to the weights of SDR announced by the IMF, the renminbi will account for 10.92%, ranking behind the U.S. dollar (41.73%) and the euro (30.93%). At this point, the new basket will be formed by the U.S. dollar, the euro, the Japanese yen, the British pound and the Chinese yuan.(see Figure 4.9). As IMF President Lagarde said, "The renminbi's entry into the SDR basket will be a milestone for China's integration into the global financial system. This is also recognition of the Chinese government's progress in monetary and financial system reform over the past few years."

[10] International Monetary Fund's factsheet (April 19, 2018),*Special Drawing Right (SDR).* Available at http://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/14/51/Special-Drawing-Right-SDR

Figure 4.9 A basket of currencies determines the value of the SDR and its weight

Currency	Weights determined in the 2015 Review	Fixed Number of Units of Currency for a 5-year period Starting Oct 1, 2016
U.S. Dollar	41.73	0.58252
Euro	30.93	0.38671
Chinese Yuan	8.33	1.0174
Japanese Yen	8.09	11.900
Pound Sterling	10.92	0.085946

Source from: IMF

However, things turned out to be not as good as people had expected. According to the open data provided by individual countries, we can find for the first time and only, RMB reserves were around USD 84.51 billion(see appendix), only accounting for 1.07% of the total amount of official foreign exchange reserves by the end of 2016. (see figure 4.9)[11]

At present, some neighboring countries have already used the renminbi as their official reserve currency, but the weight of RMB is relatively low. In general, the country must meet the condition of the liberalization of capital account and their currency can be freely used in the international market. Only in this way can a currency became a reserve currency. China and yuan do not meet the criteria. Therefore, the process of RMB to become an international foreign exchange reserve currency is only at its initial stage.

[11] International Monetary Fund (IMF)has published the Currency Composition of Official Foreign Exchange Reserves (COFER) on their official websites. Available at http://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4

4.1.5 Exchange rate reform

On August 11, 2015, the People's Bank of China announced that it would adjust the exchange rate system. PBC has changed the central parity rate of RMB against USD. After adjustments, market makers used the closing exchange rate of the inter-bank foreign exchange market on the previous day to provide a mid-price quote to the China Foreign Exchange Trading Center. The exchange rate reforms have made the exchange rate reflect the supply and demand of the foreign exchange market in a timely manner, promoting the marketization of exchange rate.

The exchange rate reform had a profound impact on the Chinese economy. Firstly, the exchange reform increased the elasticity of the RMB exchange rate to float in both directions. After the reform, the renminbi exchange rate has moved in both ways with improved flexibility. In the past two years, the value of the RMB has experienced both ascend and descend (see figure 4.10). After the reform, the exchange rate of renminbi against US dollars first depreciated. The highest point appeared in December 2016 when the exchange rate was almost 7. After that, the actions of monetary authorities have pushed the exchange rate higher and RMB stopped depreciate and start to appreciate.

Figure 4.10 USDCNY(CFETS)

Source from: WIND database

The figure measuring the exchange rate volatility is calculating the difference between offshore and onshore renminbi exchange rate against the US dollars. The offshore renminbi market is not subject to any controls, so the offshore renminbi exchange rate can be seen as a market-determined exchange rate. If the offshore exchange rate (USDCNH) is located above the onshore exchange rate (USDCNY), it indicates that the renminbi is under depreciation pressure. On the contrary, it is under appreciation pressure.(as shown in figure 4.11).

Figure 4.11 Spread (USDCNH—USDCNY）

Source from: WIND database

Since August 2015, the exchange rate of RMB against the US dollar began to depreciate sharply, and foreign exchange reserves continued to shrink. But in the early 2017, renminbi has not continued to depreciate against the US dollar but has gradually become stable. Even there has been a long time of overturn between onshore and offshore exchange rates.(see figure 4.11) Correspondingly, foreign exchange reserves have terminated the continuous decline, and began to rebound from February 2017. At this stage, policy played an important role. The first is to strengthen the monitoring of the capital accounts and cross-border flow of capital. Through investigating the corporate's foreign investment and residents' purchase of foreign exchange, PBC could restricted capital outflows. The second is the intervention of the offshore market.

The second impact of 811 exchange reform is to manage the renminbi against a basket of global currencies instead of solely pegging to the US dollar. This enables RMB not only track USD. On May 2017, PBC once again adjusted the exchange rate system, and added a countercyclical factor to the pricing model. And the pricing mechanism consists of “closing price + the basket of currency + countercyclical adjustment factor”. Its main purpose is to hedge the pro-cyclical volatility of the market and calm the "herd effect" in the foreign exchange market. This new pricing mechanism has greatly boost market confidence. As the Chinese economy taking off in 2017 and the U.S. dollar index falling, renminbi exchange rate against the U.S. dollar has continued to rise in 2017 and 2018. During this period, for most of the time, the offshore and onshore exchange rates were mostly upside down, indicating that the market's devaluation expectations have been eliminated.

The RMB exchange rate has continued to appreciate since 2018. According to experts, this is mainly driven by external market factors. Since 2018, the fundamentals of the domestic economy have been basically stable. So do the cross-border capital flows. There has been no particularly good news of economy. The internal factor is insufficient to explain the dramatic appreciation of the RMB exchange rate in the short term. This round of RMB appreciation is more likely caused by the depreciation expectation of US dollar’s exchange rate.

Exchange rate stability is extremely important to the nation’s financial security. The facts of the past two years have proved that the irrational fluctuations of the exchange rate will not only lead to internal and external economic imbalances, but will also raise doubts among the international investors about China’s economic prospects, which will trigger systemic risks. Therefore, the reform of RMB exchange rate is closely linked to the internationalization of renminbi. A stable exchange rate is a precondition to the internationalization of the currency.

4.2 Lessons from Japan’s effort to internationalize the Yen

The internationalization of Japanese yen happens in the 1970s when Japan experienced economic prosperity. The Japanese government has tried to push the yen to internationalize depending on its own advantages in international trade. However, due to the unsound domestic financial system and the obstruction of the US, the internationalization of yen ended in failure. And the Japanese economy cannot completely recover from it until now. For comparison, today's renminbi is in the most similar situation to that of the Japanese yen at that time. Therefore, it is very important to analyze the reason of the failure of Japanese yen and shed a light on the possible risks renminbi may encounter.

4.2.1 The process of yen internationalization

The internationalization of the yen has gone through three phases:

The first stage was from the end of World War II to the 1970s. In the 1950s and 1960s, Japan’s economy grew at a rapid speed. Its current account was in surplus year after year, and a large amount of foreign exchange reserve was accumulated. There was a huge pressure on yen to appreciate. However, at that time, the Japanese government was concerned that the yen's internationalization would bring cross-border capital flows in a large amount, thus hitting domestic market. Therefore, the government were passive towards the internationalization of yen. During this period, the yen’s function as a settlement currency is promoted, but its function as a reserve currency were strictly prevented.

The second stage was from the 1980s to the southeast financial crisis in 1997. In the late 1970s, Japan experienced a large surplus in its current account, while the United States has seen a dramatic increase in its trade deficit. Among them, the trade imbalance between Japan and United States constitutes a major part of it. The U.S. government therefore continuously exerted pressure on Japanese yen. As a result, Japan signed the "Plaza Agreement."

In 1980, the Japanese government amended the "Foreign Exchange Act" and liberalized the capital account. In 1984, the Ministry of Finance of Japan submitted a report entitled "Current Status and Prospects for Financial Liberalization and the Internationalization of the Yen." This document systematically outlined specific approaches and measures for promoting the internationalization of the yen.[12]

The third stage is from 1998 to the present. At this stage, the Japanese government has actively promoted the internationalization of yen. The Asian financial crisis in 1997 made Japan more aware of the importance of currency internationalization. In September 1999, the Japanese ministry of finance established the "Japanese Yen's Internationalization Research Conference" to study the yen's internationalization policy.[13] The appearance of the Euro in this period stimulated Japan to change its internationalization strategy into regionalization.

4.2.2 The reason of failure

It has been thirty years since the internationalization strategy of Japanese yen. However, the internationalization level of yen is still very low, compared with the US dollar and the euro which comes later. In essence, the failure of the yen's internationalization is mainly due to three reasons.

Firstly, Japanese government is not capable to maintain a stable exchange rate. From 1973 to 1995, there has been 8 times which the exchange rate of yen fluctuates more than 10% against the United States dollar. and the highest record of fluctuation was 40.5% appreciation of the Japanese yen in one year from 1985 to 1986. After 1995, the exchange rate of the yen plummeted, and the depreciation of yen reached 100% in less than three years. At the end of 2001, yen began to appreciate substantially. (see figure 4.12)

[12] It is an except from Chronology of the Internationalization of the Yen by Ministry of finance, Japan. Available at https://www.mof.go.jp/english/about_mof/councils/customs_foreign_exchange/e1b064c1.htm

[13]Ministry of Finance: Internationalization of the Yen for the 21st Century

Figure 4.12 Value of Japanese Yen between 1978 and 2006

(1) 変動相場制移行後の円相場 Value of Yen after Introduction of Floating Exchange Rate System (1 米ドル当たり · 円 ¥ per U.S.$)

年 月 Year & Month		円 最 高 Highest	最 安 Lowest	平 均 Average	前年（同月）比 Change from a year earlier		ユーロ 年 · 月末値 Euro End of period
1978		176.05 ⑩	242.35 ①	210.44	27.6%	up	-
79		195.35 ①	251.50 ⑪	219.15	4.0%	down	-
1980		203.60 ⑫	260.70 ④	226.70	3.3%	down	-
81		199.60 ①	243.65 ⑧	220.55	2.8%	up	-
82		217.80 ①	278.10 ⑪	249.07	11.5%	down	-
83		227.50 ①	247.35 ⑧	237.48	4.9%	up	-
84		222.10 ③	251.58 ⑫	237.53	0.0%	down	-
85		200.35 ⑪	263.40 ②	238.54	0.4%	down	-
86		152.90 ⑧	203.00 ①	168.51	41.6%	up	-
87		123.00 ⑫	159.15 ①	144.62	16.5%	up	-
88		120.80 ⑪	136.70 ⑨	128.15	12.9%	up	-
89		124.10 ①	150.35 ⑥	137.96	7.1%	down	-
1990		124.30 ⑩	160.10 ④	144.80	4.7%	down	-
91		125.20 ⑫	141.80 ⑥	134.54	7.6%	up	-
92		119.15 ⑩	134.75 ④	126.65	6.2%	up	-
93		100.40 ⑧	125.95 ①	111.18	13.9%	up	-
94		96.35 ⑪	113.60 ①	102.23	8.8%	up	-
95		79.75 ④	104.70 ⑨	94.06	8.7%	up	-
96		103.97 ②	116.18 ⑫	108.79	13.5%	down	-
97		110.68 ⑥	131.60 ⑫	121.00	10.1%	down	-
98		113.81 ⑩	147.64 ⑧	130.90	7.6%	down	-
99		101.35 ⑪	124.75 ⑤	113.91	14.9%	up	102.91
2000		101.46 ①	114.98 ⑫	107.77	5.7%	up	106.55
01		113.57 ①	132.08 ⑫	121.53	11.3%	down	116.51
02		115.63 ⑦	135.04 ②	125.31	3.0%	down	125.08
03		106.93 ⑫	121.48 ②	115.93	8.1%	up	133.74
04		101.83 ⑫	114.80 ⑤	108.18	7.2%	up	141.61
05		101.87 ①	121.40 ⑫	110.16	1.8%	down	139.83
06		109.02 ⑤	119.80 ⑩	116.31	5.3%	down	156.50
07		107.29 ⑪	124.14 ⑥	117.76	1.2%	down	166.66
08		87.19 ⑫	110.48 ⑧	103.37	13.9%	up	127.96
09		84.82 ⑪	101.24 ④	93.54	10.5%	up	132.00
2010		80.24 ⑪	94.70 ④	87.78	6.6%	up	107.90
11		75.52 ⑩	85.53 ④	79.81	10.0%	up	100.71
12		76.11 ②	86.63 ⑫	79.81	0.0%	up	114.71
13		86.83 ①	105.41 ⑫	97.63	18.3%	down	145.05
14		100.76 ②	121.86 ⑫	105.85	7.8%	down	146.54
15		115.85 ①	125.66 ⑥	121.03	12.5%	down	131.77
2016		99.00 ⑥	121.49 ①	108.84	11.2%	up	122.70
	1	116.40	121.49	118.25	0.0%	down	132.17
	2	111.60	121.49	115.02	3.1%	up	124.11
	3	110.84	114.37	113.07	6.5%	up	127.70
	4	107.63	112.57	109.88	8.8%	up	124.12
	5	106.14	111.44	109.15	10.6%	up	123.65
	6	99.00	110.83	105.49	17.3%	up	114.39
	7	100.25	107.49	103.90	18.6%	up	115.67
	8	99.65	103.33	101.27	21.7%	up	114.95
	9	100.09	104.14	102.04	17.8%	up	113.36
	10	101.21	105.42	103.82	15.6%	up	115.05
	11	101.19	113.90	108.18	13.3%	up	119.70
	12	112.87	118.39	115.95	5.1%	up	122.70

Notes : 1. ドルは東京外為市場銀行間直物中心相場。
As for dollars, Tokyo interbank offered central spot-deal rates.
2. 前年比騰落率は IMF 方式により算出。
Changes from a year earlier are calculated in an IMF method.
3. ○は月を示す。
Numbers in circles represent months.
Source : Compiled from Bank of Japan's (BOJ) Report on Foreign Exchange Markets and IFS etc.

Source from Japan foreign trade council's *Foreign Trade 2017*[14]

The frequent fluctuations of the value of yen indicates the incapability of the Japanese government to control its currency. The value of yen still depends on US dollar to a large extent. The fluctuations in the value of the currency have brought great losses to the countries holding yen assets. And other countries will not turn to yen as a reserve

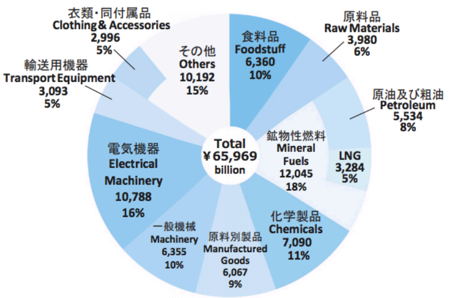
[14] Foreign Trade 2017 is a special study report published by Japan Foreign Trade Council, Inc on April 2017, with full coverage of Japan's foreign trade statistics. Figure 4.12 & 4.13 are excerpted from Chapter 1 Overview of Trade and Chapter 4 Foreign Exchange rate. Available at: http://www.jftc.or.jp/english/reports.htm

currency. Even in the international trade settlements, companies tend to avoid using the yen to reduce the risks of exchange rate.

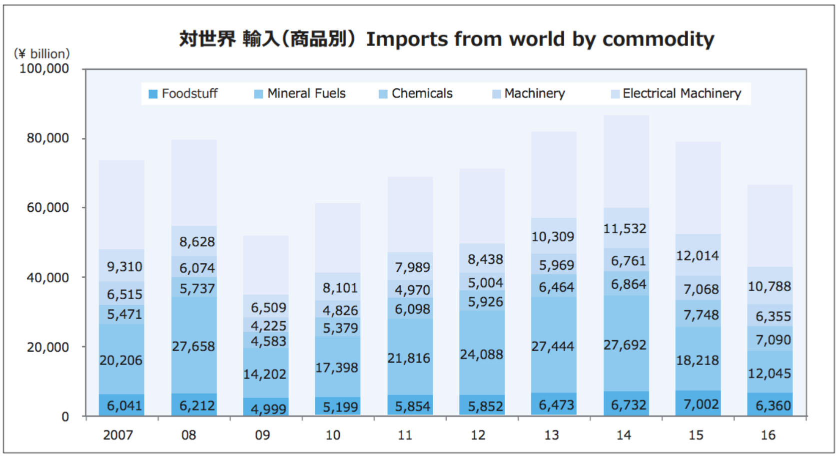
Secondly, the market of Japan is far from perfect. If a country intends to internationalize its currency, it first needs a sound domestic financial system. If the marketization of the market is not complete, it is really hard for the government to implement the strategy. In fact, Japan's financial market has always been relatively closed. And the government lays strict regulation on the market as a whole. The development of financial instruments such as bills, bonds, and foreign exchange also lag behind. They are quite simple always with poor liquidity and low yield but high risk. It is difficult to attract foreign investment into the Japanese market.

Figure 4.13 Japan's imports from world by commodity

2016 対世界 輸入(商品別) Imports from world by commodity



Items	Value (¥ billion)	Growth (%)
原油及び粗油 Petroleum	5,534	▲32.4
液化天然ガス LNG	3,284	▲40.4
衣類・同付属品 Clothing & Accessories	2,996	▲12.3
医薬品 Medical Products	2,766	▲5.4
通信機 Telephony, Telegraphy	2,723	▲7.2
TOP 5 total	17,303	—
Grand total	65,969	▲15.9



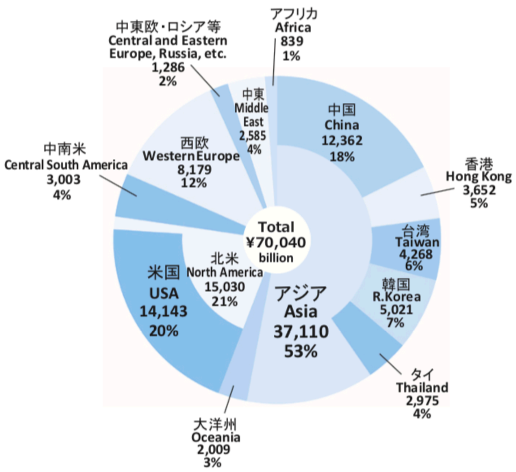
Source：Compiled from MOF's Trade Statistics on a Customs-cleared Basis.

Source from Japan foreign trade council's *Foreign Trade 2017*

Thirdly, the structure of Japan's foreign trade is unbalanced. Foreign trade is an important factor to a currency's internationalization. Although Japan has a relatively large trade volume and ranked the third in the world trade, its foreign trade structure is far from reasonable. It makes yen hard to be a settlement currency in the cross-border trade. From the perspective of the structure of import commodity, raw materials such as petroleum and LNG (Liquefied Natural Gas) account for a large proportion of Japanese imports, occupying 18% of the total imports. And electrical machinery, chemicals and foodstuff ranked third to fifth. (see figure 4.13) The settlement currency of raw materials often chose by the producer. In this case, most of Japan's foreign trade is settled in US dollar.

Figure 4.14 Japan's exports to world by area/county

2016 対世界 輸出(主要国・地域別) Exports to world by area/country



Partners	Value (¥ billion)	Growth (%)
米国 USA	14,143	▲7.1
中国 China	12,362	▲6.5
韓国 R. Korea	5,021	▲5.7
台湾 Taiwan	4,268	▲4.6
香港 Hong Kong	3,652	▲13.8
TOP 5 total	39,445	—
Grand total	70,040	▲7.4

Source from Japan foreign trade council's *Foreign Trade 2017*

From the point of structure of export commodity, Japan's export largely relies on USA. Until 2016, Japan's export to US still takes up 20% of the total exports to the world. Among them, about 85% of the American imports are settled in U.S. dollar. Although the volume of trade between Japan and East Asian countries are continuously increasing, but it is also dominated by USD. Therefore, yen's function as international payment currency is very limited. Obviously, the imbalance of Japan's foreign trade structure itself has led to the fact that a proportion of foreign trade are still dominated by US dollar. It is a great obstacle to the internationalization of yen.

To sum up, it can be seen that Japan does not have the conditions for the internationalization of currency, either from the foreign trade or from the domestic financial market. However, Japan tried to challenge the "dollar hegemony" through financial policies. It cannot be succeeded. Chinese renminbi is in the almost same situation as that of Japan from 1980s to 1990s. All the risks facing Japanese yen may as well be the challenges for renminbi. So it is of great importance for China's monetary authority to learn from Japan's reason of failure and try to avoid mistakes made by the country.

5 The risks in the process of the internationalization of Renminbi

The aim of this part is to analyze the possible risks in the process of RMB internationalization. From literature review, the author classifies the risks into four categories: The first is the risk of policymaking, consists of not only monetary policy but also exchange rate policy; The rest are the risk of currency speculation, which originates from poor capital controls, currency mismatch and financial instability. Cross-border flows of capital will impact the stability of the domestic financial market and even the macro economy through channels such as exchange rates and interest rates.

5.1 The policy issues of currency internationalization

History has proved that monetary policy and exchange rate policy will have a significant impact on the financial stability of a country. This chapter will mainly analyze the effectiveness of the country's monetary policy and exchange rate policy on financial stability during currency internationalization.

5.1.1 Monetary policy

If a country's currency become a world currency, the outflow and inflow of capital will inevitably grow, thereby affecting the making of country's monetary policy. At the same time, the effectiveness of the nation's monetary policy will also affect the international status of the local currency.

1. The Independence of Monetary Policy Faced by International Currency Issuing Countries

Generally speaking, there are three determinants of the effectiveness of a nation's monetary policy: first, whether the currency can affect output; second, whether there is a stable link between currency and output; and third, whether the monetary authorities can control currency. If all the questions to the above three questions are positive, then the monetary policy is determined to be valid; otherwise, the monetary policy is found to be invalid. Of the three conditions, the last one determines the independence of monetary policy.(Arestis, P., & Sawyer, M., 2004) In theory, internationalization of currency mainly affects the independence of monetary policy.

According to theory, the “impossible trinity" is just a theory of policy choice in an open economy and it does not involve the internationalization of a currency. However, for international currency issuing countries, a highly open financial market and stable currency value are prerequisites for the internationalization of a currency. Therefore, it is inclined to maintain the stability of exchange rate and free flow of the capital. Under such policy combination, the independence of a country’s monetary policy may be limited in the following two aspects:

Firstly, the autonomy of the country’s monetary policy will be affected. That is, in the case of free flow of capital, the choice of a fixed exchange rate system means abandoning monetary independence. Therefore, the level of domestic interest rates must be consistent with the interest rate of exchange rate pegged country. In addition, under the monetary union with the highest level of economic integration (such as the European Central Bank system), a country voluntarily abandons monetary policy autonomy, which means that it has abandoned monetary policy independence.

Secondly, the making of domestic monetary policies are susceptible to the economic conditions of other countries and the “spillover” of their monetary policies. It can be seen from the interest rates in domestic currency markets, which are susceptible to capital inflows, foreign exchange reserves growth, and international interest rate.

If a country’s currency becomes an international currency, it will greatly increase the holdings of the currency by non-residents. When an international currency issuing country implements an expansionary monetary policy, the country’s interest rate will decline, and the return on assets will descend. This may cause non-resident’s holding of one country’s currency assets to switch to hold other countries’ monetary assets, resulting in large capital outflows. This shows the nation’s expansionary monetary policy failed. And vice versa, if they implement restrictive monetary policy.

In addition, during the process of currency internationalization, the regulation of interest rates will be subject to certain restrictions. On the one hand, low interest rates are conducive to capital export. Firstly, foreigners are more willing to borrow this kind of currency due to low costs. Besides that, domestic investors are also willing to export capital to make profit. However, lower interest rates will also harm the attractiveness of money, so that people do not want to hold such low-yielding currency for large amount or for a long period of time. On the other hand, while high interest rates can enhance the attractiveness of the country’s currency and incurring large capital inflows, high interest rates will also diminish foreign borrowings, making it difficult to meet the capital export requirements to realize currency’s internationalization.

2. The Impact of RMB Internationalization on China's Monetary Policy

At present, China is a major global creditor. Although the internationalization of renminbi will, to a certain extent, reduce the risks of China's foreign investment, it will also induce difficulties on the making of China's monetary policy. This section will analyze the impact of the internationalization of RMB on the independence of the monetary policy and its corresponding strategies.

In the short term, the impact of RMB internationalization on the independence of monetary policy will be very limited. However, in the long run, the independence of monetary policy will be greatly affected.

Firstly, in the long run, if a country’s capital account is not open, the internationalization of their currencies will not succeed. Therefore, the opening of capital account is the only option. In along with previous reform experience, China also adopt a gradual strategy towards opening up of the capital account. With the process of opening up, the scale of cross-border capital flows will also increase. Thus, uncertainties faced by China’s monetary policy making will inevitably rise, and it will be more difficult to make the monetary policy.

Moreover, at present, China’s financial scale is incompatible with its economic strength. With the RMB internationalization, China’s financial market will be developed, especially the offshore financial markets. Offshore financial markets plays a significant role in promoting the internationalization of local currency. (Ahmed,F, etc; 2011) However, the development of offshore financial markets also add difficulty to the authority to control the supply of domestic currency, thus posing threats to the independence of monetary policy.(He, D., & McCauley, R. N.; 2012)

From theory and current situation, two ways to maintain the independence of the monetary policy is proposed.

Firstly, the country should further open up capital account and increase the flexibility of its exchange rate. At present, the control of Chinese capital account has limited further internationalization of its currency. In 2012, China’s central bank has released a report, China’s conditions for speeding up the opening up of capital account are basically mature. The report has drawn a clear road map for the opening of China's capital account, which divides the procedure as short term, medium term and long term.

This report shows that China is still cautious about the opening of capital account, but it also shows that it is a trend inevitable. Therefore, under the circumstances of the gradual opening of capital account, it is necessary to add flexibility of the exchange rate in order to maintain the independence of monetary policy. In along with previous reform practices of China, the nation will also adopt a gradual approach to reform RMB exchange rate regime. It is to prepare companies gradually adjust to fluctuations. In addition, the government should ensure that the exchange rate volatility is under control. The aim is to prevent the overshooting of RMB exchange rate to the market force, and avoid the strike of speculative funds on monetary policy.

In addition, the government should better prevent the arbitrage behavior brought by the internationalization of renminbi. In theory (Canterbery,E.R.;1965), arbitrage activities will narrow the gap between the international interest rate and offset the effects of domestic monetary policy. Moreover, the arbitrage activities are likely to stimulate short-term speculative capital inflows, which may bring about a “herd effect” and disturb the stability of China’s financial market. This negative effect of arbitrage is the reason why Germany and Japan have resisted the internationalization of their currency for a period of time. Therefore, in addition to further develop financial market, China also need to increase the level of regulation to prevent the impact of speculative funds on the nation’s monetary policy.

5.1.2 Exchange rate policy

The internationalization of renminbi will add volatility to the exchange rate. The cost of maintaining stability of exchange rate is relatively high, and the making of exchange rate policies will be extremely difficult.

As an internationalized currency, renminbi must maintain its currency value, in order to enhance the confidence of overseas non-residents in holding the renminbi and its assets. It is through ensuring the benefits of their investment, thereby promoting the position of renminbi in the international market. However, according to the theory of 'impossible trinity', at aims of maintaining the independence of the monetary policy and opening up the capital account, the exchange rate must be float in accordance to the supply and demand in the international market. As a result, the implementation of the exchange rate policy is restricted by the internationalization of the currency.

Therefore, the difficulty lies in maintain the value of the currency in a non-fixed exchange rate regime. The value of the currency is an important precondition for non-residents to hold the money. So it will be difficult for the government to achieve exchange rate depreciation, on the condition that there is a state of imbalance in the balance account. According to the theory of 'currency substitution', adopting a devaluation policy to adjust input and output imbalances will harm the confidence of non-residents in holding renminbi, thereby reducing the weight of its currency assets in their portfolio and the frequency of their use in international trade settlement will decline. Non-residents are likely to convert their holding of renminbi to other currency with more stability in the value and more interests in holing them, both in the short term and long term (referred to exchange rate and exchange rate expectations). If this situation continues, there will be a large-scale outflow of capital, which will invalidate the exchange rate policy and further affect the international use of the renminbi.

The internationalization of renminbi has created many favorable conditions for international capital, prompting large amounts of short-term capital to flow into the country, imposing pressure on renminbi to appreciate; the withdrawal of capital in a large amount in a short time will put pressure on the currency to depreciate. The internationalization of the renminbi has led to the development of financial products related to the renminbi, and the number of sales of these financial products will also continue to increase. This will also add volatility on the renminbi's exchange rate.

With the opening of capital account, international speculative capital will find the opportunity to enter or exit the Chinese market, which will have an impact on the stability of the exchange rate. In order to achieve internationalization, renminbi must be freely convertible and free to float, so that the central bank cannot adopt capital control measures to avoid foreign exchange rate fluctuations as it did before. The central bank's ability to intervene the foreign exchange market will be impaired. The making of exchange rate policy will be extremely difficult.

5.2 Currency speculation attempt

Even though speculative currency shocks have occurred in the West as early as the 1920s, it has attracted people's attention only since the 1970s. With the disintegration of the Bretton Woods system, the exchange rate regime in the international monetary system has changed from fixed exchange rates in the past to a system of diversification. Since then, the exchange rate has fluctuated frequently, which provides opportunities for speculators to use spreads of interest rates and exchange rates. With developed countries opening up of capital accounts, the flows of capital have accelerated. Speculative funds begun to attack currencies of countries which implementing fixed exchange rate regime. And it will result in currency crises in that country.

During the internationalization of the currency, the risk of speculation attack has increased. It is because that financial liberalization brought about by the internationalization of currency will add fluctuations of the price of financial products, and thus bringing instability to the economy. In countries with stronger economic strength, such speculation attempt may be suppressed. But in countries with relatively weak economic capability, their economy is susceptible to speculative attacks. This section will explore the mechanisms of currency speculation attempt as well as proposing strategies to prevent the risks.

5.2.1 the influence of currency speculation on the internationalization of currency

Currency speculation will inevitably lead to the outflow and inflow of capital in a large scale, which will increase the volatility of price of domestic asset. It will not only increase the difficulty in the making of domestic monetary policy, but also incur instability in the economy. It could stimulate countries to adopt non-international policies, such as the implementation of the non-internationalization policy of German Mark and Japanese Yen. The effects of currency speculation on the internationalization of currency are as follows.

Firstly, in terms of capital inflows, currency speculation can bring about a large inflow of capital, which will increase the country's money supply, creating inflationary pressures. And a large amount of hot money may be poured into the real estate, stock market and other industries, accumulating the economic bubbles. McKinnon,R.& Pill,H.'s(1998) research shows that large capital inflows will also lead to "over-borrowing syndrome" of financial institutions. It could lead to the appreciation of the currency and thus increase instability of the financial system. It is unfavorable to the internationalization of local currency.

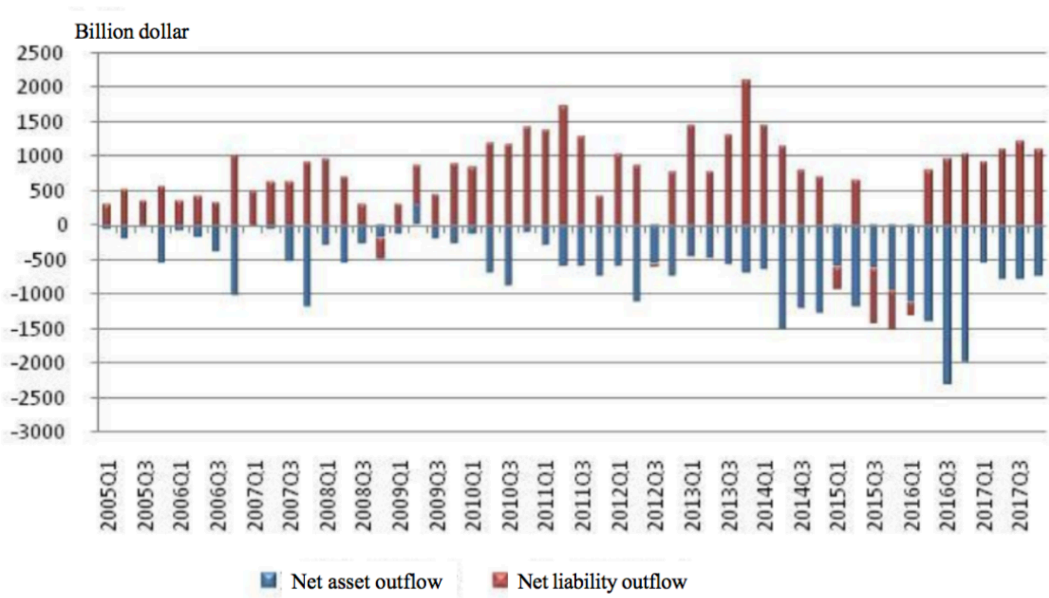
Secondly, in terms of capital outflow, a large amount of capital outflows could aggravate the deficits of balance account, resulting in violent fluctuations of exchange rate. In particular, for those countries adopting a fixed exchange rate system and with underdeveloped domestic financial markets, they are easy targets for currency speculation and the value of their currency could fluctuate violently. At the same time, a large scale of capital outflow caused by currency speculation will, to a certain extent, weaken the effectiveness of macroeconomic policies implemented by the monetary authorities. Because capital outflow will cause the actual amount of currency in circulation to be far less than the money supply that the monetary authority intends to give, and thus rising interest rate. This will inevitably weaken the effectiveness of proactive fiscal policy fiscal policy and monetary policy, which is also detrimental to the internationalization of domestic currency.

To be sure, although currency speculation increases the volatility of the economy, it will also force the government to improve the institutional infrastructure of financial supervision and regulation of capital markets, with a focus on limiting the speculative currency attacks. For example, in order to avoid severe economic fluctuations, the government is forced to supervise exchange rate and other related indicators. These measures contribute to the currency internationalization.

5.2.2 the capital flight in China

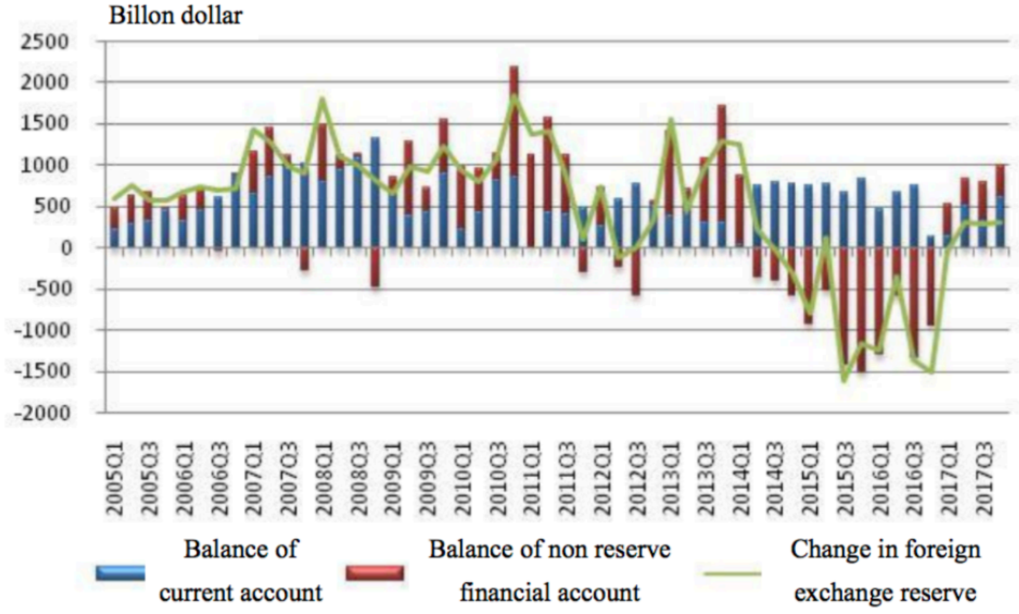
Cuddington, J. T. (1986) defined capital flight as short-term speculative capital outflows. In economies with a fully open capital account, capital flight may be legal. However, in countries with strict capital controls, capital flight is generally illegal, because the capital control is to stop the large-scale outflow of capital. In China, capital flight is generally understood as illegal.(Yu, Y. & Xiao, L.S.; 2017)

Figure 5.1 Non-reserve financial account balance



Sources by SAFE

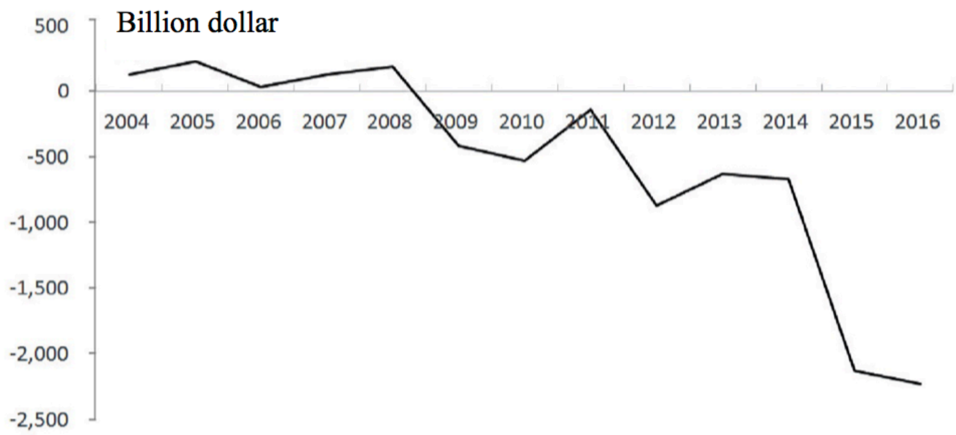
Figure 5.2 Balance of international payments and change in foreign exchange reserve



Sources by SAFE

Although there is no official release of economic statistics about the amount of capital flight in China in the last three years, from 2015 to 2017, we can still get a hint of it from existing data published by Chinese government. Scholars from China and abroad all came to the conclusion that a huge amount of capital has flown overseas. Evidence of this phenomenon can be found in the balance of international payment which shows an increasing amount of errors and omissions in China's international payments(see appendix). It is further confirmed by international investment situation.

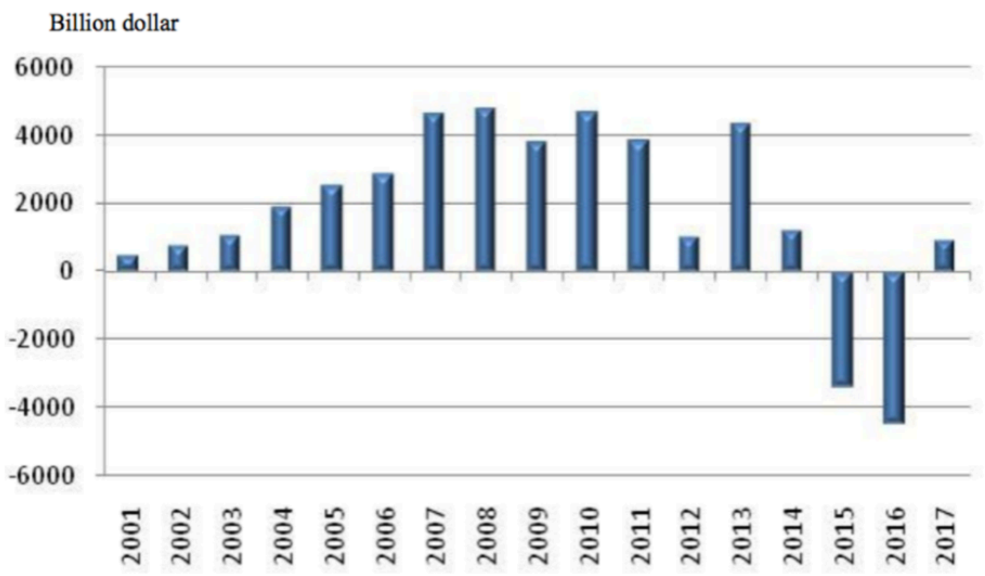
Figure 5.3 Errors and omissions in the balance sheet of international payments



Source by Wind database

According to Yu (2017), from 2015 to 2016, on the balance of payments, Chinese recorded capital outflows amounts to $1 trillion and 280 billion (non-reserve financial account balance + errors and omissions account), The average annual net capital outflow is equivalent to 6% of the total GDP.

Figure 5.4 Change in foreign exchange reserve



Source by SAFE

The Chinese government has made up its mind to liberalize the capital account step by step. China's stated goal is to realize the convertibility of the general account of Renminbi by the end of 2015 and achieve full convertibility by the end of 2020.[15] But things are not going as expected. China's capital account has been in a surplus since the 1990s, but it started to suffer from deficits since 2014. By the end of 2015, even if China's current account surplus stays above 300 billion US dollars, the capital account deficit makes China's overall balance of payments (BOP) negative. In 2016, China's capital account deficit reached 200 billion U.S. dollars. News quickly break out, and the People's Bank of China began to intervene. But it is too late and too costly. In less than two years, China's foreign exchange reserves dropped from 4 trillion US dollars in mid-2014 to less than 3 trillion US dollars in 2016.

[15] In October 2010, the fifth plenary session of the 17th CPC Central Committee has put 'gradually realize the convertibility of RMB capital account' in the twelfth five year plan.

Some Chinese companies have legally exported large amounts of capital from China during overseas acquisitions. But no one knows whether these outflows will translate into net overseas assets owned by Chinese residents or not. Since 2012, especially since 2014, China has experienced large-scale capital flight. If the government does not take action in 2016 to effectively control capital account, the results will be unpredictable. In the past, as one of the world's largest creditor countries, China needed to reduce its investment income deficit. The challenge now facing China is the disappearance of assets: China must prevent the disappearance of its overseas net assets.

And the problem is that the shock to the economy from the capital flight was so bad that even the internationalization of renminbi has been stalled. It is because one of the prerequisite of the internationalization of a currency is the liberalization of its capital account as mentioned above. The international use of renminbi in a free manner is the only approach to guarantee the confidence of international non-residents to hold the currency and its assets. Once capital flights occurred, because it negative impact on the whole financial system is so huge that the central bank has to give up the internationalization of renminbi for the past few years and control the foreign reserve and money supply at the moment, for stability is the key point of Chinese development.

But things have change a bit since mid-2017. As the statistics revealed, the cross-border capital flows have been in control and it flows in a steady speed. In 2018, as cross-border capital flows in emerging markets are expected to remain relatively stable, China is expected to revive its policy of internationalization of Renminbi.

5.2.3 to sum up

The opening up of capital account is a "double-edged sword." Appropriate policy arrangements are conducive to the opening up of capital account in the country, and can avoid negative impact on the economy. At the same time, timely opening of capital account will contribute to the process of the currency's internationalization. Conversely, the risks brought about by the opening of capital account will also hinder the process of currency internationalization.

As with the internationalization of the renminbi, the opening up of capital account is inevitable. However, as China's financial system is underdeveloped, further liberalizing of capital account will be confronted with many challenges. In order to prevent these problems, besides opening up capital account in a gradual and controlled approach, a sound financial market, and a more flexible exchange rate system are extremely helpful.

5.3 Currency mismatch

From theoretical analysis, currency mismatch can have adverse effects on a country's economy, triggering financial crises. Specifically, at macroeconomics level, due to the existence of currency mismatches in the country's balance sheet, external shocks can lead to the accumulation of foreign currency debt or assets. This will add volatility to the countries exchange rate and cause the currency to appreciate or depreciate, triggering turmoil in the financial system. (Eichengreen, B., & Tille, C; 2006) At the same time, it will also harm the effectiveness of monetary policy.

From the microeconomics level, the economic actors include households or enterprises. Due to currency mismatch in income and expenditure, the net value of assets will suffer from the fluctuations of exchange rate. As for the foreign trade companies, currency mismatch will seriously affect the company's input and output, triggering corporate debt risk. This risk would, in turn, be transmitted to the whole financial system through the bank's lending system, just like the Mexico banking crisis.

At present, China, as the world's second largest economic, has a high degree of foreign economic dependence, and the world's largest foreign exchange reserve. At the same time, China's exchange rate is not float according to the market forces, and the RMB cannot be freely converted. The international community impose huge pressure on renminbi, urging it to appreciate, which to a certain extent further increases the risks of currency mismatch in China.

According to Xia's (2007) empirical analysis, the current currency mismatch problem in China is characterized by large foreign exchange reserves. By comparing several indicators measuring currency mismatch, the statistics shows that the degree of currency mismatch in China is rising. Although the huge foreign exchange reserve can help China to stand international financial shocks. It is also an indication of the increase in China's economic strength. However, the huge foreign exchange reserve has further aggravated the currency mismatch and increased the pressure on RMB to appreciate. This will further promote capital inflows, leading the foreign exchange reserve to further accumulate.

All the economic consequences mentioned above are the possible risks of internationalization of renminbi. But the internationalization of the currency can alleviate the problem of currency mismatch. One approach of internationalization of renminbi is to issue bonds in the international market backed by the country. In this way can China obtain resources, including tangible assets and financial resources, from the international market, thereby optimizing China's asset and liability structure and reducing the scale of foreign exchange reserves. (Shan, H. & Sun, S.; 2015) This could solve the problem of currency mismatch to a large extent.

5.4 Financial instability

From the study of the conditions for currency internationalization, we can see that financial stability is one of the important prerequisites. Scholars mainly analyze the impact of financial stability on the internationalization process from the perspective of economic strength, stability of policies, and soundness of financial markets. Mundell, R. A. (2003) believes that the success of a country's currency's internationalization depends on people's confidence in the value of the currency. Eichengreen, B. (2005) believes that the U.S. dollar's world dominant status is determined by the U.S.'s own policies, and that serious policy mistakes will lead to U.S. dollar being replaced by other currencies. As with the theory of currency substitution, if the U.S. can guarantee the stability of its economic policies, and the liquidity of the financial markets, US dollar will never lose its position in the international currency competition.

Xu, M.Q. (2015) believes that currency internationalization is closely related to the economic strength of a country and the liberalization of its capital account, and most importantly, the level of development of its financial system. Japanese yen is a typical example of how the financial system cannot meet the needs of its currency's internationalization, which finally contributes to the financial bubble and the economic recession.

With the internationalization of renminbi, the economic ties between China and the world is strengthened. Meanwhile, domestic economy will be affected by the world economy in a banned way. According to the theory of financial risks, if the financial crisis happens in one country, it will find a way to reach China and influence Chinese economy. During the process of RMB internationalization, China will gradually liberalize its capital accounts so that the RMB can be used more in the international financial market. However, at the same time, Chinese economy is also likely to be contaminated by international financial risks.

When the renminbi is internationalized, non-residents are capable to hold renminbi and its assets such as stocks and bonds in a large amount. Chinese financial market can become more unstable due to the capital flow. Especially the internationalization of renminbi will provide hot money with great opportunity to attack Chinese market and earn benefits. It will threaten the stability of China's financial system, even the whole economy.

5.5 To sum up

This chapter analyzes the potential risks of renminbi internationalization, including risks of policy failure, risks of currency speculation and currency mismatch and risks of financial instability.

Firstly, based on theory of “impossible trinity”, for an international currency issuing country, a highly open and unregulated financial market as well as a stable currency value are important prerequisites for the internationalization of currency. Therefore, a nation tends to choose to maintain the stability of the exchange rate and free flow of capital. Under this policy combination, the independence of a country’s monetary policy may be limited. And if the country chooses to let the exchange rate to float according to the market, it is hard for the government to maintain the value of the currency and implement exchange rate policy. And as currency substitution said, the devaluation of the currency will harm the confidence of non-residents to hold it, thus taking a toll on the international use of the currency.

Secondly, the internationalization of a currency is a double-edged sword to currency speculation. On the one hand, the financial liberalization brought about by the internationalization of the currency not only aggravates the fluctuations of asset prices, but also expand the channel for currency speculation attacks. On the other hand, the internationalization of local currency will also play a role in improving the country's financial system, which will reduce the risk of economic instability.

Thirdly, there is also a link between the internationalization of currency and the currency. The development of currency internationalization can meet the problem of currency mismatch, which could trigger financial crisis However, currency internationalization at the right time will also help to ease the problem of currency mismatch. And as renminbi gradually internationalized, the risks of financial instability are also increasing.

There can be other risks in renminbi internationalization, such as the obstruction from the US dollar and the competition from Japanese yen. But these are the risks most likely to happen and have a mutual effect toward each other. Together, these potential risks could have a significant impact on the country's economy.

6 Conclusion
6.1 Policy advice
The issue of RMB internationalization is a subject worth of attention nowadays. In the report made by the General Secretary Xi in the Nineteenth National Congress of the Communist Party of China, he specifically mentioned that socialism with Chinese characteristics has entered a new era and that it is necessary to build a great modern socialist country.[16] To achieve this goal, the RMB exchange rate reform and internationalization of renminbi are important strategies in the new era of China, which will have a major impact on global trade and investment. At the same time, if China wants to have greater say in the global agenda, these two issues are also inevitable.

The Governor of the People's Bank of China Zhou proposed that "*the RMB exchange rate will have a more stable foundation after the 19th National Congress of the Communist Party of China and the market will have a bigger role in determining the currency's value.*" The head of the State Administration of Foreign Exchange have also pointed out that "*the People's Bank of China, the central bank, has almost withdrawn its "regular" intervention in the foreign exchange market.*" [17]We can see that the exchange rate will be more market-oriented and more stable. The Central Bank issued a report on its website after the Nineteenth Congress, saying that it will continue to promote the internationalization of renminbi and strive to play a more stable role in the global currency system. At the same time, PBC also expects that the international use of renminbi will increase, so it may become a global reserve currency in the future.

President Xi Jinping's report in the opening ceremony of the 19th Congress promised to further open up the Chinese market to foreign investors. "*China's open door will*

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[16] Full text of Xi Jinping's report at 19th CPC National Congress(2017-11-4), China Daily. Available at http://www.chinadaily.com.cn/china/19thcpcnationalcongress/2017-11/04/content_34115212.htm

[17] PBOC says stable yuan likely soon(2017-10-19), China Daily. Available at http://english.cctv.com/2017/10/19/ARTIOU3psumfGczhapqTrv7m171019.shtml

not be closed, it will only be opened wider," [18]he said at the same time, China will deepen economic and financial reforms and further open its markets to foreign investors.

So we can conclude that the internationalization of renminbi will revive and develop at a high speed in the long term. The problem of renminbi internationalization is in fact the problem of financial hegemony. And the essence of internationalizing RMB is to improve the structure of domestic economic structure and ensure the economy can develop at a medium to high speed. Because the use of the currency is backed by the country's economic strength. This thesis proposes the following suggestions for the potential risks and the mentioned problems.

Firstly, continuing exchange reform will ensure the policy making autonomy. The time has come to do away with the dollar peg. Although the China's dollar link could promote export for the exchange rate stability. But it also affects the independence of monetary policy. RMB needs to increase the flexibility of its exchange rate, so that it could float in both directions. The dynamic equilibrium of RMB will not only enhances the independence of monetary policy, but also is a requirement for the internationalization of RMB.

Secondly, the rapid spread of financial risks to the entire entity is inseparable from the lack of financial supervision. Some economic entities do not have a clear sense of risk when they participate in financial activities. When the risk breaks out, there is no effective means to control it. It is of great importance for the Chinese government to introduce laws and regulations to control the financial risks contagion.

Thirdly, the regional cooperation is the key to the success of currency internationalization. The difference behind the success of Euro and the failure of yen is regional cooperation. Only when the Europe becomes the European Union can the euro become an international currency. And because of lack of support from neighboring countries, the Japanese yen's internationalization failed. Even the internationalization of the US dollar is backed by the entire US dollar-dominated world trading system and international financial system. US dollar has financial

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[18] China Will Further Open Its Economy and Deepen Reforms, Pledges Xi Jinping(2017-10-18),Fortune. Available at http://fortune.com/2017/10/18/china-xi-jinping-economy-reforms-party-congress/

hegemony in today’s world. If a country’s currency wants to compete with it, it must first develop an influence in the neighboring countries and become a regionalized currency before it goes to the world. Multilateral financial institutions are important platform to achieve this goal. In the past five years, China has established multilateral banks such as the Asian Infrastructure Investment Bank and BRICS Development Bank. It provides great opportunity for the international use of renminbi.

6.2 Conclusion

The main purpose of this thesis is to assess the potential risks during the process of renminbi internationalization, and if it could be controlled in the future.

The thesis first carried out a theoretical discussion and a summary of international experience. According to the discussion of the RMB internationalization, the author found that although the internationalization of RMB has developed rapidly, the degree of internationalization is very limited. In the past two years, due to the influence of government policies, the RMB internationalization has stagnated. Although it is generally believed that the renminbi will become an international currency in the future, we still need to ask: What are the prerequisites for a country’s currency to become an international reserve currency? Does China meet these conditions? If China’s controls on capital account continue, where is the future of renminbi internationalization?

The thesis uses different research approach, and after summarizing the relevant Chinese and foreign research results, it has formed a basic theoretical framework. Based on the analysis above, the thesis tries to find out the potential risks in the process of currency internationalization. And what factors may have an impact on it. In the end, it provides practical and feasible policy advice for the path of development of renminbi.

With respect to the risks of the internationalization of renminbi, after presenting the problems experienced by the existing international currencies and the unique situation faced by the renminbi's internationalization, the thesis concludes that the internationalization of the renminbi will face the problem of impossible trinity, currency substitution, currency mismatch and financial instability. These are the problems Chinese government has never encountered before, which bring a huge challenge on Chinese government's regulation capacity to control the risk of renminbi internationalization. This research project also believes that efforts will be made in the future to optimize the domestic financial and economic environment, improve relevant laws and policies, and gradually implement policy adjustments.

The internationalization of renminbi will not happen overnight. It will be a long and challenging process. In this process, China may encounter various kinds of unfavorable factors, which could induce the risk of RMB internationalization. Implementing appropriate policies will be conducive to the development of RMB internationalization and reduce the risk. At the same time, the country should seize the opportunity in the middle of the risks to create conditions for the further development of RMB internationalization.