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Can China's Fintech Industry Boost the Internationalization of the RMB?

중국의 RMB 국제화와

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Abstract

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Since the outbreak of the 2008 global financial crisis, doubts about the U.S. Dollar as an international reserve currency have been raised and these doubts brought about an international discussion on the transformation or reform of the international monetary system. In line with these economic trends, the People's Republic of China (PRC) launched a series of national ambitious strategies to internationalize its currency, renminbi (RMB). China has established various policies for the internationalization of the RMB, including the establishment of Asian Infrastructure Investment Bank (AIIB) and the implementation of the Belt and Road Initiative (BRI).

The purpose of this study is to examine how expansion of financial technology (FinTech) industry affects the internationalization of the RMB, among various policies pursued by

China for the globalization of the yuan. The preceding studies focused mostly on the liberalization of China's financial markets as a key driver of the RMB's globalization, but there was little discussion about the possibility of fintech innovation contributing to the currency's internationalization. Hence, the study aimed at investigating the link between expansion of the fintech industry and the internationalization of the RMB, mainly focusing on the analyses of how the fintech market can promote the RMB's internationalization.

After Chapter 1 introduces the purpose and the significance of the study, Chapter 2 provides the background of the RMB's internationalization and the general conditions that China should have in globalizing its currency. Chapter 3 examines the economic and financial status of China under the conditions set out in Chapter 2. Chapter 4 analyzes the possible effects of fintech industry's expansion on the globalization of the RMB, and the last chapter sums up the research findings. In conclusion, the findings point out that growth of the fintech industry can be a driver of the internationalization of the RMB by deepening financial reforms and enhancing the liberalization of the Chinese financial market.

Keywords: RMB Internationalization, Fintech, International Reserve Currency, Financial Reform, Liberalization of Financial Market

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Table of Contents

List of Figures

Abbreviations

RMB	Renminbi
IMF	International Monetary Fund
PRC	People's Republic of Chin
AIIB	Asian Infrastructure Investment Bank
BRI	Belt and Road Initiative
SDR	Special Drawing Rights
PBoC	People's Bank of China
ASEAN	Association of Southeast Asian Nations
FDI	Foreign Direct Investment
PPP	Purchasing Power Parity
FTZ	Free Trade Zone
CIPS	China International Payment Service
KITA	Korea International Trade Association
ODI	Outward Direct Investment
KIEP	Korea Institute for International Economic Policy
MSCI	Morgan Stanley Capital International
CCDC	China Central Depository & Clearing Co, Ltd
SOEs	State Owned Enterprises
SMEs	Small and Medium-sized Enterprises
P2P	Person-to-Person
NEEQ	National Equities Exchange and Quotations
AI	Artificial Intelligence

Chapter One - Introduction

1.1 Research Question

China's national crave for internationalizing its currency has been an arousing concern for both China's economy and the world's economy.[1] After the outbreak of 2008 global financial crisis, the role of the U.S. dollar as a proper international reserve currency was questioned and the rise of the China's financial power intrigued many economists' into the discussion about the new role of the China's currency, RMB in the world's economy.[2] With the RMB served as a stabilizer to the world's daunted economy, the clout of Chinese economy within the world's economy has substantially expanded.[3] Consequently, as of October 1, 2016, Chinese yuan was officially included in the International Monetary Fund (IMF)'s Special Drawing Rights (SDR) currency basket and it was the first currency that was recognized as a reserve currency among the emerging economies. According to the statistics from the IMF and the World Bank, China's contribution to global growth was predicted to reach around 35% by 2019.[4]

However, despite the world's positive outlook on the ascendancy of the RMB, China has been facing difficulties in internationalizing its currency.[5] Although China's

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[1] 한국은행, "위안화 국제화 추진과정에서의 리스크," 국제경제정보, 제 2012-2 호, 2012. 1. 3, p. 1. (The Bank of Korea, "Risk in the Course of the Yuan's Internationalization," International Economic Information, Vol. 2012-2, January 3, 2012, p. 1.) http://www.knsi.org/knsi/admin/work/works/bok_120105.pdf (accessed August 22, 2018)

[2] 이윤석, "위안화 국제화 현황과 향후," 금융 Vision, Insight and Policy 시리즈, 2012-06, May 2012, p. 3. (Yoonseok Lee, "The Status and Future of Yuan Internationalization," Finance Vision, Insight and Policy Series, p. 3). http://www.kif.re.kr/KMFileDir/129809359519451250_FVIP2012-06.pdf (accessed August 22, 2018)

[3] Ibid, p. 2.

[4] Hayden Briscoe, "Chinese Bonds All You Need to Know," UBS Asset Management, January 2018, p. 5.

[5] Damian Tobin, "The Development and Transformation of the Financial System in the People's Republic of China," ADBI Working Paper Series, No. 825, March 2018. https://think-asia.org/bitstream/handle/11540/8109/adbi-wp825.pdf?sequence=1 (accessed October 15, 2018)

financial system has constantly gone through subsequent advancements since the launch of a series of financial reforms in 1978, it is still vulnerable to the financial risks stemming from internationalizing the local currency. Hence, it is reckoned that China should search for more innovative tools that it can harness to ensure the establishment of stronger financial infrastructure and the internationalization of the RMB.

Fortunately, backed up by the advancement of ICT technology, global finance has entered a new era of fintech, in which technological innovations lead and reshape the finance. More notably, China is the forerunner of the global fintech market now, though it was not a precursor of the fintech industry. The volume of fintech transactions in China reached about RMB 500 million and its whole fintech market size exceeded RMB 12 trillion (USD 1.87 trillion) by the end of 2015.[6] Likewise, China has the largest portion of digital access population to payment, money transfer, wealth management, and online shopping.[7] Against this backdrop, the paper aims to investigate whether the fintech development in China can or cannot promote the international use of the RMB. Hence, it will mainly focus on analyzing the major impact of fintech market expansion on the RMB internationalization.

Before the research, the paper clarifies the definitions of the internationalization of the RMB, and fintech. According to a researcher of Korean Institute of Finance, Lee, the internationalization of the RMB means that the RMB is used as normal money in the world economy, functioning as a medium of exchange, a means of saving value and an

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[6] Mark Preen, "China's FinTech Industry," China Briefing, January 22, 2018. http://www.china-briefing.com/news/chinas-fintech-industry/ (accessed October 24, 2018)
[7] William A. Barnett, "Introduction," International Symposia in Economic Theory and Econometrics, Vol. 25, 2018, p. 1. https://www.emeraldinsight.com/doi/abs/10.1108/S1571-038620180000025001 (accessed October 11, 2018)

accounting unit.[8] In reference to this scholarly definition, this paper defines the internationalization of RMB as the phenomenon in which the RMB is used as a medium of exchange in the cross-border settlements which increases the RMB portion in current account and capital account. In general, fintech or fintech industry (the combined term of finance and technology) refers to a set of technological innovations that are used in the financial sectors for providing diverse finance-related services. The study will resort to specific fintech innovations or services that embrace e-commerce, third-party online payment, online private bank and money market funds.

1.2 Literature Review

After the outbreak of 2008 Financial Crisis, a new wave of study about the international financial reform had emerged and there were many precedent studies discussing the phenomenon of the RMB's globalization. When the international status of U.S. dollar began to be questioned, a number of scholars viewed optimistically about the international use of the RMB. For instance, McCauley viewed RMB internationalization as a main drive for accelerating China's financial development. He concluded, in his paper, that although global use of the RMB could raise a complex relationship with the capital controls, China remains to operate effective capital controls and this helps China to lessen the risk of foreign currency borrowing.[9] Furthermore, some scholars tried to measure the probability of the RMB internationalization using diverse indictors. Cruz contended that the crucial attribute for becoming an international currency are the scale, stability and liquidity of the currency since these factors can

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[8] Yoonseok Lee, Finance Vision, Insight and Policy Series, p. 4.

[9] Robert McCauley, Renminbi Internationalisation and China's Financial Development," BIS Quarterly Review, December 2011. https://faculty.washington.edu/karyiu/confer/sea12/papers/SC12-111%20McCauley.pdf (accessed September 23, 2018)

underpin the well-functioning of financial markets. Thus, he discussed the status of China's financial markets using the liquidity conditions which are largely divided into two dimensions; the one embraces the elements of funding liquidity, the availability of credit and the ease on leverage, and another one refers to market liquidity.[10]

As the discussion on the RMB internationalization deepened, many studies focused on analyzing both the pros and cons of the RMB internationalization. Zhang and Tao discussed the benefits and costs of RMB internationalization indicating that the benefits include the promotion of the development of the financial market, and expansion of firms in the PRC, while the costs include some transitional risks.[11] Furthermore, Gao and Yu discussed the advantages and problems of the RMB internationalization by measuring the international and regional use of the RMB in reference to diverse factors such as RMB deposits and the issuance of RMB-denominated bonds. They argued that since the market forces determine the success of RMB internationalization, region-wide use of the RMB is important.[12] Zhang also investigated the problems behind the RMB internationalization arguing that the progress of RMB invoicing is delayed in relative to the rapid progress of RMB settlement. Therefore, the launch of RMB internationalization makes it harder for the PBoC to manage the interest rates and exchange rates of RMB.[13]

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[10] Prince Christian Cruz, "The People's Republic of China's Financial Markets: Are They Deep and Liquid Enough for Renminbi Internationalization?" ADB Working Paper Series, No. 477, April 2004. https://www.adb.org/sites/default/files/publication/156332/adbi-wp477.pdf (October 2, 2018)

[11] Liqing Zhang, Kunyu Tao, "The Benefits and Costs of Renminbi Internationalization," ADB Working Paper Series, No. 481, May 2014. https://www.adb.org/sites/default/files/publication/156336/adbi-wp481.pdf (September 27, 2018)

[12] Haihong Gao, Yongding Yu, "Internationalisation of the Renminbi," BIS Papers, No. 61, 2011. https://www.bis.org/repofficepubl/arpresearch200903.05.pdf (accessed August 30, 2018)

[13] Ming Zhang, "Internationalization of the Renminbi: Developments, Problems and Influence," New Think and the New G20 Series, No. 2, March 2015. https://www.cigionline.org/sites/default/files/new_thinking_g20_no2web_0.pdf (September 2, 2018)

Comprehensively, many precedent studies focused on the liberalization of China's financial market as a crucial driver for the RMB's globalization.

Based on the general argument claimed in the previous studies, this paper seeks to supplement the previous argument and deepen the discussion on the RMB globalization by proposing that the rise of fintech industry in China can consolidate robust financial infrastructure, thus contributing to the internationalization of the RMB. While there hasn't been an academic attempt to integrate the discussions about the RMB internationalization and the fintech industry, there are researches conducted on how the development of fintech renews the traditional financial system. For example, Demertizis and Merler tried to show that fintech has a potential to change and complement Europe's bank-based financial system.[14] Likewise, Schindler claimed that fintech has a great potential to transform the financial services and affect the financial stability.[15] Moreover, Juengerkes, through the evidences of several European fintech firms, demonstrated that fintech creates a better financing environment for business and consumers as they efficiently collaborate with the banks.[16] Most notably, according to Milne, the European Credit Research Institute (ECRI) Commentary discussed that the use of fintech in financial markets are considerably effective in promoting the European policy objectives. Among various strategies available for accomplishing the European policy objectives,

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[14] Maria Demertzis, Silvia Merler, "Capital Markets Union and the Fintech Opportunity," Journal of Financial Regulation, Vol. 4, Iss. 1, 1 March 2018.

[15] John Schindler, "Fintech and Financial Innovation: Drivers and Depth," Finance and Economics Discussion Series Working Paper, No. 2017-081, 10 August 2017. https://doi.org/10.17016/FEDS.2017.081. (accessed August 26, 2018)

[16] Juengerkes Biorn Erik, "FinTechs and Banks – Collaboration is Key." In: Chishti S, Barberis J (eds), The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries, London: Wiley, 2016. ISBN:9781119218906. https://doi.org/10.1002/9781119218906.ch47 (https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119218906.ch47) (accessed October 26, 2018)

Milne mainly focused on the effects of fintech development on the European financial markets.[17]

Based on the literature review, this paper attempts to argue whether the rapid development of fintech industry in China can accelerate the internationalizing progress of the RMB by eliminating the chronic obstacles. Albeit biasedly, it aims to specifically concentrate on the effects of fintech on the internationalization of the RMB given that fintech has been increasingly playing a key role in reshaping the financial system in China and the rest of the world.

1.4 Significance of Research

This research is significant in that it seeks to find out whether development of fintech industry in China can contribute to the internationalization of China's currency， which is one of the China's major foreign policy objectives. Some scholars have already highlighted the potential of fintech development as a booster to the internationalization of RMB. However, there is a lack of research papers discussing either the influence of fintech industry on the RMB internationalization. Hence, this thesis intends to contribute to the international economic studies by broadening the academic discourse on the internationalization of the RMB in tandem with the development of fintech industry in China.

[17] Alistair Milne, "Achieving European Policy Objectives through Financial Technology," European Credit Research Institute, No. 17, 16 November 2015. https://core.ac.uk/download/pdf/148893001.pdf (accessed October 3, 2018)

1.5 Research Methodology/ Framework

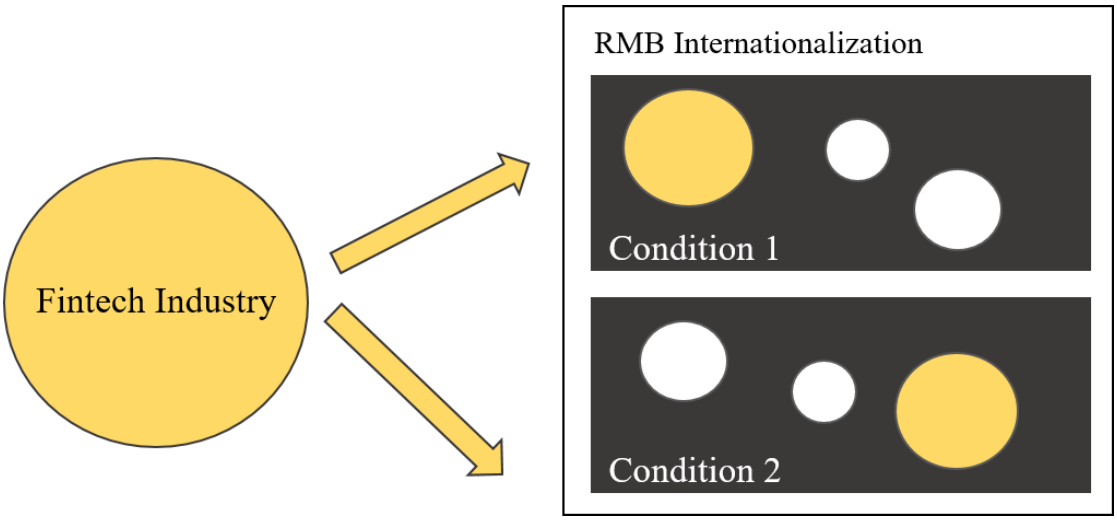
The research is conducted in a qualitative methodology by referring to secondary data including research papers and the available statistics. More specifically, since it is almost the first time making a linkage between the RMB internalization and China's fintech development, it attempts to introduce a logical connection between the two factors under the assumption that fintech development in China can possibly support the internationalization of the RMB. Therefore, the paper briefly explains the framework of the research by providing the conditions required to achieve internationalization of a local currency. Then, it investigates the status of China's economy and finance to figure out which conditions should be improved and complemented to drive the RMB internationalization. Lastly, it analyzes the impact of fintech development on the RMB internationalization, specifically focused on conditional flaws that need to be satisfied, and then draws out a conclusive remark.

The figure 1 and 2 provide a detailed description of a comprehensive framework and research targets. Figure 1 demonstrates that the use of fintech innovations can help make up some insufficiencies of the conditions required to achieve the RMB internationalization. Given that the currency internationalization requires two major conditions which are the economic sustainability and finance liberalization, the research will observe the factors that affect the changes of current account and the capital account which reflect the internationalization of a local currency in light of economic and financial sectors, respectively. Among the four current account indicators introduced by the Bureau of Economic Analysis; trade, net income, direct transfers, and asset income,[18]

[18] Kimberly Amadeo, "Current Account and Its Four Components," The Balance, April 11, 2018. https://www.thebalance.com/current-account-definition-and-4-components-3306265

it will resort to the cross-border trade trends and flow of foreign direct investment (an asset income component) to calibrate the economic sustainability. For evaluating the liberalization of capital account, which is usually tracked by the flow of funds and money in the form of investments and loans,[19] it will observe the trends of three major financial markets which include foreign exchange market, stock market, and money market funds. After the observation, it will analyze the shortcomings of the factors that retard the RMB internationalization and then explore the effect of fintech application in enhancing the conditional setbacks which could, in turn, accelerate the internationalization of the RMB.

Figure 1. Comprehensive Framework



[19] The Economic Times, "Definition of 'Capital Account'." https://economictimes.indiatimes.com/definition/capital-account

Figure 2. Research Targets

	REQUIREMENTS	CROSS-BORDER SETTLEMENTS	FACTORS	SHORTCOMINGS	FINTECH SERVICES	IMPACT OF FINTECH
CONDITION 1	Economic Growth Sustainability	Current Account: A nation's net income	Balance of Trade	?	E-commerce	?
			Investment Income		Third-Party Online Payment	
CONDITION 2	Finance Liberalization	Capital Account: A net change in ownership of national assets	Foreign Exchange Market		Online Private Bank	
			Stock Market		Money Market Funds	
			Bond Market			

Chapter Two – The Status of China's Economy and Finance in Light of the RMB Internationalization

This chapter provides the overview of the internationalization of China's currency. It first demonstrates the contextual background on the RMB internationalization, and then discusses the purposes or significance of internationalizing the RMB. Additionally, it discusses the essential conditions required for the RMB to become an international reserve currency.

2.1 The Background for the Internationalization of the RMB

This section demonstrates that ascendancy of the yuan during the global financial crises and Asian countries' increasing demand for regional financial cooperation profoundly have mapped out the idea of internationalizing the use of yuan.

There have been frequent financial crises around the world since the 1990s. The common cause for the crises was countries' mismanagement over their financial risks within the unstable international monetary system. The current international financial system ought to be unstable and unfair in a condition that the dollar leads the international monetary system and Asian countries were heavily dependent on the dollar. Since the emerging economies kept their currencies rigidly pegged to the dollar, they reacted quite sensitively even to the very small changes in Federal Reserve System's monetary policies. Light fluctuation not only caused violent currency value fluctuations within emerging economies, but also incurred financial crises.[20]

[20] 훠웨이동, 중국 위안화지역 연구, 서울: 경지출판사, 2018, p. 43. (Huowei Dong, China RMB Bloc Study, Seoul: Kyungji Press, 2018, p. 43.)

However, while fluctuation of US dollar afflicted emerging economies such as Korea, Thailand, and Malaysia, China's yuan worked as a stabilizer during the financial crises. As China adopted a fixed exchange rate system, the circulation of the yuan was less susceptible to the financial shock generated by dollar fluctuation. Hence, the use of Chinese yuan prevented sharp deteriorations in current-account positions of emerging economies. Additionally, China's practice of adequate domestic monetary policies enabled the regional currency to maintain a stabilized growth of regional economy by reducing the high and volatile inflation rate.

In the face of the various financial crises, not only the world witnessed the ascendancy of China's financial power, but also diverse economic bodies of East Asia began to recognize the importance and urgency of the need for regional monetary and financial cooperation. Hence, various cooperative agreement, including the Chiang Mai initiative, have been concluded and regional monetary cooperation has entered the rapid development phase. The Chiang Mai initiative refers to the 'currency swap agreement' signed by 10 Association of Southeast Asian Nations (ASEAN) countries, China, Japan, and Korea at the Asian Development Bank's annual conference opened in Chiang Mai, Thailand, in 2000. More importantly, the outbreaks of the 2008 subprime crisis and the sovereign debt crisis in the US prompted the emerging economies to appeal for the reform of the international monetary system and to search for a new primary reserve currency that would replace the dollar.[21]

Against this backdrop, China officially announced its plan to embark on the internationalization of China's yuan. In March 2009, the National People's Congress and

[21] Huowei Dong, China RMB Bloc Study, Seoul: Kyungji Press, p. 30.

the National People's Political Consultative Meeting formulated the internationalization of the yuan by reporting its plan to expand the role of the yuan in the settlement of international trade transactions.[22] Upon the introduction of a RMB-denominated international payments system in July of the same year, China initiated yuan-denominated trade transactions on trial with five cities including Shanghai, and Hong Kong, Macau and ASEAN. From March 2011, the yuan trade settlement zone, which was restricted to some parts of China, was expanded throughout China and partly to the rest of the world.[23] Structurally, China has been promoting the internationalization of its currency through diverse routes such as systematic reforms, revisions of related legal regulations, and foreign exchange market reforms for free convertibility.

2.2 Significance of the RMB Internationalization

China's long-term ambition for internationalizing the yuan is quite clear considering that there are a number of financial and economic goals to achieve through RMB internationalization. China seeks to elevate its status in the international financial markets, lower management costs of foreign exchange reserves, suppress the possibility of a financial crisis, and facilitate economic growth by enabling the yuan to perform the functions of an international currency; a medium of exchange, a means of storing value, and an accounting unit.

Firstly, China aspires to secure an enormous financial clout commensurate with its elevated economic power.[24] Although China has become the world's second-largest

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[22] Yoonseok Lee, Finance Vision, Insight and Policy Series, p. 2, 4.
[23] Ibid, p. 7.
[24] The Bank of Korea, "Risk in the Course of the Yuan's Internationalization," International Economic Information, Vol. 2012-2, January 3, 2012, p.2.

economy, China has little influence in the international financial market due to slow development in its financial system. As such, China aims to strengthen its status by increasing transactions of its currency-denominated bonds and loans in global financial markets.[25]

Secondly, China can efficiently manage the foreign exchange reserves as its economy could escape from a dollar trap by barely depending on the dollar.[26] Since China holds over USD 3 trillion foreign exchange reserves, most of which are consisted of the US dollar, globalization of the yuan could reduce the risk of loss on valuation caused by the depreciation of the dollar.[27]

Moreover, RMB internationalization can prevent a financial crisis as it enables China to manage the financial risks more properly. For instance, the currency mismatch between foreign currency assets and liabilities could be mitigated if the yuan becomes available for international borrowing, reducing the risk of a financial crisis.[28]

Lastly, China can foster the economic growth through the benefits of reducing trade transaction costs and exchange risk, and increasing the efficiency and convenience of financing institutions. In this way, China can promote trade and investment. It can also earn seigniorage income through the issuance of the its currency as the reserve currency.[29]

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[25] Yoonseok Lee, Finance Vision, Insight and Policy Series, p. 4.
[26] The Bank of Korea, "Risk in the Course of the Yuan's Internationalization," International Economic Information, Vol. 2012-2, January 3, 2012, p. 2.
[27] Yoonseok Lee, Finance Vision, Insight and Policy Series, p. 4.
[28] Yoonseok Lee, Finance Vision, Insight and Policy Series, p. 4.
[29] The Bank of Korea, "Risk in the Course of the Yuan's Internationalization," International Economic Information, Vol. 2012-2, January 3, 2012, p. 2

2.3 Conditions Required for RMB to Become an International Reserve Currency

This section provides the required conditions for determining the international reserve currency status. It first observes the diversity of conditions suggested in the academia, and then comprehensively ascertains which conditions this paper will be centrally based on to analyze the international status of the China's currency, RMB.

Various conditions for rendering a local currency into an international currency have been introduced by scholars and institutions. Overholt, the representative of Hong Kong Fung Global Institute proposed three main conditions required as an international currency in his book; 1) The large size of domestic economy and maintenance of the economic growth, 2) The availability of a robust and liberalized capital market, and 3) The existence of reliable institution which manages and operates the economy and market, efficiently.[30] Likewise, the IMF measured the degree of currency's internationalization using indexes of international usage, economic power, and finance competitiveness. Detailed measurements of international usage were the degree of currency use, the degree of capital and trade use, and the degree of foreign exchange market use. Detailed indicators measuring economic and financial competitiveness were economic scale, trade network, investment aptitude, capital transaction openness, and quantitative financial depth.[31] Moreover, many scholars including Taguchi, Hartman, and Tung used 12 indicators to estimate the likelihood of currency internationalization. The 12 indicators were outward direct investment ratio (ODIR), trade ratio (TR),

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[30] 윌리엄 오버홀트, 위안화의 역습, 서울: 21 세기 북스, 2016, p. 13. (William Overholt, Renminbi Rising: A New Global Monetary System Emerges, Seoul: 21 century Books, 2016, p. 13.)
[31] he Bank of Korea, "Risk in the Course of the Yuan's Internationalization," International Economic Information, Vol. 2012-2, January 3, 2012, p. 4.

domestic bond ratio (DBR), bank loan ratio (BLR), foreign exchange transaction ratio (FETR), market capitalization ratio (MCR), GDP ratio (GDPR), exchange rate volatility (ERV), currency internationalization degree index in the previous period (CIDI [-1]), FDI ratio (FDIR), Capital account opening index (CAOI).[32] A Korean professor in College of Chinese in Hankuk University of Foreign Studies also explained that the elementary conditions for currency internationalization include the currency stability, the currency's convertibility, and the international acceptance and usage of the currency.[33] On top of that, Chinn and Frankel stressed the roles of an international currency which includes store of value, medium of exchange, and the unit of account.[34]

Among the numerous conditions and roles suggested by the experts, this paper focuses on the two main factors that are most essential for determining an international reserve currency. First, the country should have considerable economic scale with the constant sustainability. Second, for strengthening the international usage of the currency and the currency's convertibility, the liberalization of capital market or financial market is vital. In order to demonstrate these conditions more precisely, the paper will investigate the current account and capital account to measure the growth of economy and liberalization of capital market, respectively.

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[32] Chenyuan Tung, "Renminbi Internationalization: Progress, Prospect and Comparison," China & World Economy, Vol. 20, No. 5, 2012, p. 66.
[33] 오승렬, "중국 위안화(元貨) 국제화의 제약요인 연구," 중국학연구, 제 53 권, 2010. 9 월, p. 244. (Seongryul Oh, "A Study on the Structural Constraints of China's Economy on RMB Internationalization," China Study, Vol. 53, September 2010, p. 244.)
[34] Menzie Chinn, Jeffrey Frankel, "Will the Euro Eventually Surpass the Dollar as Leading International Reserve Currency," NBER Working Paper Series 11510, July 2005, p. 5. https://www.nber.org/papers/w11510.pdf (accessed August 21, 2018)

Chapter Three – The Status of China's Economy and Finance in Light of the RMB Internationalization

China has already applied a two-track strategy to ascend its currency to an international status; one is to expand the usage of the RMB in international trades and investment, and another is to liberalize its capital account.[35] Against this backdrop, this chapter observes the achieved status of China's economy and financial market under the operation of the two-track strategy. After the observation, it will briefly analyze the comprehensive circumstances of China's economic growth and financial liberalization and address the weak conditions that need to be improved.

3.1 The Sustainability of China's Economic Growth

In terms of economic scale, China is in an advantageous position to internationalize the RMB. China has constantly promoted the use of its currency in the payment of international trade and investment. Consequently, there has been an increase in the share of the RMB in the foreign exchange reserves of other Asian countries, raising the possibility of internationalizing the RMB. In this context, the following sections will demonstrate China's growing economic scale, and the size of its cross-border trades and investment.

[35] Yiping Huang, "Paths to a Reserve Currency: Internationalization of the Renminbi and Its Implications," ADBI Working Paper Series, No. 482, May 2015, p. 1.

3.1.1 China's Economic Scale

China is the second largest economy, next to the United States, with a population of 1.4 billion.[36] China's economic growth has been accelerated by the economic policy shift under the Deng Xiaoping's leadership in December 1978 when the Central Committee of the Communist Party determined to integrate the Chinese economy into the international economic system.[37] More specifically, China's economic growth in the post-reform era was substantially driven by massive inflow of foreign capital through both trade and investment, and structural transformation from a controlled economy to a more liberal form of economy.[38] Spurred by the inflow of foreign direct investment (FDI), a current account surplus, and the liberalization of the financial market, China now has the most amount of foreign exchange reserve world widely.[39] According to the State Administration of Foreign Exchange's data, the amount of China's foreign exchange reserve peaked as much as US$ 3843018 million in 2014.

Figure 3. The Scale of China's Foreign Exchange Reserves

Foreign Exchange Reserves (100 million US$)	2012	2013	2014	2015	2016	2017
China	33115.89	38213.15	38430.18	33303.62	30105.17	31399.49

State Administration of Foreign Exchange
Publish Organization: People's Bank of China (PBoC)

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[36] The World Bank, "The World Bank in China," Last Updated: April 19, 2018. http://www.worldbank.org/en/country/china/overview (accessed September 4, 2018)
[37] Victor D. Lippit, "Introduction: China's Rise in the Global Economy," Review of Radical Political Economics, Vol. 43, No. 1, 2011, p. 5.
[38] Yanrui Wu, China's Economic Growth: A Miracle with Chinese Characteristics, London: Routledge, 2004. http://web.b.ebscohost.com.libproxy.snu.ac.kr/ehost/ebookviewer/ebook/bmxlYmtfXzEwNTk4Ml9fQU41?sid=28d11bee-6323-4a99-a56d-f259eb217091@sessionmgr120&vid=0&format=EB&rid=1 (accessed September 4, 2018)
[39] 남수중, "중국의 외환보유액 결정요인 분석과 활용데 대한 시사점," 한중사회과학연구, 제 11 권 제 2 호, 2013, p. 87. (Soojoong Nam, "A Study on the Determinants of International Reserves in China and its Implications," Korean-Chinese Social Science Studies, Vol. 11 No. 2, 2013, p. 87.)

On top of that, according to figures from the World Bank, the real GDP calculated in purchasing power parity (PPP) showed that Chinese economy has surpassed that of the US's as of 2016.[40] Although nominal GDP of the US is still slightly higher than that of the China's, the annual GDP growth of China (6.9%) in 2017 almost triples that of the US (2.3%) meaning that Chinese economy is gradually catching up with the US economy.[41]

3.1.2 China's International Trade and Investment

China is the most dominant trading partner of many countries including its neighboring Asian countries. The official data shows that China has beaten the US in annual exports of goods and services since 2013. As of June 2016, China accounted for 13.2% of the world's trading exports, 9.3% of the imports, and 11.2% of the total world trade, becoming the second-largest trading nation next to the US.[42] In particular, the portion of China's trade in total intra-regional exports has incrementally risen from around 12% in 1990 to 30% in 2017.[43] As a result, many Asian countries have become highly dependent on the regional trades with China making the role of China in the rest of Asian economy more prominent than ever before.

The sudden rise of cross-border transactions is largely attributable to China's ambitious measures for the internationalization of the RMB. The measures included the launch of the Shanghai Free Trade Zone (FTZ) in 2013 and the broad expansion of the

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[40] Andrea Willige, "The World's Top Economy: the US vs China in Five Charts," World Economic Forum, December 5, 2016. https://www.weforum.org/agenda/2016/12/the-world-s-top-economy-the-us-vs-china-in-five-charts/ (accessed September 4, 2018)
[41] The World Bank, World Development Indicators, Last Updated on August 28, 2018. data.worldbank.org (accessed September 4, 2018)
[42] Korea International Trade Association, http://stat.kita.net/stat/world/major/ChinaStats01.screen (accessed September 3, 2018)
[43] Luu Nguyen Trieu Duong, "China's Growing Role in Asian Trade and its Impact," Livemint, June 12, 2018. https://www.livemint.com/Opinion/b4HG8DwIj79Oi0rYBG5PFM/Chinas-growing-role-in-Asian-trade-and-its-impact.html (accessed September, 18, 2018)

FTZ area forsake of simplifying the cross-border transactions via an advanced settlement system. Moreover, the PBoC established China International Payment Service (CIPS) in October 2015 which improved the cross-border clearing efficiency[44] and created an innovative payment system that embraces the domestic and international RMB payment.[45]

In practice, backed by the expansive use of RMB (trade settlement) bloc, the volume of RMB-denominated transaction settlement is constantly on the rise. According to the official figures from Korea International Trade Association (KITA) and the PBoC, the weight of RMB payment in the world transactions had gradually increased from 6.9% in 2011 to 22.3% in 2014.[46] It was already widely discussed by many scholars such as Yoshitomi (2007) that exchange rate volatility may disturb the enlargement of production and distribution networks in East Asia by increasing risk and uncertainty in the value-added chain structure. In this respect, use of a common currency for settling the intra-regional trades can reduce the risks stemming from the exchange rate volatility by eliminating the need for foreign exchange trades. The exchange rate volatility refers to the risk associated with unexpected fluctuations in the exchange rate, and affects the volume of international trades and the balance of payments.[47] Therefore, the use of the RMB for trade payment is rather preferred by the Asian economies given that the

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[44] Pierre Gramegna, "Where do you Renminbi? A Comparative Study of Cross-border RMB Centres," Price Waterhouse Coopers, p. 28. https://www.pwc.lu/en/china/docs/pwc-where-do-you-renminbi.pdf (accessed October 11, 2018)

[45] Xinhua, "China to Launch 2nd Phase of Cross-Border Interbank Payment System," ChinaDaily, June 22, 2017.

[46] 김세호, "중국 위안화, 달러대신 세계 무역 결제 매년 30% 씩 증가해," The Euro Journal EKN News, May 12, 2015. (Saeho Kim, "Chinese Yuan, instead of Dollar, increasing 30% annually in global transaction payment," ChinaDialy, June 22, 2017. http://www.eknews.net/xe/458708 (accessed September 21, 2018)

[47] Ozturk, Ilhan, "Exchange Rate Volatility and Trade: A Literature Survey," International Journal of Applied Econometrics and Quantitative Studies, Vol. 3, No. 1, 2006, p. 86.

influence of the RMB is rising in the region and its role as a regional currency is less questioned.

Along with its growing importance in the regional and world trades, China is becoming the top investing country in the world. According to an empirical research conducted by IMF, FDI is an important component for the economic growth in developing countries as it enables them to access to advanced technologies.[48] Hence, the FDI net inflows and FDI net outflows (outward direct investment (ODI)) of China can be another decent indicators for observing China's economic growth and, thus, underpinning the internationalization of the RMB.

In tandem with the economy transition and adoption of the open economic regimes, the absorption of FDI has been a part of China's opening policy which aimed at consolidating a better business environment and distribution of investment.[49] The 2018 World Investment Report published by UNCTAD indicated that China ranked the world's second largest FDI recipient after the United States. Although US ranked the top in terms of FDI inflows both in 2016 and 2017, the volume had decreased from USD 457 billion to USD 275, while China went through a slight increase in FDI flows from USD 134 billion in 2016 to USD 136 billion in 2017. The statistics released by the Ministry of Commerce People's Republic of China has also shown that the actual use of

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[48] Eduardo Borensztein, "How Does Foreign Direct Investment Affect Economic Growth," IMF Working Paper, Vol. 1994, Iss. 110, September 1994, p. 86.
[49] "China: Foreign Investment," Santander, September 2018. https://en.portal.santandertrade.com/establish-overseas/china/foreign-investment (accessed September 20, 2018)

foreign investment in China surged to US 52.66 billion dollar (RMB 345.59 billion), which is an increase of 3.6% on yearly basis.[50]

In terms of ODI flow, although China's ODI flows remains at a low rate compared to the FDI flows, it ranked third in the world next to the US and Japan reaching USD 127,560 million.[51] China saw a remarkable annual growth of ODI in 2016 with the surge of 49.3% in non-financial ODI sector, but it came to a halt in 2017 as the capital outflows endangered China's financial stability.[52] Nevertheless, it is prospected that China will steadily increase ODI in a hope to foster innovations and international economic collaboration.[53] For example, China displays high investment rate in major countries tied to the Belt and Road Initiative (BRI) compared to other areas. Accordingly, China's outward FDI in non-financial sector in BRI countries recorded over USD 120 billion in 2017 and its share of investment in them increased to 12% of total ODI from 8% in 2016.[54] Also, Chinese enterprises have increasingly expanded into the global market and actively participated in outbound investment, strengthening their global competitiveness. Particularly, China's outbound investment in tertiary industry such as service sectors has been rapidly increasing since 2011.[55]

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[50] Statistics, "Statistics of FDI in China in January-May 2016," Ministry of Commerce People's Republic of China, July 9, 2018. http://english.mofcom.gov.cn/article/statistic/foreigninvestment/201807/20180702767267.shtml (accessed September 20, 2018)

[51] Yanting Wang, "Outward Foreign Direct Investment from China: Recent Trend and Development," The Chinese Economy, Vol. 50, 2017, p. 358.

[52] Huang, Betty, "China, ODI from the Middle Kingdom: What's next after the big turnaround?" China Economic Watch, February 2018, p. 1. https://www.bbvaresearch.com/wp-content/uploads/2018/02/201802_ChinaWatch_China-Outward-Investment_EDI.pdf (accessed September 23, 2018)

[53] Yanting Wang, "Outward Foreign Direct Investment from China: Recent Trend and Development," The Chinese Economy, Vol. 50, 2017, p. 356.

[54] Betty Huang, China Economic Watch, p. 2.

[55] Yanting Wang, "Outward Foreign Direct Investment from China: Recent Trend and Development," The Chinese Economy, Vol. 50, 2017, p. 359.

Thanks for the increase in China's international trades and investment, the RMB is enjoying an extended global usage in diverse sectors. First, the share of the yuan in foreign exchange reserves is on the rise. Although the data from the IMF indicates that Chinese yuan accounts for only 1% of the world's total foreign exchange reserves while the US dollar takes up 63.5% of them, Chinese currency still has a potential to expand its share through various routes. For instance, the European banks has begun to include the yuan in their reserves, predicting that the RMB would have a bigger global influence in a near future.[56] Likewise, according to an economic report published by Korea Institute for International Economic Policy (KIEP), the amount of RMB included in the foreign exchange reserves of 10 ASEAN countries, Mongolia, and the North Korea reached to RMB 81400 million only in 2005.[57] Moreover given that 82% of RMB users use RMB for trade settlement,[58] the usage of RMB is prospected to be expanded with the promotion of China's international trades and investment. Second, usage of RMB in cross-border settlement is also on the rise. According to the Financial Statistics Report issued in October 2018 by PBoC, the RMB cross-border trade settlement reached RMB 431.95 billion along with the increased RMB settlement of direct investment of RMB 182.04 billion in October 2018.[59]

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[56] Eshe Nelson, "Europe's Central Banks are Starting to Replace Dollar Reserves with the Yuan," Quartz, January 17, 2018. https://qz.com/1180434/europes-central-banks-are-starting-to-replace-us-dollar-reserves-with-the-chinese-yuan/ (accessed September 20, 2018)

[57] 윤덕룡, "중국 위안화의 국제화 추진과 시사점," 대외경제정책연구원, Vol. 9, No. 7, 2009. 3. 16, p. 3. (Dukryong Yoon, "The promotion and significance of Chinese yuan," Korean Institute of Economy Policy, Vol. 9, No. 7, March 16, 2009, p. 3.)

[58] HSBC, 2017 Renminbi Internationalization Survey Report, February 2018, p. 4. https://www.business.hsbc.com.cn/-/media/library/markets-selective/china/pdfs/2017-renminbi-internationalisation-survey-report-en.pdf (accessed October 25, 2018)

[59] The People's Bank of China, Financial Statistics Report (October 2018), November 14, 2018. (accessed December 7, 2018) http://www.pbc.gov.cn/english/130730/3660709/3660732/3663768/index.html

3.2 Liberalization of China's Financial Market

Liberalization of the financial market is crucial for China to facilitate the internationalization of its currency because it helps reduce the fluctuations of foreign capital flows and increase the share of RMB-denominated assets owned by global investors. Hence, in the following sections, the paper investigates how China strives to liberalize its financial market on multiple fronts. More specifically, it will observe the current status of three major financial markets, namely foreign exchange market, stock market, and bond market, and then report shortcomings that each market needs to overcome.

3.2.1 Foreign Exchange Market

Following the series of financial reforms, China's foreign exchange market, which forms an important part of the China's economy, has increasingly shown a growth in the transaction volume. According a report published by International Finance Center, thanks to the trade recovery, the average monthly volume of foreign exchange transactions increased from USD 493900 million in 2016 to USD 524900 million in 2016, up by 6.3%. Most notably, the transaction volume in the second half year recorded USD 5729 with the government's partial deregulation in capital controls.[60]

Most of foreign exchange transactions in China are settled through currency swaps. Currency swaps refer to a type of foreign exchange transaction exchanged at certain point of time according to the exchange rate agreed on the contract date.[61] China

[60] 국제금융센터, "2018 년 중국 금융시장 전망, Issue Analysis, 2018. 1. 4, p. 4. (International Finance Center, "2018 China's Financial Market Outlook, Issue Analysis, January 4, 2018, p. 4.)
[61] Definition from New 경제용어사전 (New Economic Term Dictationary).

concluded the exchange swap contracts of USD 579400 million volume with total of 28 countries including South Korea from 2008 to 2014.[62] Although swap provision in the yuan has some limitations such as not able to resolve the problem of international liquidity deficiency, it is effective in strengthening the potential of resource acquisition through transaction expansion with China.[63] Thanks to the increase in swap transactions and international trade in China, the RMB became an important trading currency in the foreign exchange market and the supply of the RMB has increased, considerably.[64]

Furthermore, in order to liberalize its capital account, China established the offshore RMB market in Hong Kong in 2013 forming a dual exchange system: CNY for onshore market in Mainland and CNH offshore market in Hong Kong.[65] The growth in offshore RMB centers enabled international investors and multinational firms to have more reliable access to RMB liquidity and increased their willingness to hold RMB for sake of investment returns and portfolio diversification. Despite the increasing number of offshore RMB centers, the RMB usage in cross-border trade transactions was limited due to immature transmission channels between offshore and onshore RMB markets. Whereas China's onshore market is strictly controlled under China's financial policies, its offshore market is largely affected by the market mechanism. The separation between China's domestic exchange market and the offshore market created the exchange rate

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[62] Saeho Kim, "Chinese Yuan, instead of Dollar, increasing 30% annually in global transaction payment," ChinaDialy, June 22, 2017. http://www.eknews.net/xe/458708 (accessed September 21, 2018

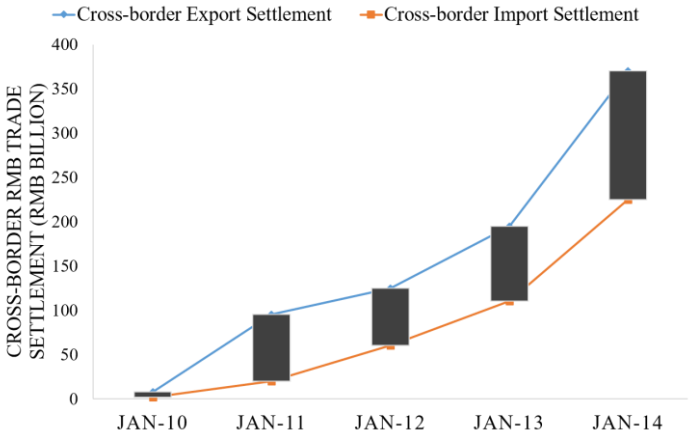
[63] Dukryong Yoon, "The promotion and significance of Chinese yuan," Korean Institute of Economy Policy, Vol. 9, No. 7, March 16, 2009.

[64] MapsofWorld.com, "Foreign Exchange Market China." http://www.eiiff.com/foreign-exchange-market/china.html (accessed October 22, 2018)

[65] Shuang (Sophie) Hu, "RMB Exchange Rate and Stock Return Interactions in Chinese Financial Market: Evidence of CNY, CNH-CNY Spread and Capital Flow Change," May 2017. p. 3. https://cdn.shanghai.nyu.edu/sites/default/files/media/shuang_sophie_hu_thesis_nyush_honors_2017_0.pdf (October 1, 2018)

and interest rate spreads between the offshore RMB (CNH) and the onshore RMB (CNY), producing potential arbitrage opportunities out of exchange rate volatility. Also, since Chinese importers get higher motives than exporters to trade in CNH, RMB settlement for imports outweighed that for the exports.[66] As indicated in figure 3, although the sum of both cross-border RMB imports and exports had increased between 2010 and 2014, the gap between the two had widened since September 2012. In response to the imbalance between imports and exports, China has recently strived to practice policies that help to clear out the two RMB difference. Launch of cross-border RMB centers in abroad helped narrow down the value difference between CNH and CNY. There are a few overseas centers in Europe such as Luxembourg, London, Germany, and France as well as in Asia, namely Hong Kong, Singapore, and Taiwan.[67]

Figure 4. Cross-Border RMB Import and Export Settlement (from 2010 to 2014)



Source: Thomson Reuters Datastream (2014)

[66] Helena Huang, "The Development of the RMB Offshore Market and the Liberalization of China's Capital Account," Chatham House (The Royal institute of International Affairs), January 2015, p. 5. https://www.chathamhouse.org/sites/default/files/field/field_document/20150119RMBChinaLiberalizationProjectSummary.pdf (accessed September 29, 2018)

[67] Pierre Gramegna, "Where do you Renminbi? A Comparative Study of Cross-border RMB Centres," Price Waterhouse Coopers, p. 4. https://www.pwc.lu/en/china/docs/pwc-where-do-you-renminbi.pdf (accessed October 11, 2018)

3.2.2 Stock Market

China's stock market, which mainly consists of Shanghai Stock Exchange, Shenzhen Stock Exchange, and Hong Kong Stock Exchange, is gradually opening up domestically and internationally through the reform which remove existing systematic immaturity flaws that prevent efficient operation of the stock market. In 2004, the China's market capitalization was only around 23% of GDP, but over the next 10 years, it increased significantly to 60% of GDP. By the late 2017, the amount of the market capitalization recorded USD 7.6 trillion maintaining its secondary position next to the US in the world. The rapid growth of China's stock market is attributable to both internal and external factors. Internally, the PRC endeavored to shift its economic structure through practice of financial reforms and externally, the launch of the offshore RMB market in Hong Kong attracted the inflow of foreign investors into China's stock market.

Firstly, unlike the past when the listing priority was governed by the political influence, now most major stock markets are turning to a listing registration system as one of the reform projects. In addition, the listing, which was mainly restricted to SOE, is gradually expanding to SMEs. There are two types of shares within China's stock market capitalization; one is negotiable shares which are the normal exchange tradable shares and another one is non-negotiable shares which refer to state-owned non-tradable shares. Along with a structural transformation following the 2008 global financial crisis, the occupation of non-negotiable shares had drastically dropped from 63% in 2008 to 21% in 2012 as they were increasingly replaced by negotiable shares.[68] Likewise, the launch of the Small and Medium Enterprises Board and the Growth Enterprise Market

[68] Prince Christian Cruz, "The People's Republic of China's Financial Markets: Are They Deep and Liquid Enough for Renminbi Internationalization?" ADBI Working Paper Series, No. 477, April 2014, p. 23.

ChiNext Board founded on the Shenzhen Stock Exchange fostered the growth of the Shenzhen Stock Exchange as they were entirely allotted to small-cap stock[69], recording high turnover ratios.[70]

Furthermore, China's dual exchange system gave high incentives for foreign investors to speculate on China's stock market. China's national capital flow fluctuation develop a close linkage between stock market and exchange market by transmitting the impact among the exchange rates.[71] As discussed earlier, the establishment of offshore RMB market in Hong Kong attracted many foreign investors to take an advantage of the arbitrage opportunities produced by the interest-rate spreads between the two different RMBs; CNH traded in offshore market and CNY traded in onshore market. Moreover, Chinese currency's recent entry into Morgan Stanley Capital International (MSCI) stock index fostered a surge of foreign inflows into Chinese stock markets. Most notably, the addition of RMB-denominated China A-shares[72] into the market index is a milestone sign of China's liberalization of financial markets because A-share market used to be mostly closed to foreign investment.[73] Although the proportion of China A shares in MSCI Emerging Markets Index only accounted 0.7% initially, around USD 17 billion of

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[69] Small cap stocks are generally defined as the stock of publicly traded companies that have a market capitalization ranging from $300 million to about $2 billion. Small cap stock companies often have a high stock price making the number of available shares "small." (Investopedia) www. Investopedia.com (accessed October 3, 2018)

[70] Prince Christian Cruz, ADBI Working Paper Series, No.477, p. 25.

[71] Shuang (Sophie) Hu, "RMB Exchange Rate and Stock Return Interactions in Chinese Financial Market: Evidence of CNY, CNH-CNY Spread and Capital Flow Change," May 2017, p. 3. https://cdn.shanghai.nyu.edu/sites/default/files/media/shuang_sophie_hu_thesis_nyush_honors_2017_0.pdf (October 1, 2018)

[72] China's A share and B share are traded in foreign currency domestically, while the Hong Kong dollar-denominated H share is issued in the Hong Kong (Cruz, 2014).

[73] Cruz, ADBI Working Paper Series, No. 477, p. 24.

passive funds are expected to channel into Chia's equity market, with inflows around USD 35 billion.[74]

3.2.3 Bond Market

China's crave for greater financial role in the world economy urged it to further liberalize its capital account through the opening up of the bond market. The bond market is the most influential market to the RMB internationalization, among the three major financial markets. The RMB's inclusion in the IMF's SDR currency basket in 2016 underlined China's confidence in the RMB and pushed the gradual opening up of China's bond market. The data from Bloomberg shows that overseas institutional holdings of onshore bonds have been, by and large, steadily increasing since early 2017. The data from the PBoC has shown that the total onshore bonds held by foreign investors reached RMB 1.1 trillion, up around 27% year on year.[75] Yet, the increase in overseas investment in China's onshore bonds does not necessarily imply the launch of internationalization of the RMB, but it is more correct to view it as a phenomenon that is incurred by the investors' expectation for the internationalization of China's currency. Given that China's offshore bond market is more opportunistic than onshore market for overseas investors, there is little incentive for them to pump into onshore market. However, since Chinese new policies help bridge the gap between the CNH and the CNY, and the prospect for the internationalization of the RMB is getting more clarified, the recent years saw the boom in the onshore market. The data from several research institutions implies that there is a high potential for foreign participation to be enlarged

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[74] Benjamin Robertson, "China's Stock Market is About to Burst onto the Global Stage," Bloomberg, May 14, 2018. https://www.bloomberg.com/news/articles/2018-05-13/china-s-msci-debut-is-about-to-put-new-stocks-in-your-pension (accessed October 3, 2018)

[75] Hayden Briscoe, "Chinese Bonds: All You Need to Know," UBS Assent Management, January, 2018, p. 7.

in China's domestic bond market. It is estimated that total volume of China's bond market will almost double during the next few years from RMB 56,305 billion in 2016 to RMB 95,100 billion in 2020. Likewise, the foreign holding in domestic bond market is expected to exponentially increase from RMB 853 billion in 2016 to RMB 9,510 billion in 2020 accounting approximately 9.93% of the prospective GDP.[76]

Meanwhile, the launch of new deregulatory measures in 2010 facilitated the expansion of the offshore bond market, as well. Specifically, the government allowed non-financial corporations to issue CNH bonds, and corporations to easily convert RMB and transfer funds between accounts. On top of that, the introduction of Certificates of deposit (CDs) fostered additional liquidity and trading activities within the offshore market.[77]

Despite the growing global attention to the internationalization of the RMB in line with the drastic growth of China's bond market, China is still cautious about completely liberalizing its capital account. China has not fully cleared out the capital controls that impede the internationalization of the RMB due to concerns over capital outflows and a potential further depreciation of the yuan.[78] Thereby, the opening of the bond market, from time to time, faces some restrictions under the government's associated regulations such as the rules on quota administration, account management, or fund participants.[79]

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[76] Source: Foreign Holdings Data in 2016 from the PBoC, Wind for 2016 data
"Tapping into China's Domestic Bond Market – An International Perspective," HKEX, May 2017. P. 4.
[77] Prince Christian Cruz, "The People's Republic of China's Financial Markets: Are They Deep and Liquid Enough for Renminbi Internationalization?" ADBI Working Paper Series, No. 477, April 2014, p. 19.
[78] Kevin Yao, "China's Capital Controls to Hamper Yuan Internationalization: Fitch," May 2, 2017. https://www.reuters.com/article/us-china-economy-yuan-fitch-idUSKBN17Y0F7 (accessed September 30, 2018)
[79] HKEX, "Tapping into China's Domestic Bond Market – An International Perspective," HKEX Research Paper, May 2017. https://www.hkex.com.hk/-/media/HKEX-Market/News/Research-

According to the official data from China Central Depository & Clearing Co, Ltd (CCDC), the share of foreign ownership in China's bond market remained as low as around 2.52% of the whole market, and 3.93% of the sovereign debt market while the correspondence in the US was around 43% of the sovereign debt market.[80] Likewise, in spite of the rapid growth of Chinese Government Bond, China has small-sized market and fragmented structure since the regulatory framework of the market is less transparent, generating moral hazard problems related to bond issuance. Also, the investor base is weak and restricted to domestic sector.[81] With the CCDC set as a benchmark of measurement, the size of total bond issuance from January to November in 2017 fell by 4.3% year on year along with the decrease of corporate bond by 40.2% due to the increase of credit risk. Similarly, the interest rate of corporate soared to 5.4% by December 2017 from average 3.4% in 2016 while the size of government bond issuance decreased to RMB 7.6 trillion in 2017.[82]

3.3 Comprehensive Analysis

Comprehensively, despite China's large economic size, the fragility of financial system and low liberalization of capital market slow down the RMB internationalization. Whereas every domestic economy needs more financing in the era of globalization, China's underdeveloped financial industry makes it hard to bolster its rapid economic growth. Likewise, China's financial markets should be fully liberalized to drive the RMB

Reports/HKEx-Research-Papers/2017/CCEO_Rpt(CN-bond)-201705_E.pdf?la=en (accessed September 30, 2018)

[80] Cruz, ADBI Working Paper Series, No. 477, p. 2.

[81] Overholt, William, Renminbi Rising: A New Global Monetary System Emerges, Seoul: 21 century Books, 2016, p. 31.

[82] 이치훈, "2018 년 중국 금융시장 전망," 국제금융센터, Issue Analysis, 2018 년 1 월 4 일, p. 4. (Chihoon Lee, 2018 The Outlook of China's Financial Market," International Financial Center, Issue Analysis, January 4, 2018, p. 4)

internationalization, but its financial system is too shallow to bear the risks stem from market liberalization.

Specifically, while China's exchange foreign market and stock market are progressing rapidly, opening up of the bond market is slow due to the PRC's concern over credit risks that may frustrate the stability of domestic financial system. Thus, compared to the stock market, the PRC's bond market is less active and liquid, and the participation of retail investors is lower. Against this backdrop, it is reckoned that once the risks for credit issues are reduced along with the improvement of financial market infrastructure, foreign investors will have more incentives to diversify higher-yield assets and credit bonds. In consequence, the foreign participation in China's onshore bond market is prospected to rise considerably.[83]

Hence, it is undoubtable that China should strengthen its shallow financial system and accelerate the liberalization of the capital account in order to precipitate the internationalization of the RMB. Additionally, China should explore innovative measures such as credit rating system which could help expand the international financial transactions and the global use of the RMB. The figure 5 summarizes the shortcomings in economic and financial sectors to internationalize the RMB.

[83] Ibid. p. 8.

Figure 5. The Conditional Shortcomings in Economic and Financial Sectors

	REQUIREMENTS	CROSS-BORDER SETTLEMENTS	FACTORS	SHORTCOMINGS	FINTECH INNOVATIONS	EFFECT OF FINTECH
CONDITION 1	Economic Growth Sustainability	Current Account: A nation's net income	Balance of Trade	Lack of Financial Pillar	E-commerce	?
			Investment Income		Third-Party Online Payment	
CONDITION 2	Finance Liberalization	Capital Account: A net change in ownership of national assets	FX Market	N/A	N/A	
			Stock Market			
			Bond Market	Concerns over Credit Risks	P2P Platform	
					Money Market Funds	

Chapter Four – The Impact of China's Fintech Industry on the RMB Internationalization

This chapter investigates whether the development of China's fintech industry is indeed effective in boosting the internationalization of the RMB by bringing about some evidences appeared in diverse sectors of finance. In the previoius chapter, I have found that China lacks financial pillar that can buttress the rapidly growing economy and is exposed to credit risks which impedes the government from further liberalizing its capital account. Mainly focusing on these drawbacks, it will explore in what ways can fintech become a solution to the problems.

4.1 Bolstering the Economic Sustainability

This section explores the processes of the fintech development bolstering the economic sustainability. It first discusses how fintech can push forward the deepening of financial reform via use of third-party payment platform and the demonstrate the way how the growth of e-commerce spending can encourage the China's economic growth.

4.1.1 Deepening of Financial Reform

Fintech industry, via the use of non-financial companies' financial platform, promotes the deepening of financial reform; reshaping the conventional financial system, further opening of the financial sectors. Although China has gone through a series of macro-structural reforms such as the privatization of State Owned Enterprises (SOEs), the banking system failed to resolve the credit allocation inefficiency between the SOEs

and Small and Medium-sized Enterprises (SMEs).[84] Also, the reform did not squarely tackle with the fragility of the financial system and the insulation of the financial market. In tandem with the rise of fintech, Chinese financial system has entered a stage at which it can sustain the real economy.

Prior to the rise of fintech, the developmental degree of China's financial system only corresponded to 20% of retail finance penetration rate. Likewise, as much as 20% of the total population were underserved under the inefficient banking system and the credit records possessed by the national credit investigation agency reached no more than 20% of the total financial consumers.[85] Moreover, unlike advanced countries where credit card system is firmly established, credit card or debit card system did not succeed in China.[86] Instead, China has entered a new phase where the emergence of innovative technology finance helped it tackle with the systematic problems prevalent in China's financial system.

As a result, China is reshaping its entire financial landscape and capital market by accelerating the growth in digital payments.[87] China was a cash-based society in which the transaction amount of cash deposit and withdraw peaked around RMB 145.06 million in 2014.[88] Yet, with the emergence of high-tech innovations, it was able to leapfrog from a cash-based to an internet-based financial system especially in the first

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[84] Sunyub Kim, "Interaction between Government Regulations and Fintech in China and South Korea: The Cases of Alibaba and Kakaobank," The Peking University, June 22, 2018. p. 15
[85] Korea Institute of S&T Evaluation and Planning, Science Technology Trend Analysis Report, p. 17.
[86] Ibid. p. 20.
[87] Xingnan Wang, "FinTech in China's Capital Market," Nomura Journal of Asian Capital Markets, Vol. 2, No. 1, 2017, p. 9. https://www.nomurafoundation.or.jp/wordpress/wp-content/uploads/2017/09/NJACM2-1AU17-03_CHINA.pdf (accessed September 26, 2018)
[88] Census and Economic Information Center (CEIC) Data Company Ltd., "China Bank Card Statistics," https://www.ceicdata.com/en/china/bank-card-statistics (accessed May 28, 2018)

tier of Chinese cities such as Beijing, Shanghai, and Guangzhou.[89] In other words, China has made a quantum leap from the cash payment to escrow digital payment, leaving the stage of credit card use. Indeed, during the transforming period, China's credit card penetration rate recorded as low as 0.3 credit cards per person,[90] while the penetration speed of online third-party payment was breathtaking in China. According to the official figures from the Ministry of Industry and Information Technology, the amount of mobile payment transactions in China recorded RMB 81 trillion (USD 12.8 trillion) from January to October in 2017 surpassing the counterpart in the US.[91] Alipay,[92] in particular, is the most frequently used payment method of which the using rate accounts 80%, more than the use of credit cards (60%), debit cards (30%), and cash (79%).[93] Hence, the portion of payment settled via mobile devices gradually surpasses non-mobile payment in the Chinese market share.

Also, the domestic spread of mobile payment system in China affect the behaviors of foreign enterprises as well, encouraging them to adopt the Chinese third-online payment system to make Chinese tourists to open their wallets. According to Nielsen's recent study, the 91% of Chinese overseas tourists answered that they were more willing to spend if Chinese mobile payments are accepted since it is of great convenience for Chinese travelers. As Chinese mobile payment can be made in the Chinese currency,

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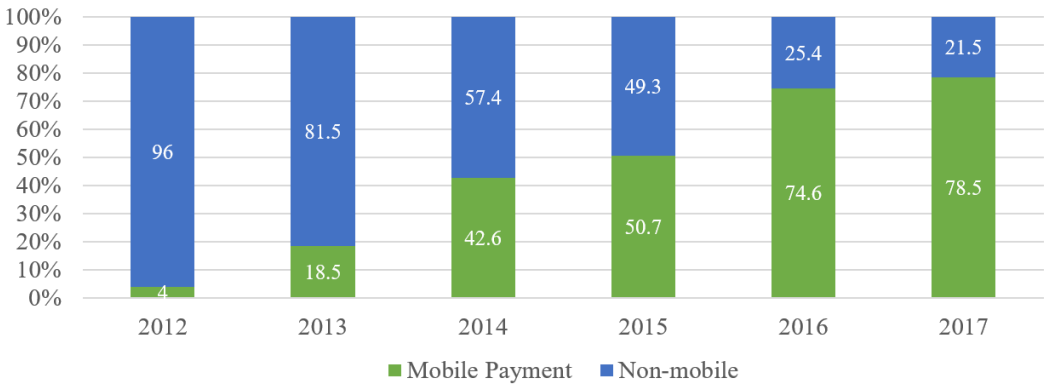
[89] Sunyub Kim, "Interaction between Government Regulations and Fintech in China and South Korea: The Cases of Alibaba and Kakaobank," The Peking University, June 22, 2018, p. 16.
[90] Ibid, p. 16.
[91] Alice Shen, "China Pulls Further Ahead of US in Mobile Payments with Record US$12.8 trillion in transactions," South China Morning Post, February 20, 2018. https://www.scmp.com/tech/apps-gaming/article/2134011/china-pulls-further-ahead-us-mobile-payments-record-us128-trillion (accessed September 26, 2018)
[92] Alipay is an online third-party payment platform which was launched by Alibaba in 2014 and rebranded as Ant Financial Services in 2014.
[93] Korea Institute of S&T Evaluation and Planning, Science Technology Trend Analysis Report, No. 30, December 2017, p. 20.

RMB, it definitely can boost the further expansion of RMB usage in trade settlement. Given that most of Chinese mobile payment accounts are connected to UnionPay accounts, the advent of mobile payment system is a great opportunity for China to open its biggest domestic bank to the world finance. Consequently, the prevalence of third-party online payment in China can encourage the international usage of the RMB.

Figure 6. 2011-2019 Mobile vs. Non-Mobile Payment % Market Share in China



Source: iResearch, 2017 China 3rd Party Mobile Payment Report

4.1.2 Mushrooming Online Consumption

The innovative retail e-commerce market performs as an important channel that capacitates cross-border retailers and brands to enter China.[94] The fintech firms' initiatives through mobile banking and e-commerce have achieved significant growth in different countries.[95] Particularly, China's e-commerce market is undoubtedly the

[94] Michael Cheng, "eCommerce in China – the Future is Already Here," Price Waterhouse Coopers, 2017, p. 2. https://www.pwccn.com/en/retail-and-consumer/publications/total-retail-2017-china/total-retail-survey-2017-china-cut.pdf (accessed September 27, 2018)
[95] Maher Jarjour, "FinTech Response to 2008 Financial Crisis is Reshaping the Global Economy and its Workforce," Payments & Cards Network. https://www.teampcn.com/fintech-effect-on-the-global-economy (accessed October 23, 2018)

largest in the world. The Statista's latest report shows that China's revenue in the e-commerce market amounted to USD 636,087 million only in 2018.[96] Among the diverse e-commerce companies available within China, Alibaba dominates the e-commerce market. The data from Analysis International showed that Alibaba took up 44.13% of China's B2B e-commerce market revenue in the first quarter of 2015.[97] Notably, its revenues on Single's Day normally peak the highest because the company offers sales with special pricings and promotions within a 24-hour period. According to the statistic drawn by Statista, online consumer spending on Alibaba's Tmall (B2C) and Taobao (C2C) e-commerce properties during the 24-hour Singles Day Sales amounted to US$ 25.3 billion.[98] As such, diverse promoting events held by Alibaba highly boost consumers to make large volume of online consumption which leads to the overall domestic consumer spending.

Additionally, the notion of e-commerce, now, goes beyond the cyber space, but extends to offline sectors, as well. To illustrate, a concept of 'new retail' which was coined by Jack ma, the representative of Alibaba, has come to emphasize the convergence between online and offline retail sectors which include products, services, big data, and marketing.[99] In this context, it is forecasted that the extension of e-commerce to diverse economic sectors will bolster China's economic growth through

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[96] Statista, "eCommerce (China)," https://www.statista.com/outlook/243/117/ecommerce/china (accessed September 26, 2018)

[97] CIW Team, "China B2B E-commerce Market in Q1 2015," China Internet Watch, May 18, 2015, https://www.chinainternetwatch.com/13352/b2b-q1-2015/ (accessed December 9, 2018)

[98] Statista, "Alibaba's Gross Merchandise Volume on Singles Day from 2011 to 2017 (in Billion U.S. Dollars)," 2018, https://www.statista.com/statistics/364543/alibaba-singles-day-1111-gmv/ (accessed December 9, 2018)

[99] Vishal Bali, "5 Things We Can Learn from China's E-Commerce Explosion," Nielsen, February 1, 2018. https://www.nielsen.com/cn/en/insights/news/2018/5-things-we-can-learn-from-chinas-e-commerce-explosion.html (accessed September 26, 2018)

establishing innovative financial platforms. According to a report published by Price Waterhouse Coopers, a multinational professional services network, the main target of China's e-commerce market is shifting from the transactional elements of activating online channel activation, merchandising optimization, and traffic generation investment to brand building, customer engagement, and physical store type by integrating the online and offline retailing. One example of retail e-commerce is shopping IKEA products through the Alibaba's e-commerce platform. Even though customers place payment online, they can still scan the products at the physical IKEA store which enhances the quality of their shopping. Ideologically, the novel tenant of retail e-commerce rests on content-led experiences in which customers can socially engage into their digital experience through both online and offline channels.[100] Such an idea prompts socialization of customers within the online network by incorporating some socializing and entertaining factors into the platform such as Wang Hongs, a retail platform in which the internet celebrities promote their personal brand on follower base.[101] Thus, fueled by the continuous penetration of smartphone into the global population, consumers around the world can, now, more proactively engage in social online activities via easy access to e-commerce websites. Likewise, most Chinese firms have applied e-commerce platforms in and outside the country precipitating the global trend of e-commerce market network. Consequently, the amount of international e-commerce export has increased steadily in recent years, accounting for a larger market

[100] Ibid. p. 3.
[101] Ibid. p. 21.

share than its traditional export trade, of which the growth rate has oppositely slowed down.[102]

4.2 Liberalization of Financial Sectors

The rise of fintech innovations along with the changing finance market demands and circumstances shifts the way people access to the fintech services. Since the financial services provided by the non-financial institutions became more diversified, people in and outside China are more encouraged to engage in finance consumption, taking advantage of the financial innovations. Against this backdrop, the following sections will investigate the diverse financial innovations that encourage the demands for fintech services and thus, gradually liberalizes the financial sectors.

4.2.1 Expansion of Consumer Credit

The development of fintech has enabled China to strengthen retail banking and create new revenue streams as advances in innovation have made it easier to assess credit. As such, the fintech innovation has begun to offer a wide range of financial services not only to SOEs and consumers in high-end sectors but also to SMEs and middle-class consumers. As of 2015, SOEs and retail customers contributed 60% of China's GDP, 80% of city employment and 50% of tax revenues, but only 20 to 25% of the loans were provided to them by the conventional banks. However, as new technology enabled to identify the spending propensity of consumers, China expanded retail loan issuances, measuring the credit rating. For instance, China's WeBank offers loan services using its

[102] Wang Rui, "Internationalization Strategy of Chinese E-Commerce Firms. The Case of Alibaba Group," Saint Petersburg University, 2018, p. 7. https://dspace.spbu.ru/bitstream/11701/12996/1/Mater_Thesis-Wang_Rui.pdf (accessed September 27, 2018)

Tencent mobile messenger, WeChat. Likewise, Alibaba's online bank, MyBank created a credit assessment tool or user credit scoring system, which is known as Sesame Credit, using big data based on the ICT technology, so that individuals could easily obtain online micro-loans. Using its credit rating system, MyBank's accumulative micro-loans surpassed US dollar 46 billion in eight months.[103]

Consequently, the advent of credit rating system helped fuel the domestic consumption through expansion of consumer credit. Consumer credit, which serves as a major engine for the development of the finTech industry, has recently expanded the domestic market in China. Consumer credit refers to credit loans provided by Chinese financial institutions to stimulate consumption and most of them are conducted through the fintech platform. In the academia, consumer credit is scholarly defined as a debt that a person incurs when purchasing a good or service which includes the purchases through credit cards, and some loans.[104] According to '2017 China consumption finance report,' a recently published report by iResearch, China's fintech consumer finance transaction increased from 6 billion yuan to 43.67 billion yuan over four years from 2013 to 2016. Thereby, the annual growth rate of consumer credit reached as much as 317%. Likewise, in 2016, spending on credit loans by Chinese financial institutions accounted for 23% of the total amount of credit loans. Among them, the amount of new credit loans by

[103] 김태진, "중국은 어떻게 2 년만에 핀테크 대국 됐나," ZDNet Korea, 2017 년 4 월 3 일. (Taejin Kim, "How China became a Huge Fintech Country in 2 Year," ZDNet Korea, April 3, 2017. http://www.zdnet.co.kr/news/news_view.asp?artice_id=20170402172213&from=Mobile (accessed September 26, 2018)

[104] Investopedia, 'Consumer Credit.' https://www.investopedia.com/terms/c/consumercredit.asp (accessed October 21, 2018)

financial institutions increased to 6.1 trillion yuan, accounting for 50% of total credit loans.[105]

There are several underlying backdrops that explain the expansion of consumer credit through the use of fintech platforms. First, the expansion of consumer finance through the fintech platform is deeply associated with the rise of young people (age 20s and 30s) as a major force in the consumer market. Although the level of their income and disposable income are not relatively high, issuance of micro-loans through fintech platform are actively carried out due to their strong desire to purchase.[106] Additionally, the proliferation of middle-class people is making financial transactions more active through non-banking fintech platforms rather through the rigidly operating traditional financial institutions. According to statistics, China's middle class is expected to surge from 150 million in 2015 to 1 billion, around 70% of the total population by 2030. Most middle-class, however, do not receive banking services from the banking institutions because local banks do not provide enough services to small businesses and retail customers who do not have sufficient collateral and credit history. Even if the bank offers loans, SMEs are required to pay twice as much interest as SOEs since most of the banks are still dominated by the PRC. The imbalance in providing the financial services deteriorates as financial demand shifts from simple loans to diverse financial sectors including bank lending, cash flow management, supply chain financing and investment management. Therefore, the middle class consumers, who cannot receive proper service from the banks, are looking for fintech companies which provide financial services to a wider range of customers based on new innovative technology such as person-to-person

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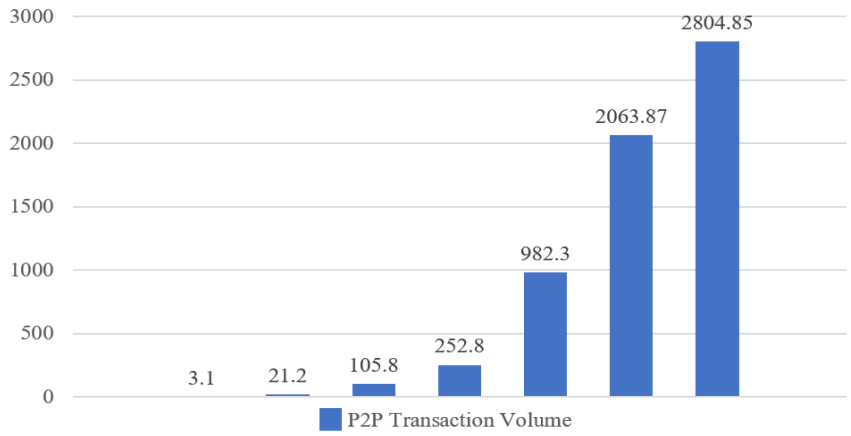
[105] 강소영, "모바일 선진국 중국, 핀테크 발 소비 금융 빅뱅," 뉴스핌, 2017 년 6 월 20 일. (Soyoung Kang, "Mobile Leader China, the Consumer Credit Bigbang with Fintech," NewsPim, June 20, 2017. http://www.chinanow.co.kr/news/rssDetail/27528 (accessed September 29, 2018)
[106] Ibid.

(P2P) platform.[107] Consequently, the online lending through P2P platform in the PRC has become to dominate the China's loan market. According to data from Wang Dai Zhi Jia, the transaction volume of P2P online lending platforms has exponentially increased to 2,804.85 RMB billion in 2017 from only 2.10 RMB billion in 2011.[108]

Figure 7. Transaction Volume of P2P Online Lending Platforms



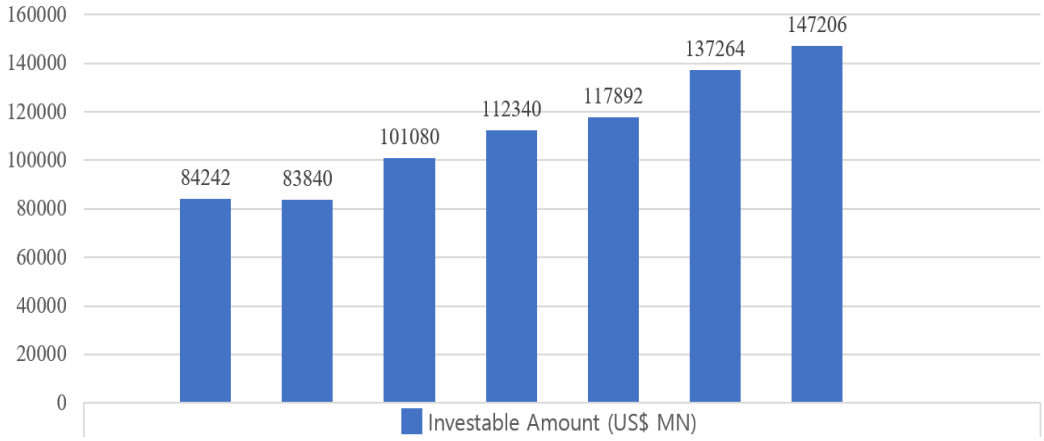
Source: Wang and Dollar (2018), based on data from Wang Dai Zhi Jia

Moreover, the expansion of consumer credit is deemed to enhance the effect of government's macro-finance policies and upgrade the traditional finance institutions.[109] In the 'Consumer Credit Innovation Development in the Fintech Era Summit', Sunguo Feng, the chief of PBoC's finance research institute said, "Consumer credit intensifies the political effect of macro-finance in terms of interest rate and credit. It also diversifies the industrial forms and generates the innovations of financial institutions by fostering

[107] Korea Institute of S&T Evaluation and Planning, Science Technology Trend Analysis Report, No. 30, December 2017, p. 17.
[108] Tobin Damian, ADBI Working Paper, No. 825, p. 25.
[109] Ibid. p.

the competition."[110] For instance, the number of fintech companies or start-ups are incrementally increasing driven by diverse factors including the launch of the National Equities Exchange and Quotations (NEEQ) in 2006. The NEEQ, a China's new stock market set up by the government to reform the capital market, has been promoting the growth of high-tech enterprises and start-ups by providing them with more financing opportunities.[111] The government's measures to distribute the stock share ownership among the public and private sectors also contributed to the increase of the venture capital leading to the rise of the private equity sector in China.[112] As shown in figure 6, the capital stock of private equity has incrementally increased to USD 147,206 million in 2015 from USD 84,242 million in 2008.[113]

Figure 8. Capital Stock of Private Equity Investable Amount in China, 2008-2015



[110] 经济参考报, "互联网消费金融 4 年爆增 70 倍 万亿市场待启,"中证网, June 19, 2017. http://www.cs.com.cn/xwzx/201706/t20170619_5330543.html (accessed October 29, 2018)
[111] David Lee Kuo Chuen, Handbook of Blockchain, digital finance, and inclusion Volume 2, Academic Press, 2018, p. 5, ISBN 9780128122822. https://doi.org/10.1016/B978-0-12-812282-2.00025-5. (http://www.sciencedirect.com/science/article/pii/B9780128122822000255) (accessed October 18, 2018)
[112] Ibid, p. 8.
[113] Ibid, p.9

Source: Qingke Data (2015), Lee and Teo (2015)

4.2.2 Encouraging Foreign Investment in Finance

The advent of non-financial companies in fintech sector pioneers a new route for financial globalization. The role of non-financial enterprises in the Chinese financial regime is gradually increasing considering that equity financing on the domestic stock market by non-financial enterprises accounts a larger portion of stock compared to the local government special bonds and foreign currency-denominated loans. Thereby, expansion of non-financial enterprises in China constantly encourages the integration of the domestic market into the global arena. For instance, China's outstanding fintech firms are currently attracting a substantial volume of investments from the oversea markets. Accordingly, the data from FinTech Global showed that global fintech investment in China recorded USD 1 billion only in the first quarter of 2018, underscoring that the fintech funding landscape in China will be on the rise.[114] Spurred by the rapidly inflowing foreign funds, China's fintech companies further seek to expand their business scale within and outside Southeast Asia through diverse channels. For instance, China sought ally with Invest Hong Kong, the major entity in charge of foreign direct investments into Hong Kong, in order for China's fintech companies and startups to find easy access to global finance. Since local policies of Hong Kong are investment friendly as to permit technology companies to issue stocks, China deemed Hong Kong as an appropriate channel to facilitate the internationalization of the domestic fintech

[114] "Investment in Chinese Fintech Companies Surpassed $1bn in Q1 2018," FinTech Global, May 16, 2018. http://fintech.global/investment-in-chinese-fintech-companies-surpassed-1bn-in-q1-2018/ (accessed September 27, 2018)

corporations.[115] Moreover, the China's first online insurance company, ZhongAn Online P&C Insurance has planned to sell their technology platform as a product to overseas, backed up by the foreign investment placed by Japan's SoftBank.[116]

Moreover, the use of innovative technologies, such as Artificial Intelligence (AI) and blockchain technology, promotes the circulation and management of massive funds within the world's finance market.[117] The AI big data, which analyzes and predicts the data by machine and learning, is used in every sector of financial services including saving, loans, risk management, and payment. Through the data analysis, it estimates the credit, detects the customers' behavior, and derives smart decision-making in managing finance investment.[118] Thus, the invention of AI streamlined the operation of non-financial institutions by reducing the cost and time for providing the finance services to customers. Given that the finance is getting more globalized, the application of AI into diverse financial services is most likely to enhance the financial interaction between China's and overseas' financial markets. Likewise, the implementation of blockchain encourages both national and foreign investment in China's fintech sector because it helps to efficiently clear and settle the cash securities, saving capital markets over USD 11 billion annually on a global scope.[119] Although the adoption of fintech innovations

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[115] "China's Fintech Firms Find New Way to Access Foreign Funds," Techwire Asia, August 6, 2018. https://techwireasia.com/2018/08/chinas-fintech-firms-find-new-way-to-access-foreign-funds/ (accessed September 27, 2018)

[116] Yang Jing, "Chinese Fintech Firms Keen on Overseas Opportunities," CGTN, September 15, 2018. https://news.cgtn.com/news/3d3d514f7a496a4d7a457a6333566d54/share_p.html (accessed September 27, 2018)

[117] 이왕휘, "핀테크(金融科技)의 국제정치경제: 미국과 중국의 경쟁," 국가전략, 제 24 권 2 호, 2018, p. 156. (Wanghui Lee, "Fintech's International Politic Economy: The Competitions between the US and China," National Strategy, Vol. 24, No. 2, 2018, p. 156.

[118] Genpart, "How Banks and Finance Firms Are Using AI to Better Engage with and Understand You," MashableAsia, May 14, 2018. https://mashable.com/2018/05/13/finance-industry-ai/ (accessed October 23, 2018)

[119] Xingnan Wang, Nomura Journal of Asian Capital Markets, p. 11.

is mostly on the experimental stage, the currency exchange frequency has been increased in cyber space; approximately 80% of bitcoin transaction is settled through the exchange into and out of China's RMB.[120] Against this backdrop, the growth of fintech industry in China is not only expected to consolidate China's financial market but also has a potential to expand the usage of the RMB in the cross-border markets by harnessing the tech-driven financial platforms.

Ben, the dean of Zhejiang University's Academy of Internet Finance, explained that the booming of fintech creates an additional market within the region. The emergence of mobile payment in China encourages the local people in the region to open RMB account forsake of the low commission costs. This is due to the drastic rise of China's international transactions with the neighboring countries and China's fintech innovation spreading into the foreign regions through the trades.[121] In fact, the use of fintech innovations is a good way to strengthen the convertibility of RMB and expand the global usages of RMB in foreign countries. Particularly, given that most of China's financial services are being reshaped by the fintech innovations, the products and services from China's companies could be accessible via the use of simple fintech platforms. This would offer foreign fintech users more incentives to have RMBs since the use of RMB is more cost-effective, without a need to convert the currency, when accessed to services through the Chinese fintech platforms.

The increasing investment demands between China and overseas fosters the application of innovative technologies into financial sectors meeting the needs of

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[120] Ibid, p. 11

[121] Wang Xiaozhou, "China EconTalk: Fintech Becomes a Booster of RMB Internationalization," CGTN July 17, 2018. https://news.cgtn.com/news/3d3d774e3355444f78457a6333566d54/share_p.html (accessed September 23, 2018)

fintechs in China.[122] Indeed, China takes up around three-quarters of the global online lending which is the largest within the world's market. One of the numerous contributing factors was Alibaba's launch of the money-market fund Yu'E Bao in 2017 which has become the biggest money market fund in just 4 years.[123] Moreover, the inclusion of China's fintech companies into diverse foreign finance promotes the liberalization of China's financial market. Burgeoning number of foreign investors has begun to view optimistically about the future of Asian fintech and they are willing to invest in China's fintech companies which are listed on foreign stock exchange market. For instance, the debut of Qudian, a new loan and micro-lending platform, on the New Yong Stock Exchange in 2017 achieved USD 900 million in its initial offering.[124] Thanks for the increasing listing of Chinese fintech companies in foreign areas, the venture capital investments in China fintech has tripled annually from 2014 to 2017, accounting 47% of total world's fintech investments.[125] The massive circulation of funds for Chinese fintech industry and the liberalization of fintech market gradually blurs the finance boundaries between China and the rest of the world.

On the whole, the outcome of the research evidences that the implementation of fintech innovations can possibly promote the internationalization of the RMB by strengthening economic and financial competitiveness through bolstering the economic sustainability and promoting the liberalization of financial market.

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[122] Xingnan Wang, Nomura Journal of Asian Capital Markets, p. 12.
[123] HQ Han, "FinTech in China: An Introduction," Wharton Fintech, April 1, 2018. https://medium.com/wharton-fintech/fintech-in-china-an-introduction-6b11abd9cb64 (accessed October 25, 2018)
[124] Ambika Nair, "Qudian and the rise of Chinese Fintech," Emerging Markets Forum, November 7, 2017. http://www.lseemf.com/qudian-rise-chinese-fintech/ (October 12, 2018)
[125] HQ Han, Wharton Fintech.

Figure 9. The Effect and Outcome of the Use of Fintech in Economic and Financial Sectors

	REQUIREMENTS	SHORTCOMINGS	FINTECH SERVICES	FINTECH INNOVATIONS	PLATFORMS	THE EFFECT OF USAGE	OUTCOME OF FINTECH USE
CONDITION 1	Economic Growth Sustainability	Lack of Financial Pillar	Third-Party Online Payment	Mobile Payment Platform	Alipay WeChat	Deepening of Financial Reform	Bolstering the Economic Sustainability
			E-commerce	C2C Platform	Alibaba's Taobao	Mushrooming Online Consumption	
CONDITION 2	Finance Liberalization	Concerns over Credit Risks	Online Private Bank	P2P Platform	Alibaba's MyBank	Expansion of Consumer Credit	Promoting the Liberalization of Financial Market
			Money Market Funds	Blockchain, AI	Alibaba's Yu'EBao	Increase of Foreign Investment	

Chapter Five – Conclusion

While the outbreak of 2008 economic crisis created a new wave of discussion on the RMB internationalization, the rise of financial technology in 2010 ushered the global finance into a novel dimension of finance. In tandem with the new global finance trend, this paper tried to explore whether the development of fintech industry can boost the internationalizing progress of the Chinese currency.

Observing the status of China's economic and financial sectors, the paper figured out that major obstacles for the RMB internationalization originate from the shallow development of China's financial system and the government's political unwillingness to fully open the financial market. In practice, the two factors are interconnected because it is the fragility of the domestic finance that incites the PRC to implement protective policies against the risks rise from the capital liberalization. Comprehensively, the liberalization of the financial market supported against the sturdy financial system is the most essential element for speeding up the RMB internationalization.

Through the research, the paper has found that fintech market has a potential to tackle with the current financial problems by improving the conditions of financial system and liberalizing the financial market. First, the rise of fintech contributed to resolve the inefficiency problems arising from the traditional financial system by transforming the structure. As fintech targeted the niche of non-financial sector, it enabled more customers, other than SOEs and the upper-class consumers, to have an easier access to the financial products and services. Particularly, the rise of innovative technologies provided the fintech companies more opportunities to globalize the financial platforms, thus attracting a large volume of foreign investors and consumers.

Secondly, the availability of diverse fintech innovations contributed to expand the transaction of consumer credit in China and to boost the foreign investment in China's fintech-driven capital market. Since the adoption of technologies provides financial institutions more apparent credit information about the consumers, the provision of micro-loans to a wide range of consumers has become possible, encouraging the national consumption. Likewise, the implementation of fintech innovations increasingly boost the consumers to make finance transactions in and out of China's financial sector, adding more convertibility to the Chinese currency. Overall, even though the application of fintech is still on its fledgling stage, it has potential to boost the RMB internationalization by strengthening the traditional financial system and deepening the liberalization of China's capital market.

Yet, this paper has limitations in that the research has solely focused on the rise of fintech as a major booster to the RMB internationalization despite many other important strategies practiced by the PRC; the launch of AIIB, and the BRI policy.[126] Also, among the diverse aspects of fintech industry, it mostly focused on the exploitation of technological innovations. Therefore, it is reckoned that further studies on the other aspects of fintech such as political aspect will be helpful in substantiating the academic discussion about the fintech's impact on the RMB internationalization.

[126] David Lee Kuo Chuen, Chapter 1: The Game of Dian Fu: The Rise of Chinese Finance, Handbook of Blockchain, Digital Finance, and Inclusion: ChinaTech, Mobile Security, and Distributed Ledger, Academic Press, 125 London Wall, EC2Y 5AS, United Kingdom, Vol. 2, 17 March 2017, p. 3.

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Appendix

Figure 1. GDP, GDP growth, Exports, Imports of China and the United States

Category	Year/Country	2012	2013	2014	2015	2016	2017
GDP (US$)	China	8560547314679	9607224481532	10482372109961	11064666282625	11190992550229	12237700479375
	United States	16155255000000	16691517000000	17427609000000	18120714000000	18624475000000	19390604000000
GDP growth (annual %)	China	7.9	7.8	7.3	6.9	6.7	6.9
	United States	2.2	1.7	2.6	2.9	1.5	2.3
Exports of goods and services (BoP, current US$)	China	2175092012376	2355594737798	2462902030661	2360152452309	2197922469129	2422911001954
	United States	2218988000000	2293454000000	2375904000000	2263907000000	2208071000000	2331600000000
Imports of goods and services (BoP, current US$)	China	1943247135628	2120215176193	2241602783713	2002281688027	1942185380887	2212182564781
	United States	2755761000000	2755329000000	2866238000000	2764353000000	2712865000000	2900039000000

Source: The World Bank
Database: World Development Indicators
Last Updated: August 28, 2018

국문초록

중국의 RMB 국제화와 핀테크 산업의 촉진제 역할

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2008 미국발 글로벌 금융위기가 발발한 이후 국제준비통화로서의 미국 달러화에 대한 문제가 제기되었고 이러한 문제 제기는 국제적으로 국제통화체제의 변혁을 논의하는 단초를 제공했다. 중국은 이러한 국제경제의 흐름에 발 맞춰, 자국의 위안 (元)화를 국제화하기 위해 국가차원의 야심찬 전략을 수립하였다. 대표적으로 중국은 아시아인프라투자은행(AIIB) 설립과 일대일로 전략의 추진 등 위안화의 국제화를 위한 다양한 정책을 수립하였다.

본 연구의 목적은 위안화의 국제화를 위해 중국이 추진하고 있는 각종 정책 가운데, 금융기술 (핀테크) 산업 확대가 위안화 국제화에 어떠한 영향을 미치는가에 대한 고찰에 있다. 선행 연구들은 위안화 국제화의 핵심 동인이 중국의 금융시장을 자유화하는 것이라는데 초점을 맞춘 것이 대부분이었고, 핀테크 혁신이 위안화 국제화에 기여할 가능성에 대한 논의는 거의 없었다. 따라서 본 연구는 핀테크 산업 확장과 위안화 국제화의 연계성을 고찰하고 핀테크 시장이 위안화의 국제화 과정을 어떻게 촉진할 수 있는지에 분석의 초점을 맞추었다.

제 1 장에서 연구의 목적과 중요성을 소개한 후, 제 2 장에서는 위안화 국제화에 대한 전체적인 개요를 설명하고, 중국이 자국통화를 구제화하는데 있어서 갖추어야 할 필요한 일반적인 조건을 제시하였다. 제 3 장은 제 2 장에서 제시한 조건에 따라 중국의 경제와 금융 현황을 고찰하였다. 제 4 장은 핀테크 산업의 확장이 위안화 국제화에 미칠 수 있는 영향을 분석하였고, 마지막 장에서는 연구 결과를 종합적으로 정리하였다. 결론적으로, 본 연구는 핀테크 산업의 성장이 금융개혁을 심화시키고 중국 금융시장의 자유화를 신장시킴으로써 위안화의 국제화를 촉진시킬 동인이 될 수 있다는 결론에 도달한다.

주요어: 위안화 국제화, 핀테크, 국제준비통화, 금융개혁, 금융시장 개방화

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