

Yinggang Zhou
Xin Cheng

Is China's Currency Increasingly Important?

New Evidence from Renminbi
Exchange Rates

 Springer

Is China's Currency Increasingly Important?

Yinggang Zhou · Xin Cheng

Is China's Currency Increasingly Important?

New Evidence from Renminbi
Exchange Rates

 Springer

Yinggang Zhou
Center for Macroeconomic Research,
School of Economics and Wang Yanan
Institute for Studies in Economics
Xiamen University
Xiamen, China

Xin Cheng
Institute of Chinese Financial Studies
of SWUFE
Southwestern University of Finance
and Economics
Chengdu, China

ISBN 978-981-97-1163-5 ISBN 978-981-97-1164-2 (eBook)
<https://doi.org/10.1007/978-981-97-1164-2>

We gratefully acknowledge financial support from National Natural Science Foundation of China (71988101, 71871195, 72103170) and National Social Science Foundation of China (19ZDA060).

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2024

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd. The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

Paper in this product is recyclable.

Preface

China's currency, commonly known as the Renminbi or RMB, has gained considerable attention as China became the world's second-largest economy since 2010 and the world's largest trading nation since 2013. By the end of 2022, China accounted for 18.6% of the global economy and 14.4% of world exports. These economic achievements laid solid foundations for RMB's international standing.

Moreover, the People's Bank of China has also sought to internationalize RMB since the 2008 financial crisis and has made significant progress thus far. In October 2016, the International Monetary Fund (IMF) added RMB to the Special Drawing Right (SDR) in addition to the previously included four elites—the U.S. dollar, the Euro, the Japanese yen, and the British pound. RMB's 10.92% share in the SDR basket derives from the falling share of the Euro and British pound. In 2022, the IMF further raised the weight of RMB in the SDR basket to 12.28%, maintaining RMB's position as the third most heavily weighted currency in the SDR basket, only behind the U.S. dollar and the Euro. It seems that RMB will have a far-reaching impact on the international monetary system as a reserve currency.

Despite the above achievement, RMB remains underutilized compared to the U.S. dollar. By 2022, RMB accounted for only 7.01% of foreign exchange turnover, according to a survey conducted by the Bank of International Settlements (BIS). By the end of 2023, RMB accounted for only 2.29% of currency reserves, ranking fourth among all allocated reserves, according to the Official Foreign Exchange Reserves (COFER) data compiled by the IMF. According to the Society for Worldwide Interbank Financial Telecommunications (SWIFT), RMB accounts for 4.14% of global payment and 5.07% of global trade finance, while the US dollar remains the dominant currency with 47.54% and 82.84% share by the end of 2023. Apparently, there is a huge gap between the yuan's growing prominence and its global use.

This book attempts to fill this gap from the view of the systemic importance of the RMB exchange rate, an angle that could be easily overlooked. We argue that pricing is too important to be relegated to an afterthought. The change of RMB exchange rate could have a systemic impact on the global financial system. Furthermore, we present substantial evidence that RMB is gaining importance globally and regionally

as an anchor currency and safe-haven currency, indicating that RMB is becoming systemically important despite its relatively limited international use.

On the one hand, we examine the systemic importance of RMB as an anchor currency in terms of its capacity to drive the exchange rates of other currencies in the same direction. We find that RMB has been increasingly important among currencies of G20 group, a collection of twenty of the world's largest economies, since China initiated the marketization reform of its currency in 2005. Besides, RMB is gaining regional importance since the proposal of One Belt and One Road (B&R), a global infrastructure development project initiated by the Chinese government in 2013. Moreover, we explore the underlying drivers of the increasing importance of RMB as a global anchor, which can be attributed to China's stable economic fundamentals, resilient export growth, and the prospect of attractive returns on Chinese financial assets.

On the other hand, we examine the systemic importance of RMB as a safe-haven currency in terms of its efficacy as a hedge against financial stress for global or regional equity investors. We find that the onshore RMB can only hedge against stock market volatility to some extent, while offshore RMB can hedge against volatility in the emerging stock market. However, neither onshore nor offshore RMB can hedge against a stock market crash. In contrast, Japanese yen is a better hedge in volatile markets and extreme stock downturns. Therefore, RMB has some characteristics as a safe-haven currency, but it is not yet as important as traditional safe-haven currencies.

It is important to understand in depth that the force that has helped fuel China's rapid economic growth over the past few decades has been globalization and that market reform and opening up are the pillars of RMB internationalization. Therefore, the liberalization of the capital account and the reform of the exchange rate system are important for further internationalization of RMB.

Meanwhile, the new trends of anti-globalization and de-financialization have emerged. The global monetary and financial system must be reframed according to the financial needs of socially sustainable activities to prevent systemic instability and system-wide economic/social catastrophes. Against this backdrop, China must first create the necessary institutional and market conditions rather than fully opening up the capital account without them. Ultimately, further internationalization of RMB should serve the real sectors in high-quality economic development.

Xiamen, China
Chengdu, China

Yinggang Zhou
Xin Cheng

Contents

1	Introduction	1
1.1	Background	1
1.1.1	Evolution of the International Monetary System	1
1.1.2	Reforms of the RMB Exchange Rate Regime	4
1.1.3	Changes of the International Monetary System	6
1.1.4	Opportunities of RMB Internationalization	8
1.1.5	Challenges of RMB Internationalization	10
1.2	What is This Book About?	11
1.3	Content of the Book	12
	References	13
2	Literature Review	15
2.1	Internationalization of RMB	15
2.1.1	Internationalization of RMB in Terms of Usage	15
2.1.2	Internationalization of RMB as an Anchor Currency	16
2.1.3	Internationalization of RMB as a Safe-Haven Currency	17
2.2	Identification of Systemically Important Financial Institutions	18
2.3	Systemic Importance of Currency	19
2.3.1	Systemic Importance of Anchor Currency	20
2.3.2	Systemic Importance of a Currency as a Safe-Haven Currency	21
	References	22
3	Is RMB Becoming Systemically Important?	25
3.1	Data	27
3.1.1	Currency Exchange Rates of G20 Member Countries	27
3.1.2	Currency Exchange Rates of Countries Involved in the B&R Initiative	32
3.2	Econometric Model	39
3.2.1	VAR Model	39
3.2.2	Structure of Spillover Networks for Currencies	40

3.2.3	Dynamic Evolution of Spillover Networks for Currencies	42
3.3	Results	42
3.3.1	Global Spillover Networks and RMB Influence Index	42
3.3.2	Regional Spillover Networks and RMB Influence Index	49
3.3.3	Robustness Check	53
3.4	Summary	56
	References	56
4	Why is RMB Systemically Important?	57
4.1	Hypotheses and Models	58
4.2	Data	60
4.2.1	Influence of RMB on Currencies of G20 Economies	60
4.2.2	Factors that May Boost RMB Influence	60
4.3	Results	64
4.3.1	Exchange Rate Regime Reforms that Boost RMB Influence	64
4.3.2	Economic Connections that Boost RMB Influence	69
4.3.3	Robustness Check	73
4.4	Summary	77
	References	77
5	Is RMB a Safe Haven Currency?	79
5.1	Data	80
5.2	The Models	84
5.2.1	Regime Switching Model	85
5.2.2	Pricing Effects of Conditional Currency Co-skewness and Co-kurtosis	87
5.2.3	An Alternative Model	89
5.3	Results	89
5.3.1	Estimates of Regime Switch Model	89
5.3.2	Results on Conditional Currency Co-skewness and Co-kurtosis	91
5.3.3	Results on Pricing Effects of Co-skewness and Co-kurtosis	95
5.3.4	Robustness Check	103
5.4	Summary	109
	References	110
6	Conclusions	113
6.1	Main Findings	113
6.2	Outlook	114

About the Authors



Yinggang Zhou is currently a Professor of Economics and Finance at Xiamen University. He is also the dean of School of Economics, and the director of Wang Yanan Institute for Studies in Economics (WISE), Xiamen University. He obtained his Ph.D. in Economics and Finance from both Xiamen University in 2001 and Cornell University in 2007. His research interests focus on asset pricing, risk management, and international finance. He has published in top ranked business journals, such as *Management Science*, *Journal of Econometrics*, *Journal of Banking and Finance*, *Journal of Empirical Finance*, *Journal of International Money and Finance*, etc. His research has won the best paper awards of Asia-Pacific Association of Derivatives and European Financial Management Associates, and won Chicago Quantitative Alliance Asia (CQAsia) academic competition.



Xin Cheng Ph.D. in Finance, graduated from the Department of Finance, School of Economics, Xiamen University. She is an assistant professor at the Institute of Chinese Financial Studies of the Southwestern University of Finance and Economics. Her research has been published in *Journal of International Money and Finance*, *Journal of Futures Markets*, *Journal of Management Sciences in China*, *China Finance in Chinese*, etc. She also hosts a research project on RMB internationalization supported by Youth Fund of National Natural Science Foundation of China.

Chapter 1

Introduction



In this chapter, we review the evolution of the international monetary system and the history of exchange rate reforms of the Chinese currency, Renminbi (RMB). Next, we discuss recent changes in the international monetary system, as well as the challenges and opportunities to internationalize RMB. Then, we point out the gap between the RMB's growing prominence and its global use, which will be discussed in this book from the view of the systemic importance of the RMB exchange rate. Finally, we summarize the structure of this book with contents of each chapter.

1.1 Background

1.1.1 Evolution of the International Monetary System

The international monetary system has gone through the gold standard dominated by the British Pound, the Bretton Woods System ruled by the US dollar, and the current Jamaica System.

In 1816, Britain took the lead in adopting the gold standard system and issuing currency backed by gold.¹ In the 1880s, major industrial countries gradually adopted the gold standard, forming an international monetary system dominated by the Pound. From 1914 to 1944, those countries involved in World War II could only meet their financial needs by printing money, resulting in varied degrees of inflation. They had to implement capital control one after another, which undermined the gold standard based on the free convertibility of gold.

After World War II, the United States possessed 75% of the world's gold reserves and dominated the post-war monetary order, and established the so-called Bretton Woods System, which is essentially a gold exchange standard. Under the Bretton

¹ With the gold standard, countries agreed to convert paper money into a fixed amount of gold.

Woods system, the dollar was linked to gold at a fixed price for gold and could, at least in theory, be exchanged for gold at this fixed price. The countries signing the Bretton Woods Agreement promise to link their own currencies to the US dollar based on the gold content of their currencies and ensure that the fluctuation range of their currencies' exchange rates against the US dollar is maintained within 1% through the intervention of the central bank.² The Bretton Woods System established the core position of the US dollar in the international monetary system and made the US dollar displace the British Pound as the anchor of the international currencies.

However, the Bretton Woods System was born with inherent weaknesses, known as the 'Triffin Dilemma'.³ The US dollar could not maintain its status as the world's reserve currency without incurring ever-growing deficits. In other words, the US dollar cannot maintain its value while providing a steady stream of liquidity to the world in the long run. In the 1960s, with the arms race and the Vietnam War, the US government increased the supply of US dollars in response to the fiscal deficit, resulting in a sharp depreciation of the US dollar. Foreign governments and investors began to lose faith in the dollar and demanded to exchange for gold from the US.

To mitigate the inherent risks of the Bretton Woods System, the International Monetary Fund (IMF) introduced the Special Drawing Right (SDR) in 1967 to meet the rising demand for international liquidity of the monetary authorities of various countries.⁴ Meanwhile, to deal with the crisis of the Bretton Woods System, the Hague Conference of the European Community unveiled the Werner Plan to establish a European Monetary Union. In August 1971, the United States stopped exchanging gold at the fixed exchange rate, severely damaging the US dollar's credibility. As a result, the Bretton Woods System finally collapsed in March 1973, paving the way to an era of a floating exchange rate system, with a surging wave of countries abandoning dollars for gold and the German mark.

In October 1973, following the fourth Middle East war, the Organization of the Petroleum Exporting Countries (OPEC) increased oil prices substantially. The United States, as one of the largest oil-consuming countries, accumulated a huge balance of payments deficit, while oil-producing countries acquired a large amount of US dollars, which left room for negotiation and cooperation. In 1974, the United States began buying crude oil from Saudi Arabia and providing the country with military assistance. In return, Saudi Arabia used dollars to price and settle oil trade and

² The International Monetary Fund (IMF) is responsible for supervising the operation of the Bretton Woods System, improving its ability to solve the temporary imbalance of balance of payments and preventing the competitive devaluation of currency. The United States has a veto in the IMF.

³ If the United States stopped running balance of payments deficits, the international community would lose its largest source of additions to reserves. The resulting shortage of liquidity could pull the world economy into a contractionary spiral, leading to instability. If U.S. deficits continued, a steady stream of dollars would continue to fuel world economic growth. However, excessive U.S. deficits (dollar glut) would erode confidence in the value of the U.S. dollar. Without confidence in the dollar, it would no longer be accepted as the world's reserve currency. The fixed exchange rate system could break down, leading to instability.

⁴ A book asset that can be used to repay the debts of the International Monetary Fund and make up for the balance of payments deficit between the governments of member States.

used the proceeds to buy US Treasury bonds, thereby assisting the United States in taming inflation. In this way, the system of circulating petrodollars was established after the end of the Bretton Woods System. The petrodollar circulation system freed the issuance of US dollars from the lack of reserves and maintained the status of the US dollar as the dominant currency in the floating exchange rate system.

In 1976, the IMF ratified the Jamaica agreement, which officially acknowledged the reality of the US dollar's decoupling from gold and the floating exchange rate regime that many countries had already adopted. Afterward, members of the IMF could freely arrange their exchange regime. In 1978, the IMF further ratified the agreement on the 'non-monetization of gold'. Since then, the Jamaica System began, under which the value of the currency is determined by the credibility of the issuing country.

In March 1979, the European monetary system was established. The members of the European Community used the European Currency Unit (ECU), which was pegged to the German mark, for bookkeeping and settlement. Euro replaced ECU in 1995 and was officially issued on January 1, 1999.

The Jamaica System witnessed increasingly frequent and severe currency crises. In 1992, speculators short-sold European currencies such as the British Pound and Italian Lira because Europe could not coordinate the monetary policies of its member states. During the Mexican Peso crisis from 1994 to 1995, speculators attacked the Argentine Peso, the Brazilian Real, and the Chilean Peso. The 1997 Asian financial crisis started with the Thai baht and spread to the Philippine peso, Indonesian rupiah, and Malaysian ringgit.

In the twenty-first century, financial crises spread more rapidly and broadly than ever before. The subprime mortgage crisis, which originated in the United States in 2007, rapidly spread worldwide and sparked the global financial crisis in 2008.⁵ In 2009, the sovereign debt crisis that originated in Greece rapidly spread to the rest of the European Union, triggering the European debt crisis.⁶ The financial turmoil in 2020 led to a global economic recession.⁷

All these crises are closely intertwined with the international monetary system and the role of the dominant currency—the US dollar. Therefore, China has attempted to promote the RMB as a currency with the potential to make positive changes to the international monetary system.⁸

⁵ On February 13, 2007, two US subprime mortgage companies began to reduce lending and issue profit warnings. Then, two subprime mortgage companies announced that they were on the verge of bankruptcy.

⁶ On December 8, 2009, the world's three major rating companies downgraded Greece's sovereign rating.

⁷ According to World Economic Situation and Prospects, a report released by the United Nations, in 2020, the world economy shrank by 4.3%, over two and half times more than that during the global financial crisis of 2008.

⁸ Zhou Xiaochuan, former governor of the People's Bank of China made an address titled 'Reform the international monetary system', which calls for reform of the current currency monetary system to secure global financial stability and facilitate world economic growth.