A New Framework for Currency Internationalization: Identifying Strategies for the EU and China to Challenge the USD Hegemony

By Mikkel Sager

Submitted to
The Central European University
Department on International Relations

In partial fulfilment of the requirements for the degree of Masters of Arts

Supervisor: Professor Lajos Bokros

Vienna, Austria,
2024

Copyright Notice

ABSTRACT

This thesis investigates the potential of the Euro (EUR) and Chinese Renminbi (RMB) to challenge the hegemony of the US Dollar (USD) in the global monetary system by analyzing the interplay of political, economic, and military factors on the degree of internationalization of the currencies. Utilizing a Linear Multiple Regression Model (LMRM), the study quantitatively assesses the influence of these factors—collectively termed the Factor Trinity—on the internationalization of currencies (CI). Empirical data from 2002 to 2021 is employed to measure CI through foreign exchange reserves, foreign exchange turnover, and cross-border banking claims and liabilities, representing the three functions of money. The findings reveal that while both the EU and China possess distinct opportunities to enhance their CI, significant domestic and international challenges remain. For the EU, aligning the European Central Bank policies more proactively, fostering economic growth, and increasing strategic arms transfers to counter US arms transfers to allies could strengthen the EUR's position. For China, liberalizing capital flows, transitioning to innovation-driven growth, and balancing political and economic strategies are crucial for advancing the RMB. Despite these strategies, the study concludes that neither the EUR nor the RMB poses an immediate threat to USD hegemony but suggests that strategic initiatives could enable especially the EUR to challenge the USD hegemony in the future. This research contributes to the academic discourse by providing a comprehensive framework for assessing currency internationalization and its implications for global monetary dynamics.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to all those who supported and guided me throughout the course of my research and the writing of this thesis. Their assistance and support have been indispensable in the completion of this work.

In particular, I would like to extend my heartfelt thanks to my supervisor, Professor Lajos Bokros. His unwavering commitment and exceptional teaching in this complex and relatively unexplored subject have been of the highest quality and without comparison. I am especially grateful for his early recognition of this project's potential and his substantial investment of time and effort. Without his support, the realization of this project would have been significantly more challenging.

Furthermore, I would like to thank Judit Minczinger. Judit helped me with this project at a difficult and important time. She made the transition to her as my academic writing teacher smoother than I could have hoped for. Emotionally and academically, she has been a great support that has lifted the quality of the content to a height I could not have done myself.

Lastly, I would like to extend my deepest and most heartfelt thanks to Robin Bellers. Robin, nobody has had a bigger impact on my development these last two years than you. I thank you for working with me on every assignment I had to hand in, improving my writing skills, and teaching me how to write about difficult subjects in ways that are easy to understand for the reader. I cherish our memories deeply and miss the friendship we developed. You were involved with the first papers I wrote on this subject and helped me with the first drafts of the literature review and theory chapter, but you have been in my thoughts in every word I have written ever since. You are deeply missed.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BIS: Bank of International Settlement

BRI: Belt and Road Initiative

BRICS: Brazil, Russia, India, China & South Africa

CB: Central Bank

CBBCL: Cross-Border Banking claim and liability

CBI: Central Bank Independence

CI: Currency Internationalization

CPC: Communist Party of China

ECB: European Central Bank

EUR: Euro

EDF: European Defense Fund

EPF: European Peace Facility

FED: Federal Reserve System

FOREX: Foreign Exchange Reserves

GB: Government Bonds

GDP: Gross Domestic Products

IDD: International Debt Denominated in Currency

IFC: Internaitonal Financial Centers

IMF: International Monetary Fund

LMRM: Linear Multiple Regression Model

MIT: Middle-Income Trap

MNE: Multinational Enterprises

PBC: People's Bank of China

PFET: Private Foreign Exchange Transactions

RMB: Renminbi

SIPRI: Stockholm International Peace Research Institute

TV: Trade Volume

USD: United States Dollar

WB: World Bank

Introduction

In a time when China is challenging the liberal international order, the US and EU are attempting to isolate Russia from the world market, and conflicts in the Middle East are causing increasing tensions, the study of currencies' role in international relations gains unprecedented relevance. Currencies have always shaped the fundamental structures of global finance and economics. With countries being political entities, their currencies are - now more than ever - political tools affecting the political and economic relations among countries (Ingham 2020). The degree of Currency Internationalization (CI) is vital in understanding global dynamics, as it influences a country's financial credibility, global influence, soft power tools, and global prestige. Yet, a puzzle occurs when diving into academic literature, as scholars only have a vague understanding of what factors define and promote CI. Thus, it is puzzling when scholars present arguments for changes or status quo, as there is no credible quantitative framework that yet has backed these claims. This puzzle, along with the increased political and media attention on the role of the RMB and EUR in the monetary order has laid the ground for the Research Question: "*How can the EU and China strategically utilize their political, economic, and military capabilities to actively promote their currencies globally, potentially challenging the hegemony of the USD in the global monetary system?*" Thus, the thesis aims to develop a credible framework, rooted in theory, to identify the significant variables that hold a causality with currencies internationalization, and use the framework to assess how and if the EU and China can credibly challenge the USD hegemony

.

The thesis defines a monetary hegemony based on its currency's degree of Internationalization. Thus, CI is the pivotal variable the thesis will center around, as a challenge on the USD hegemony would have to be either origin from a significant rise in another currency's internationalization, or a decrease in the USD's Internationalization. A monetary hegemon is, thus, also in the unique position of enjoying the exorbitant privilege, allowing the hegemonic currency to be lifted above standard monetary constraints such as the Monetary Trilemma. Thus, a study of the monetary hierarchy should always include the hegemon, but the bulk of the analysis should focus on the contesting currencies, as they share characteristics that do not necessarily oblige to the hegemonic currency.

This thesis provides a comprehensive analysis of the strategies that the EU and China could deploy, to potentially challenge the hegemony of the USD in the global monetary system. Utilizing a robust methodological framework, this research applies a Linear Multiple Regression Model (LMRM) to assess the impact of political, economic, and military capabilities (referred to as the Factor Trinity) on the internationalization of currencies. The quantitative analysis, grounded in empirical data collected over two decades, provides a detailed assessment of how political, economic, and military factors collectively influence the international standing of the EUR and RMB relative to the USD. From the existing theory, the independent variables, Central Bank Independence (CBI), Political Globalization, (IDD), Trade Volume (TV), GDP, Current Account Deficit, military Transfer of Equipment, and Military Expenses are identified. The dependent variable, CI, is quantitatively measured through three main indicators: foreign exchange reserves, private foreign exchange transactions (PFET), and the currency denomination of cross-border banking claims and liabilities (CBBCL), which are meant to resemble the three functions of money.

The paper identifies a statistically significant positive relationship between IDD, GDP, and Arms Transfer, as well as a statistically significant negative relationship for CBI. When diving further into country-specific relationships to identify the characteristics of the three different currency types, it shows that the only statistically significant independent variable that affects the USD's CI is arms transfer, with CBI being NA as is a constant. For the EU, GDP has a statistically significant positive relationship as well as an NA for CBI. China's RMB also has a statistically significant positive relationship with its GDP, but, interestingly enough, it also has a statistically significant negative relationship with arms transfer. These findings reveal that both the EU and China possess unique opportunities and challenges to increase their CI, driven by their unique political-economic contexts. The analysis highlights how the EU can challenge the USD's continuous expansion by countering their arms transfers abroad, while China does not have the same opportunity. The following qualitative analysis of the EU's and China's Central Banks further reveals that they both possess fundamental monetary obstacles that must be addressed before they can be considered credible challengers of the USD hegemony.

Chapter 1, the Literature Review, critically examines existing scholarly work to contextualize the current understanding of global currency hierarchies and the strategic implications for the EUR, RMB, and USD. It further delves into the Main Concepts, establishing the academic foundation needed to understand CI and its metrics. Chapter 2 engages with the theory, drawing from structural realism to discuss the relative power of nations and their currencies, as well as highlighting the Factor Trinity that draws heavily on the covered literature. In Chapter 3, I present the Research Design & Methodology, outlining the analytical framework and the data sources utilized for empirical investigation. This includes the operationalization of variables within an LMRM to quantitatively assess the impact of the factor trinity on CI. Chapters 4 and 5 present a Dual Analysis—quantitative and qualitative assessments of the statistically significant variables, and how the EU and China can strategically enhance the international roles of their currencies through these. It finishes by synthesizing the findings and discussing the implications for international policy and currency diplomacy. The Conclusion consolidates the insights gained, evaluating the potential shifts in global currency hegemony and suggesting avenues for future research.

Chapter 1: Literature Review

This chapter will highlight the ways previous scholars have approached the question of the global currency hierarchy. It explains why there is a need to create an extensive and unique framework that credibly examines the integration of currencies in the global economy.

1.1 Main Concepts

To understand a currency's hierarchical integration into the global economy, one must be familiar with the academic foundation that has enabled its study. CI is, arguably, one of the most repeated terminologies in the scholarly literature on this subject. It was first introduced by Cohen in 1971, where he laid the foundation for future academic literature in the area of international currencies. Cohen proposes that the degree of internationalization of a currency depends on its use at the international level as a medium of exchange, unit of account, and store of value for official and private actors and institutions (1971)[1]. The term has since then been integrated into academia, especially when analyzing rising economies' currencies' influence in the global market (Kenen 2009; Pattnaik and Elango 2009; Frankel 2012; Norrlof 2014; Portes and Rey 2014). The theory of CI has to a great extent remained uncontested and has lacked a critical analysis of the factors introduced by Cohen in 1971. Therefore, a critical review of the factors affecting a currency's internationalization is heavily needed as the facets of the global economy have fundamentally changed over the past 50 years (Kahn 2019).

CI has further been used in literature when describing the global currencies hierarchy. Broadly speaking, three types of terminology exist when addressing different kinds of internationalization of currencies. The first type introduced was by Cohen in 1998, where he introduced the Currency Pyramid, identifying seven types of currencies and their relationship. His terminology has frequently been used in further work (Cohen 1998; Mosley 2003; Reiss 2015; Eagleton 2021). Another terminology is drawing extensively on the famous work by Wallerstein and his World System Theory (Wallerstein 1974a; 1974b), the literature investigates the relationship and hierarchy between international currencies, adopting and applying the terminology of a Center, Semi-Periphery, and Periphery to the global currency hierarchy (De Conti et al. 2013; De Paula et al. 2017; Orsi et al. 2020; Prates 2020; Murau et al. 2022). The last terminological approach was introduced by Helleiner in 2008. In his work,

[1] These three variables are formally known as the three functions of money internationally (Menger 1871)

he introduces the concepts of Master Currency, Top Currency, Negotiated Currency, and Neutral Currency. A master currency is the currency of a hegemonic or imperial state that coerces its use by other states. Thus, it always derives its status from the political, economic, and military relationships between the issuing and the subordinate states. The USD would be classified as a top currency today. A top currency is one of the most favored currencies by the world market for various monetary purposes. Its status is therefore determined primarily by economic factors. A currency like the EUR, or the British Pound would be classified as that today. A negotiated currency is when the issuing state bargains or negotiates politically with other states for their use of its currency, offering inducements such as military and political support or economic benefits. Examples of negotiated currencies include the RMB today and the Russian Rubles before 2022. A neutral currency is a currency whose international use originates primarily from the strong, but non-dominant, economic position of its issuing state, which has no interest in promoting its international use. Examples include the Swiss franc and the Singaporean Dollar (Helleiner 2008). Due to the nature of Helleiner's classification, when it comes to the discussion of how to challenge a hegemony, his terminology and classification of currencies is particularly useful, and will, thus, be used going forward in this paper.

The underlying factors of what constitutes the hierarchal integration of global currencies into the global economy have been widely debated in academia. In the existing literature, a Factor Trinity constantly appears in the most prominent scholars' work as the determining components, namely states' political, economic, and military capabilities (Strange 1971; Krasner 1976; Kirshner 2003; Cohen 2015; Norrlof et al. 2020).

Firstly, The political factors predominantly argue that political relations provide a considerable sense of security between allies due to transparency, information exchange, and cultural, political, and economic convergence which often follow alliances (Strange 1971). This spills over to the exchange of currencies concerning the functions of money internationally (Cohen 1971).

Secondly, the economic factors emphasize the entanglement of international economic networks, with the spillover of cultural 'best practice', economic preferences, and trust (Kirshner 2003). The economic networks are, thus, important as they reinforce the embeddedness of currencies in bilateral, international, and global institutions (Cohen 2015). Once a trusted network of money has been established, its continuous use reinforces its embeddedness in the global economy. The bigger the economy of the currency issuer is, the more naturally the economic networks will develop and reinforce themselves in the global economy (Farrell and Newman 2019).

Thirdly, the link between a currency issuer's military power, and enforcement of economic networks is well-researched. Most famous is the example of the US trading military security to Saudi Arabia and its allies for the continuous use of the USD in the global oil market (Yergin 1991). The trade of regional security for a more substantial financial and monetary orientation toward the military power is built on the assumption that the military power possesses the ability to enforce its monetary and fiscal interests in regions, internationally, and globally if needed (Krasner 1976). This presumption can only be upheld by a powerful military force, as it needs to be able to prevent its lenders from defaulting on their obligations (Norrlof et al. 2020).

It is through the lens of these three factors, that scholars argue about whether the USD's hegemony is coming to an end as China's economic network and military power grows, and the EU is expanding its foreign policy ties in an attempt to achieve strategic autonomy.

1.2 Key Debate

The debate on the global hierarchy of currencies has frequently extended into a debate about the development of the international order, and the clash of superpowers (Cohen 2013; Grigoriev 2019; Siddiqui 2020). The debate about the global currency hierarchy diverges from the debate about the international order, as there is an overabundance of renowned scholarly work that convincingly argues that the USD hegemony will prevail (Beckley 2011; Kirshner 2014; Norrlof 2014; Costigan, Cottle, and Keys 2017). The literature widely concurs that the USD is deeply embedded in the global economy to such a degree that it is reinforcing itself as the most central currency regardless of external forces trying to change or challenge it. Scholars additionally argue that besides the relative decline in the US economy compared to China and its diminished political influence, the US's military supremacy and far-reaching political and economic ties to other countries and institutions globally ensure an unrivaled degree of global integration of the USD for several decades. Furthermore, scholars argue that while there is a growing presence of bilateral agreements between other states, notably exemplified by the China-Russia agreement in May 2023 (Hayley 2023), none of the competing currencies possess the convertibility, capabilities for sustaining a long-term budget deficit, nor hold a trust like in the USD and US Government.

The opposite belief in literature does not enjoy the same degree of support among scholars, but due to frequent attention in media, political speeches, and public debates, it is necessary to include the academic literature that argues that the RMB will obtain the status as the global currency hegemon in the foreseeable future (Green and Gruin 2020; Jenkins 2022). These scholars proclaim that China has a distinctive approach to attracting Multinational Enterprises (MNEs) and international financial centers (IFCs) to its market. MNEs and IFCs willingly assume currency risks associated with acquiring an increasing amount of RMB to fully exploit China's growth potential. China strategically uses these markets to enhance the global integration of the RMB, and thereby fundamentally transform the infrastructure of global financial markets. Moreover, China's extensive investments in Asia, Africa, and Latin America through the Belt and Road Initiative (BRI) are anticipated to have enduring implications. Notably, countries participating in the BRI have incurred substantial debt to China, relinquishing their sovereign rights over key resources, infrastructure, and domestic policies (Nascimento 2020). China has effectively established an economic network within the Global South through its significant investments in the BRI, with military capabilities serving as deterrence from dishonoring the legal agreements. Additionally, there exists a widespread consensus among the same scholars regarding China's formidable political challenges regarding the RMB. These challenges encompass achieving the status of a currency haven during crises, navigating the well-known monetary trilemma, and preparing for the liberalization of its capital market.

The third grand strand in the literature argues for the rise of a multipolar global currency system with the USD, EUR, and RMB as the three main currencies. Most broadly is the agreement of an inevitable de-dollarization of the global monetary system (Fratzscher and Mehl 2014; Portes and Rey 2014; Ryan 2014; Liu and Papa 2022; Pettis 2022). The EUR and RMB consistently emerge in academia as the strongest contenders to challenge the hegemony of the USD, given the comparable GDP, international trade involvement, and financial market activities. Scholars argue that the EUR and RMB have become key drivers of currency movements in their respective regions, suggesting a deeper integration of the currencies in some geographical areas than assumed by other scholars. The EUR and RMB have thus, to an extent, already been established as regional hegemons. Additionally, the efforts of the BRICS coalition to reduce dependence on the USD have led to the creation of critical infrastructure required for a non-dollar financial system. The infrastructure enables these nations to withstand the impact of US Sanctions, USD volatility, geopolitical pressure, and any further attempts to

weaponize the USD against them. Moreover, the persistent current account deficit of the US raises concerns about the stability of its economy and, consequently, the dominance of the USD in the global economy. These movements collectively highlight the structural challenges facing the integration of the USD in the global economy, signaling a shift away from its favor.

1.3 The Gap in the Existing Literature

Although the theory of what constitutes the hierarchal integration of global currencies into the global economy is widely agreed upon among scholars, there does not yet exist an extensive framework and index that has credibly validated the theory. Consequently, the current debate relies on educated guesses and indicators as mentioned in the previous section. Thus, this thesis aims to develop a pioneering framework and index to assess the degree of global integration of currencies, which, as a natural extension, will function as a comprehensive definition of the global economy. Such a framework will enable the paper to provide a unique, descriptive quantitative analysis of the dynamic relationship between the hierarchical integration of the currencies in the global economy and test the existing theory through deductive reasoning.

Within the existing literature, Kotarski and Tan have provided the only academic attempt to capture the global integration of currencies in their article ‘Measuring Currency Power from 2005 to 2018’ (2019). In their focus on the relative power of currencies, the scholars diverge from the narrow concentration on the currencies' global integration, which is the focus of this thesis, and devote a significant focus on currency issuers' abilities to weaponize their currency, as well as political determinants of currency power. Thus, the scholars create three indexes: ‘CI Index’, ‘Monetary Capability Index’, and ‘Quality of Governance Index’. For their article, Quality of Governance, and Monetary Capability indexes are relevant due to their broader objective of capturing currency power. However, these indexes do not offer significant insights into the integration of currencies in the global economy. Thus, the CI Index is the only index of interest to look at for this thesis. Although the index bears the marks of the scholars' diverted focus and neglects the inclusion of Cohen’s fundamental work mentioned earlier, it builds upon the work done by Norrlof (2014) and provides pertinent variables to include, namely the Foreign Exchange Reserves (FOREX), PFET, and currency denomination of cross-border banking claims and liabilities. FOREX has traditionally served as the primary

indicator in discussing the potential decline of the USD hegemony and is a crucial measure of Central Banks' trust in foreign currencies. PFET highlights what currency private actors choose to put their trust in, which is significant considering the substantial role of private spending in money circulation. Kotarski and Tan further argue that the structure and composition of CBBCL effectively estimate the pulse of the global commercial bank market.

Another article that adds further variables that need to be considered for an extensive framework that measures the integration of currencies in the global economy, is 'The Future of the Global Monetary System' by Grigoriev (2019). The article is devoted to presenting a brief insight into the current global currency hierarchy and provides short guesses of how the future development of gold, the EUR, BRICS, and Crypto Currency would contest the hegemony of the USD. Although the article does not aim to uncover the relationship between global currencies and their degree of integration in the global economy, it does present a table that has variables defining the integration of the USD in the global monetary system. The table is based on the article, 'The U.S. Dollar's Global Roles: Where Do Things Stand' by Goldberg and Lerman (2019). Besides the inclusion of the FOREX and CBBCL, covered by Kotarski and Tan (2019), the articles mention foreign exchange turnover (FET), and Government Bonds (GB) (Goldberg and Lerman 2019; Grigoriev 2019). FET measures the sum of international trade in various currencies, which provides an important insight into the volume of international currencies in the financial market. This speaks to the financial trust in the stability, convertibility, and credibility of the currencies. The GB is another important indicator of currencies integration in the global economy, as GBs are fundamental in all economies. Hence, the currencies and magnitudes of GBs provide important insights into what currencies governments put their trust in when regulating financial markets.

The covered variables are all significant indicators for the degree of integration of currencies in the global economy. However, it is important to note that these variables are not necessarily equally important. Kenen and Genberg provide further insights into the variables already covered, in their respective articles, 'Currency Internationalisation: An Overview' (Kenen 2009), and 'Currency Internationalisation: Analytical and Policy Issues' (Genberg 2009). The articles do not present new variables to include but appraise the need to weigh the variables differently, as their importance is not all equal. Both scholars represent the Bank of International Settlement (BIS) and published their papers leading up to the BIS Conference, 'Currency Internationalisation: Lessons from the Global Financial Crisis and Prospects for the

Future in Asia and the Pacific', which took place in 2009. Kenen emphasizes the importance of merchandise trade, referring to FET. He argues that the patterns of preference embed the currency in international finance, thus making it an integrated part of the global economic environment. Kenen further argues that the currency of bonds and securities can give some of the best indications of how integrated currencies are in the global economy: a bond and security issued in a currency of either the issuer or buyer is to be perceived as partial Internationalisation, whereas a bond with a currency that is not issued by either the issuer or buyer is to be regarded as a full Internationalisation of a currency in the bond and security market.

Genberg builds on Kenen's article as he further highlights the features that characterize the Internationalisation of a currency (2009). Genberg strongly emphasizes that the most visible aspect of the Internationalisation of a currency is the frequency and volume used in transactions among non-residents outside the jurisdiction where the currency was issued, arguing for it to be a direct resemblance of the global demand for the currency for individual actors (as reflected in the PFET). Besides agreeing with Kenen on the importance of a currency's integration in international trade, bonds, and securities, he agrees with the most frequent feature of measurement in modern literature, the currency's global volume in official reserve holdings. Genberg argues that this variable differs from previous aspects due to the nature of the lender, as well as the element of the status of trust involved. The official reserves, thus, indicate a country's trust in the currency issuer as well as its capability to maintain a high level of global credibility in the currency. Together, Kenen and Genberg's articles provide an in-depth understanding of some of the most pivotal variables and thus make an important contribution with their indication that the variables should not be weighted equally when measuring the integration of currencies in the global economy.

The literature review has shown that the question of the global currency hierarchy has gained significant scholarly attention. It has also highlighted that, although many prominent scholars have addressed this question, there is yet to be established an extensive and credible framework that provides an in-depth analysis of CI. Table 1 highlights the variables to be considered to measure this, based on the literature covered and what it has suggested.

Table 1: Variables for measuring the Internationalization of Currencies

Variable	**Sources**
Foreign Exchange Reserves (FOREX)	(Cohen 1971) (Genberg 2009) (Beckley 2011) (Norrlof 2014) (Cohen 2015) (Kotarski and Tan 2019)
Cross-Border Banking claim and liability in the currency (CBBCL)	(Cohen 1971) (Goldberg and Lerman 2019) (Kotarski and Tan 2019)
Private Foreign Exchange Transactions (PFET)	(Genberg 2009)(Kotarski and Tan 2019)
Foreign Exchange Turnover (FET)	(Kenen 2009) (Genberg 2009) (Grigoriev 2019)
Government Bonds (GB)	(Kenen 2009) (Grigoriev 2019)

Chapter 2: Theory

The Theory Chapter starts by introducing readers to the theoretical assumptions rooted in the realm of International Relations, embracing the tenets of structural realism. The chapter then delves into a deeper exploration of the theoretical constructs introduced in the literature review, dissecting the factor trinity that determines a currency's suitability as a global hegemon.

2.1 Theoretical Foundation: Structural Realism and Relative Power

This study is grounded in the theoretical framework articulated by Kenneth Waltz in his seminal work "Theory of International Politics" (1979), where he introduced Structural Realism as a comprehensive lens for examining global affairs. Waltz's framework introduces three distinct levels of analysis: the individual, the state, and the international system, emphasizing the salience of the systemic perspective. At the heart of this perspective lies an acknowledgment of the anarchical nature of the international system, characterized by intricate structures and constraints that mold state behavior and choices. These structures arise due to the absence of a central authority, leaving states to navigate within the boundaries of their relative power. This concept is rooted in the notion of power being inherent relative, underscored by the zero-sum dynamics wherein advancements in power for one state often entail corresponding reductions for others. Within this framework, states engage in a calculated pursuit of maximizing their relative power, driven by imperatives of safety, security, and stability. The interplay of power dynamics and systemic influences, Waltz asserts across the realm of international relations, guiding states as they navigate complex webs of alliances, rivalries, and strategic decisions. By emphasizing the hierarchical level of analysis, Structural Realism provides a lens through which to comprehend the broader trends in world politics, while still acknowledging the existence of the individual and the state.

The thesis situates itself within the lines of structural realism, heavily drawing inspiration from Kenneth Waltz's work. Central to this theoretical lens is the recognition of the seeking to increase power within the structures formed by the international society as a primary driving force in international relations, with states navigating the global stage to secure and maximize their relative power within an anarchical system. In the context of the global currency

hierarchy, the theory's emphasis on power dynamics becomes particularly pertinent. As currencies vie for dominance, the rise of one often comes at the expense of others, reflecting the theory's zero-sum underpinnings. The thesis aligns with structural realism's tenets by dissecting how states, in their pursuit of power, strategically position themselves within the hierarchy. Just as states seek to optimize their security and influence, currencies are maneuvered in ways that mirror states' strategies, intertwined within networks of alliances, military dependencies, and economic policies (Norrlof et al. 2020; Cohen 2015; Kirshner 2014). This dynamic interplay underscores the complicated relationship between power distribution and the currencies' roles in shaping the global economic order, a paradigm that structural realism adeptly illuminates.

2.2 Factor Trinity

To credibly test the existing theory, it is important to illuminate the details of the theory in question. Whereas the literature review briefly presented the theory in the context of the existing academic literature, this part seeks to provide a more detailed description of the factor trinity of a state's political, economic, and military capabilities. This will serve as a guideline to develop a quantitative framework that can assess how the EUR and RMB can challenge the USD's hegemony.

2.2.1 Political Factors

Political Alliances are to be understood as both formal and informal political relations. It provides direct and indirect channels for currencies to be used in cross-border flows (Helleiner 2008). The direct channels build upon Stranges' notion of the political dimension of currencies, illustrating how political dynamics can directly affect a currency's international appeal independent of its economic attributes (Strange 1971). Markets and countries with strong political relationships tend to hold each other's currencies as store value and unit of account when their political alliances include characteristics of mutual trust, transparency, and similarity in policies. Furthermore, A master currency issuer can apply coercive power to force weaker states to use the currency as a unit of account or medium of exchange regardless of its economic consequences. Neutral currencies can support their currency through interactions that will have a positive effect on its international use as all three functions of money (Helleiner

2008). Therefore, when a currency issuer enjoys a significant degree of political globalization, its currency will automatically be more attractive internationally.

Indirect channels refer to when a currency's fundamental economic characteristics are significantly influenced by political factors. Domestic policies, cultural exposure, and institutional arrangements can play a prominent role in affecting the attractiveness of a currency (Walter 2006). Most significantly, and frequently mentioned, domestic policies evolving around CBI affect the degree to which international actors will engage and commit in a market. The dominant position is that a high degree of CBI ensures conservative monetary policies and that the Central Bank (CB) strictly follows its mandate, preventing it from being used for political purposes. However, another strand argues that CBs can be instrumental in promoting a currency abroad when taking on an active role, by building a market for trade denominated in its currency (Eichengreen and Flandreau 2012).

2.2.2 Economic Factor

The economic factors are highly driven by the confidence of the currencies, which are working as ties between the networks (Lim 2006). The confidence is largely derived from the perceived stability and predictability of the currency's value, influenced by the issuing country's monetary and fiscal policies (Tavlas and Ozeki 1992). This is grounded in the rationality that the stability of a currency mitigates the risks associated with holding it long-term, augmenting its attractiveness as a global store value. This further increases the global convertibility of the currency (Lim 2006). The convertibility of a currency is crucial in its potential use in economic networks. Thus, confidence and convertibility are crucial components when measuring a currency's potential in economic networks.

Another important component that enforces confidence and attracts one's currency internationally is the size of one's domestic market. When the domestic market reaches a certain level, the confidence in the market, and thus, the currency the market is denominated in, increases. It incentivizes trade denominated in the currency and encourages both domestic and foreign entities that are in the domestic market to accumulate debt, and savings denominated in the currency (Shu, He, and Cheng 2015; Norrlof et al. 2020).

A third factor is the degree of its currency issuers' integration into the global economy. The scale of a country's transactional network in the world economy plays a crucial role as a

larger economic size and deeper integration into the global trade and financial systems can amplify a currency's network effects (Reiss 2015; Murau and Klooster 2022).

Lastly, a currency issuer has to finance the use of its currency abroad. This has historically happened through a Current Account deficit. In theory, it can also be financed by a capital account deficit, but it is less stable, and typically smaller than the current account. Thus, a currency issuer with expectations of an increased internationalization of its currency must be able to finance it through a big Current Account Deficit (Tavlas and Ozeki 1992; Lim 2006)

2.2.3 Military Factor

A strong naval and military power is described as a necessity to ensure global monetary capabilities. Strong military capabilities ensure a presence globally, enabling hard power to create or defend favorable trade routes and conditions. The perception of a dominant military capability further functions as an incentive for other countries to pay their debt to the military power, adopt their currency for security reasons, or reject the use of a competing currency to mitigate the risk of military conflict (Mundell 1998, McNamara 2008). Most importantly, although often overlooked, is the notion that military power is a necessity, but not a causality in promoting a currency to become a hegemon: The theory states that a currency issuer cannot become a hegemon without a dominant and globally present military but is not ensured hegemony by having a dominant and globally present military.

Military power's impact on currencies is grounded in the currency issuers' military capabilities, and military relations as an extension of its capabilities. Political-military relations are grounded in their complementary capabilities and/or the exchange of security for one actor in exchange for economic, political, or strategic concessions (Jackson and Nei 2015). This includes political/economic agreements where one party adopts the use of another party's currency as a medium of exchange, store value, and/or unit of account in exchange for military security. Despite the Saudi Arabia case previously mentioned, it has also been seen much more recently, yet not as formally, with the Chinese BRI, where China leverages military support associated with strategic investment projects (Gordon, Tong, and Anderson 2020).

Chapter 3: Research Design & Methodology

The research design employs a comparative longitudinal case study approach, using the cases of the EUR and RMB to offer insights into the complex relationships between the Factor Trinity and CI. The nature of the currencies, being three different classes where the USD is a Master Currency, EUR, is a top Currency, and RMB is a negotiated currency, provides the opportunity for a joined analysis that can indicate universal characteristics of the factors' influence on currencies' internationalization. Through this insight, I will be able to test the robustness of the theory of the Factor Trinity, as well as gain insights into the dynamic development of the EUR and RMB over time in relation to the USD, enabling me to analyze if and how the EUR and RMB can challenge the USD's hegemony. The choice of a longitudinal approach enables the tracking of variables related to the Factor Trinity over an extended period, enabling me to predict future developments based on past trends. The methodological framework for this design involves several key steps, including the identification of relevant variables for CI and Factor Trinity, the collection of longitudinal data from reliable sources, and the application of rigorous analytical techniques to examine the data.

3.1 Theory Testing: Linear Multiple Regression Model

To effectively test the robustness of the Factor Trinity theory and its influence on CI, this thesis applies a LMRM as the central methodological tool. LMRM is a statistical technique that analyzes the relationship between one dependent variable (CI), and the independent variables (Factor Trinity). This model is particularly suited for analyzing the impact of multiple independent variables (representing the components of the Factor Trinity) on a dependent variable (CI). This approach allows for an analysis that accounts for the change in the global landscape over a longer period, assessing long-term relationships between the Factor Trinity and CI, and providing a nuanced understanding of how and which factors drive CI. The data will span from 2002 when the EUR was first introduced as coins and banknotes (European Union 2024), until 2021, when reliable data across the factors became difficult to identify. By incorporating data across this 19-year period, the LMRM can capture the temporal dynamics and trends in CI, which is particularly important for understanding how the Factor Trinity has influenced CI over time.

To assess the validity of the model's assumptions, and to identify potential problems, the models will undergo a review of diagnostic plots, including Residuals vs. Fitted, Normal Q-Q Plot, Scale-Location, and Residuals vs. Leverage Plot.

The operationalization process involves several critical steps: defining the variables, collecting and preparing the data, selecting the appropriate model, conducting the regression analysis, and interpreting the results.

3.2 Dependent Variable: Quantifying CI

To measure the degree of CI, I will operationalize Cohen's notion of CI, focusing on the three functions of money internationally. Building on existing literature as highlighted in Table 1 in the literature review, money as a unit of storage will be defined as the FOREX, money as a medium of exchange is measured as the FET, and money as a unit of account is measured as CBBCL. The latter is the most questionable instrument to measure and is the most overlooked in academia due to the difficulty of gathering and analyzing data on this topic. However, the choice of CBBCL is believed to be the best indicator available, as banks deal with both public, private, and commercial finances, and the extent they use a currency as a claim and liability internationally hints towards how much the currency is used as a unit of account by their customers. The data for the FOREX is collected from the IMF's Currency Composition of Official FOREX. The data for the FET is collected from the BIS's Trinnial Survey, and the data for the CBBCL is from BIS's Locational Banking Statistics. The Trinnial Survey, although being the most accurate and credible data for FET, only entails data for every third year, starting from 2001. To accommodate this, I apply a linear interpolation, assuming that the change between two points is linear, and calculate the intermediate values accordingly:

$$y = y_1 + \frac{x - x_1}{x_2 - x_1} \times (y_2 - y_1)$$

Where y is the estimated value at point x, $x_1$and $x_2$are the x values for the two points between the interpolation, y_1 and y_2 are the FET values of the two points between the interpolation, and x is the point at which the estimation is needed for FET.

It is further worth mentioning that PFET, and GB as measures of CI are neglected in this thesis as measures. This is grounded in the notion that PFET are included in FET, and GBs, although it is a noteworthy part of the global economy, its inclusion would risk homogeneity

in the CI framework as it is highly linked with both FOREX and CBBCL causing uniformity and double accounting in the dataset.

To assess the currencies' degree of internationalization mathematically, the three dimensions of money will be given equal weighting, as there is currently no study that credibly dissects the weighted importance of the three functions, and it is beyond the scope of this thesis. Thus, to compare and combine the three functions of money, they need to be denominated in a comparable measurement. The most accurate common denominator for this is ratios, thus each component of CI will be measured as a ratio of the total world usage of currencies. Dividing the components by 3 ensures an average contribution from the components, preventing an unbalanced final measurement in cases of significant difference between the components:

$$FOREX_{Ratio} = \frac{FOREX_{Currency}}{FOREX_{World}}$$

$$FET_{Ratio} = \frac{FET_{Currency}}{FET_{World}}$$

$$CBBCL_{Ratio} = \frac{CBBCL_{Currency}}{CBBCL_{World}}$$

$$Currency\ Internationalization = \frac{FOREX_{Ratio} + FET_{Ratio} + CBBCL_{Ratio}}{3}$$

3.4 Independent Variables: Quantifying the Factor Trinity

To quantify the Factor Trinity, I will utilize multiple academically recognized indexes, and primary data from renowned institutions like WB, IMF, and BIS. The data collection will be grounded in theoretical reasoning as outlined in the Theory Section, and the independent variables will, thus, be chosen based on their ability to resemble the theoretically identified factors, as presented in Table 2:

Table 2: Overview of the Independent Variables, its Factor Classification, and source

Variable	**Factor Trinity**	**Source**
Central Bank Independence	Political	(Romelli 2024)
Political Globalization	Political	(ETH Zürich 2024; Gygli et al. 2019b)
International Debt Denominated	Economic	(World Bank 2024c)
Trade Volume	Economic	(International Monetary Fund 2024)
GDP	Economic	(World Bank 2024b)
Current Account Deficit	Economic	(World Bank 2024a)
Military Transfer of Equipment	Military	(SIRPI 2024)
Military Expenses	Military	(SIRPI 2024)

For the **Political Variables**, CBI, and Global Political Influence have been the most dominant factors mentioned in the literature.

For the *CBI*, the paper relies on the index developed by Romelli in 2022 and later updated in 2024. Romelli's framework credibly assesses the independence of Central Banks all over the world, in multiple categories, ranging from 0 to 1 (Romelli 2022; 2024). His work has been widely used since its publication in 2022 (Cepeda and Villamizar-Villegas 2023; Masciandaro 2023; Monnet 2023; Romelli 2024).

For *Global Political Influence*, I apply the academically recognized KOF Globalization Index developed by Alex Dreher (2006) and further supported and updated by ETH Zurich yearly (Gygli et al. 2019a). The index is broadly divided into three categories: economic, social, and political globalization, each having multiple sub-categories, and ranks countries on a scale from 0 to 100 (ETH Zürich 2024). The Index is widely recognized and used frequently in many papers on the topic of global political influence and globalization (Chen and Lee 2023; Dai et al. 2023; Goel and Mazhar 2023; Sadiq et al. 2023). The KOF Index does not include the EU as an entity. To account for that, in the data-cleaning process, a weighted average for the EU will be calculated to account for the economic relevance of the various countries, determined by their relative GDP and TV:

$$Weight_{Country_N} = \frac{\frac{GDP_{Country}}{GDP_{EU}} + \frac{TV_{Country}}{TV_{EU}}}{2}$$

$$Weighted\ Average(EU) = Weight_{C1} \times Political\ Factor_{C1} + Weight_{C2} \times Political\ Factor_{C2} \ldots$$

For **Economic Variables**, interpreting the theory is not as straightforward when identifying the variables. Being the most researched and emphasized factor in the Trinity, it also reflects the abundance of variables included.

To quantify the *trust in a currency*, I measure the IDD. This is based on the notion that debt often is denominated in currencies with high demand, stability, convertibility, and trust (Bandiera and Tsiropoulos 2019). The data is collected from the WB's International Debt Statistics Databank (World Bank 2024c).

To measure *the size of a currency issuer's transactional network*, the paper utilizes their TV, being the total sum of imports and exports in a year. This captures all international transactions made with the currency issuer in the given period. The data is collected from the IMF Data Bank (International Monetary Fund 2024).

To measure *the size of a currency's market of origin*, the data measures the GDP of the issuing market, denominated in the USD, using the data from the World Bank's Databank (World Bank 2024b).

Lastly, the *Current Account Deficit* Data, as mentioned as a good indicator of how the currency issuer is financing the outflow of its currency to the global market, is also being collected from the World Bank (World Bank 2024a).

To measure the **Military Variables**, I rely on data extracted from SIPRI, which is known as one of the most reliant institutions when it comes to country-specific military data. To measure the size of security relations between issuing and other states, I utilize SIPRI's 'Volume of International Transfers of Major Conventional Weapons' database, based on the notion that a high transfer of military equipment indicates both the amount of friendly military relations and their commitment (SIPRI 2024). To measure the military capabilities of a country, I rely on the military expenditures of the countries (SIRPI 2024).

A complex study of military power, focusing on global firepower has been conducted, but due to data limitations, it does not cover the period studied in this paper. Thus, military expenditures give an excellent indication of capabilities, operational power, and deterrence for the currency issuers.

3.5 Operationalizing Linear Multiple Regression Models

The operationalization of the models will be carried out using R, with the use of Excel for data-cleaning and unification of the various datasets. The Omitted Variable Bias has been addressed by carefully relying on the existing theory when choosing the variables. The choice of variables is the weakest when interpretations are needed to quantify the variables. Specifically, this occurred when identifying the function of money as units of account. Further research should focus on quantifying these factors more comprehensively, leaving less room for interpretation. Another omitted variable occurred in the FET component of CI but was addressed by utilizing statistical techniques to meet the gaps in the data. Based on the theory, the analysis will create a joined global regression model relying on the USD, EUR, and RMB's CI, incorporating all the independent variables identified. The formula for testing the relationship between CI and the Factor Trinity is as follows:

$$Currency\ Internationalization = \beta 0 + \beta 1 \times Political\ Globalization + \beta 2 \times CBI + \beta 3 \times International\ Debt\ Denominated + \beta 4 \times Trade\ Volume + \beta 5 \times GDP\ Ratio\ World + \beta 6 \times Current\ Account + \beta 7 \times Arms\ Transfer + \beta 8 \times Militar\ ySpending + \epsilon$$

β0 is the intercept, β 1 ,...,β 9 are the coefficients of the respective variables ϵ is the error term.

This Regression Model will measure the global characteristics of the variables that influence CI. It is ideal to measure this as the currencies are based in the three biggest economic regions and from the three biggest markets in the regions respectively. Furthermore, as the currencies are identified in three different classes, the model encompasses the characteristics needed to identify universal trends and patterns. Thus, this collective analysis tests the theory across different geopolitical and economic contexts. The model will further benefit from this, as combining the data from the three currency issuers increases the sample size, enhancing the statistical credibility of the analysis.

After establishing which variables are universally significant, conducting a country-specific analysis allows for the examination of how local contexts influence the relationships between these variables and CI, testing whether the Factor Trinity can vary depending on the specific Currency Issuer. Analyzing each country separately allows for the identification of unique relationships that may be obscured in a pooled analysis. By focusing on the statistically significant variables identified from the joined global analysis, the country-specific models are

more streamlined and targeted, reducing the risk of overfitting. Suppose the outcomes of the country-specific models vary significantly. In that case, it will prove that these identified factors are, although universal, heterogeneously subject to significant country-specific weights, showing that the specific political-economic environment and policy framework might mitigate or amplify the impact of the factors. This will emphasize the importance of country-specific analysis to fully understand the prospects of challenging the USD's hegemony.

3.6 Analyzing Country-Specific Opportunities

Following the quantitative analysis, a comprehensive qualitative analysis of the EU and China respectively will be conducted. Integrating qualitative insights with quantitative findings will create a holistic view of the complex processes of driving CI: By delving into the context and implications of these variables on a national level, the qualitative analysis complements and deepen the understanding of the quantitative results, offering a view of how the EU and China can challenge the USD's hegemony in the global monetary system. Thus, this stage will focus on dissecting the statistically significant variables identified from both the global and local regression models for the EU and China by looking into the opportunities and challenges within the topics of their statistically significant variables, providing policy-specific insights in how to strategically operationalize in these areas. This blended approach ensures that the study captures not only the statistical significance of certain variables but also their practical relevance and impact on global monetary and political dynamics. The qualitative analysis will ultimately serve to contribute to a more nuanced and comprehensive understanding of driving CI in the contemporary global economy.

The qualitative examination will leverage a variety of sources, including policy reports from renowned institutions like SIPRI, as well as state-of-the-art academic papers. Thus, this phase is crucial for translating the empirical findings and theoretical contributions into actionable insights. It will provide a platform for assessing the opportunities and challenges identified in the quantitative analysis advantages and disadvantages of the global and local specific statistically significant variables, as well as how the EU and China can operationalize them to their advantages.

Chapter 4: Structures of Currency Internationalization: A Quantitative Analysis

As highlighted in the theory section, this thesis adopts the notion of zero-sum when investigating CI. However, from Structural Realism's point of view, the zero-sum notion derives from power politics, whereas this thesis adopts it through economic reasoning. As the three variables defining CI are ratios of the total world sum, they naturally get the characteristics of a zero-sum: An increase for one currency is a decrease for another. This notion is important to adopt when analyzing the CI of the three currencies, as it is in this light that one should see the dominance of the USD, the steadiness of the EUR, and the notable rise of the RMB as visualized in Figure 1:

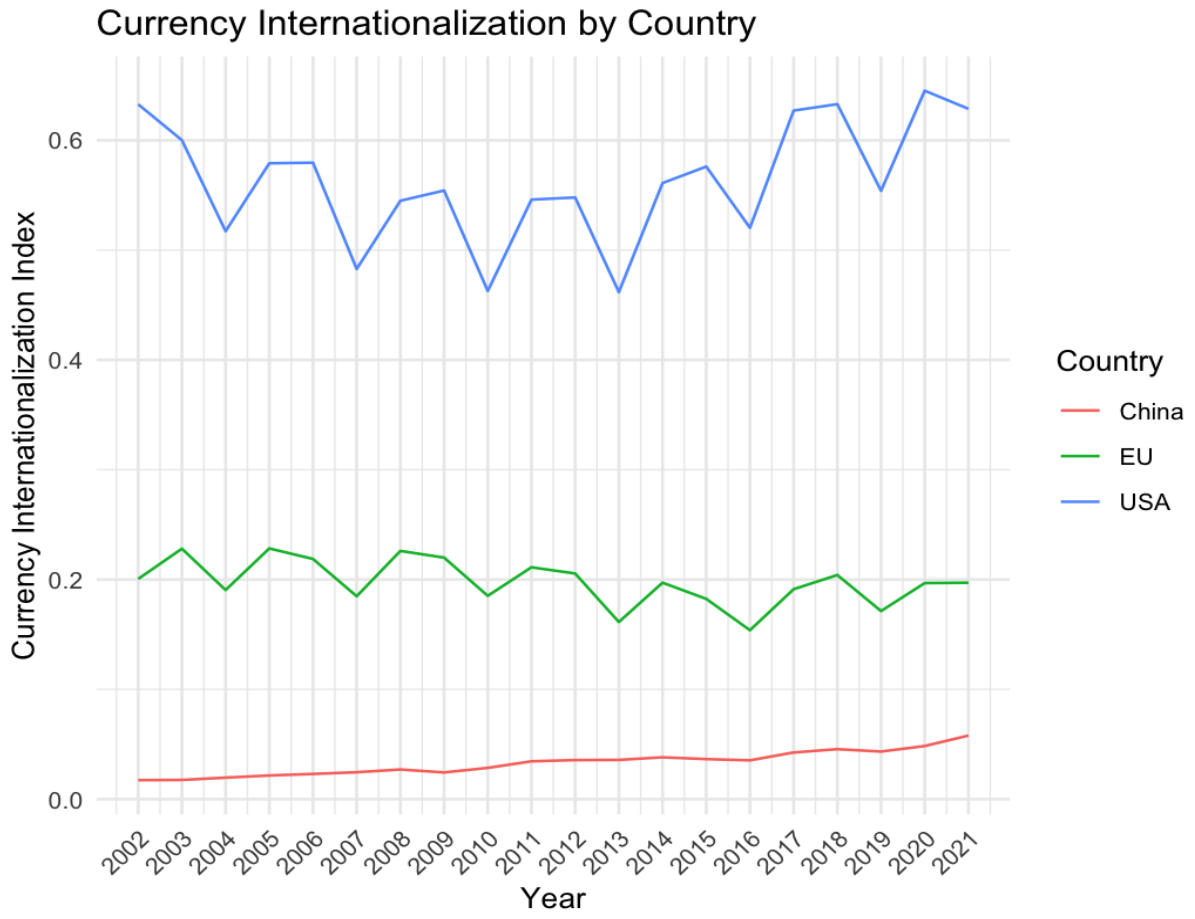

Figure 1: Currency Internationalisation by Country

The USD line indicates a robust and dominant internationalization. What is noteworthy is the slight increase in the USD from 2008 to 2009, showcasing that the 2008 Financial Crisis did not have immediate negative impacts on the USD's internationalization. Furthermore, there is a slight upward trend after 2013, suggesting that the USD either has retained or slightly enhanced its position as the unquestionable hegemon of the international monetary system.

In contrast, the EUR starts at a notably lower index value than the USD, yet surprisingly high in 2002 for being a newly introduced currency. There is a slight visible decline in the internationalization of the EUR, after 2011, showcasing how the EU-based financial crisis in the early and mid-2010s may have eroded some confidence in the currency. However, what is significant for further research is the synchronous and cyclical movement for both the USD and EUR. Although the reason is unknown, it can be speculated to be associated with the coordination between the FED (Federal Reserve) and ECB (European Central Bank), global shifts in trading patterns, or joint military operations.

The RMB started as a very de-internationalized currency in the early 2000s but shows a noteworthy and steady increase in the internationalization of its currency. It signals a currency on the rise but also one that still has ground to cover before it can challenge the dominance of the USD or the established position of the EUR.

Together, the Currencies account for a considerable amount of currencies used internationally. From 2017 to 2021, they encountered on average 86% of the world's currencies in use, peaking in 2020 with a total of 89%. They are, therefore, excellent currencies to investigate, when analyzing general trends, as they encounter 89% of the use of international currencies within the three functions of money.

4.1 The Global Relationship between CI and the Factor Trinity

The joined global LMRM, containing the data from the Factor Trinity variables and CI from both the USD, EUR, and RMB is, thus, a study of 89% of the use of money in the world. The model, as highlighted in Table 2, shows the relationship between CI for all three currency issuers, and the independent variables previously identified. When looking at the 1st quartile (1Q), Median, and 3rd quartile (3Q), they are all slightly above zero, suggesting that the model is generally a good fit, with the residuals mostly clustered near the predicted values. The range between the minimum and maximum residuals (in this case, -0.081620 to 0.073520) indicates the overall variability in the model's prediction errors. This range is relatively small, indicating that the errors between the observed and predicted values are confined within a narrow band. To further support these observations, the average distance that the observed values fall from the regression line, residual standard error, of 0.03151 as indicated at the bottom of the table suggests a very tight fit of the model to the data. It is, therefore, safe to say that the model exhibits a high level of accuracy in predicting the dependent variable based on the independent variables included in the analysis. This accuracy is further evidenced by the Multiple R-squared value of 0.9832, indicating that approximately 98.32% of the variability in the dependent variable can be explained by the model. The Adjusted R-squared value of 0.9805 adjusts this figure for the number of predictors in the model, suggesting that the inclusion of additional variables has not led to overfitting and that the model remains effective after accounting for the number of independent variables. The F-statistic, with a value of 372.6 on 8 and 51 degrees of freedom, and its associated p-value of less than 2.2e-16, strongly rejects the null hypothesis that none of the independent variables affect the dependent variable, confirming the model's overall significance. This comprehensive statistical evidence underscores the robustness of the model in capturing the dynamics between CI and the independent variables.

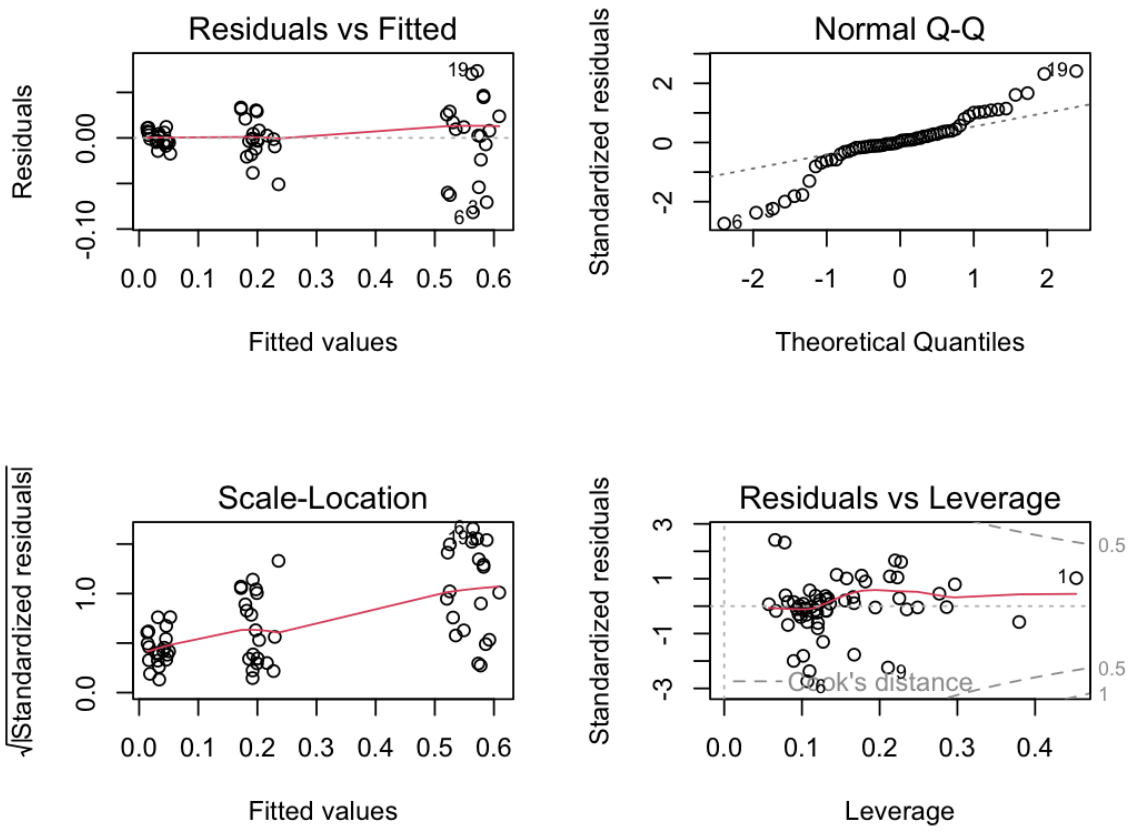

Figure 2: diagnostic plots of the Joined Global LMRM

The diagnostic plots as shown in Figure 2 are a key component in assessing the adequacy of the model.

The "Residuals vs Fitted" plot is used to check the assumption of linearity and homoscedasticity. The residuals should be randomly dispersed around the horizontal line at zero, without any distinct patterns. In the provided plot, there seems to be a random scatter of points without a clear pattern, which is a good sign. However, there are a few outliers that are far away from the zero line, which could potentially influence the model.

The "Normal Q-Q" helps assess if the residuals are approximately normally distributed, which is an assumption of linear regression. Points following the dashed line closely indicate that residuals are normally distributed. The plot provided shows points that generally follow the line but deviate in the tails. This indicates that the residuals have heavier tails than the normal distribution, which could suggest the presence of outliers might influence the degree of normal distribution.

The "Scale-Location" plot is used to check the homoscedasticity assumption. Ideally, the red line should be horizontal and the points evenly spread around it, indicating that the

variances of the residuals are equal across all levels of the fitted values. The provided plot shows some spread in the residuals, but there is no clear pattern indicating heteroscedasticity. This would mean that the model does not have constant error variances, which is an important assumption to meet for a linear regression model.

The "Residuals vs Leverage" plot helps to identify influential cases that might have an undue influence on the model estimation, potentially skewing the regression line. In this plot, data points with high leverage can potentially be outliers. However, there is no indication that any points are significantly influencing the model, as all points seem to be well within the Cook's distance boundary.

Table 3: Joined Global Linear Multiple Regression Model

Min	**1Q**	**Median**	**3Q**	**Max**
-0.081620	-0.007514	0.001293	0.011459	0.073520

Coefficients				
	Estimate	**Std. Error**	**T value**	**Pr(>|t|)**
(Intercept)	-1.592e-01	4.883e-01	-0.326	0.745733
Political Globalization	5.255e-03	6.282e-03	0.837	0.406750
CBI	-4.756e-01	1.174e-01	-4.052	0.000173 ***
International Debt Denominated	1.151e-02	1.167e-03	9.865	2.05e-13 ***
Trade Volume	-2.449e-09	4.848e-09	-0.505	0.615656
GDP Ratio	4.420e-01	1.924e-01	2.297	0.025734 *
Current Account Balance	-3.164e-14	3.428e-14	-0.923	0.360291
Arms Transfer	8.027e-06	3.627e-06	2.213	0.031371 *
Military Spending	-7.344e-08	7.187e-08	-1.022	0.311661

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.03151 on 51 degrees of freedom
Multiple R-squared: 0.9832, Adjusted R-squared: 0.9805
F-statistic: 372.6 on 8 and 51 DF, p-value: < 2.2e-16

When looking at the coefficients table (table 3), it is noticeable that many of the given factors do not have a statistically significant relationship with CI. However, four variables, including a minimum of one variable in each of the three Factors in the Factor Trinity, have a statistical significance worth exploring:

The negative relationship between CBI, being a political factor, and CI, marked by a coefficient of -4.756e-01 and a p-value of less than 0.0001, is particularly intriguing. This suggests that higher independence of a central bank is associated with a lower CI, contrary to the conventional wisdom that CBI is a hallmark of monetary confidence and financial

attractiveness. This could imply that in the context of global currencies, the market may perceive a high degree of independence as a potential for less coordinated fiscal and monetary policy. This, in turn, contributes to the view of money being a political entity, in which the regulation of money from Central Banks should also be politically motivated (Ingham 2020; Murau, Rini, and Haas 2020; Helleiner 2008; Strange 1971).

Another highly statistically significant variable, indicating confidence in a currency is the **IDD**, showing a positive relationship between the amount of IDD in a currency, and its degree of CI.

The **GDP ratio**'s positive effect on CI, while less significant than CBI or IDD, still highlights the foundational role of economic size and performance in determining a currency's Internationalization. A larger GDP suggests a more substantial economic base, which can support currency stability and inspire confidence among international investors and governments.

Lastly, the **Arms Transfer** variable also shows a statistically significant effect, indicating that when a country issues more arms, which is an indication of enforcing its military alliances, enhances its currency's strategic importance, this, in turn, increases its attractiveness as a medium of exchange, unit of storage or unit of account.

Thus, the model illustrates that across regions and currency types, four main variables have an impact on currencies' degree of internationalization, being CBI, IDD in the currency, GDP Ratio, and arms transfer. To further study the importance of these variables, country-specific models will be created, identifying these four variables' impact on the USD, EUR, and RMB respectively.

4.2 Assessing Characteristics of the Global Significant Variables in Local Contexts

In the context of the **USD, the LMRM** investigates the global significant variables in the US context. When assessing the residuals, the gap between 1Q and 3Q is slightly higher than the global model, yet still narrow, showcasing that the probability of bias is of no concern. The range between the minimum and maximum residuals is relatively narrow, signaling that the model's predictive errors are modest. The overall fit of the model, as indicated by the Multiple R-squared value of 0.3959 reveals that around 40% of the variability in the USD's CI is explained by the model. This is expected as the data sample and variables are significantly decreased, given that the purpose of the model is to identify variation within the globally significant variables. The adjusted R-squared model further reduces to 0.2826, indicating that when the number of variables is taken into account, the explanatory power of the model decreases. This speaks to the complexity of country-specific characteristics for CI, arguing that the factors' relationship with CI varies significantly across countries. However, the F-statistic value of 0.04 still shows that there is a statistically significant relationship between the CI and the 4 universally significant factors.

Table 4: USD Linear Multiple Regression Model

Min	**1Q**	**Median**	**3Q**	**Max**
-0.07617	-0.07617	-0.03907	0.01559	0.06283

Coefficients	(1 not defined because of singularities)			
	Estimate	**Std. Error**	**T value**	**Pr(>|t|)**
(Intercept)	3.522e-01	1.043e+00	0.338	0.7399
CBI	NA	NA	NA	NA
International Debt Denominated	-1.422e-02	4.255e-02	0.334	0.7426
GDP Ratio	2.211e+00	1.906e+00	1.160	0.2630
Arms Transfer	1.997e-05	7.990e-06	2.500	0.0237 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.04706 on 16 degrees of freedom
Multiple R-squared: 0.3959, Adjusted R-squared: 0.2826
F-statistic: 3.495 on 3 and 16 DF, p-value: 0.04022

Notable is that CBI is non-applicable due to singularities. When visualizing the CBI for us, it is evident that it remains constant throughout the entire period studied. Thus, this is the cause of the singularity, showing that there is no variance in the degree of independence for the FED, holding a constant value at 0.625 on a scale from 0 to 1.

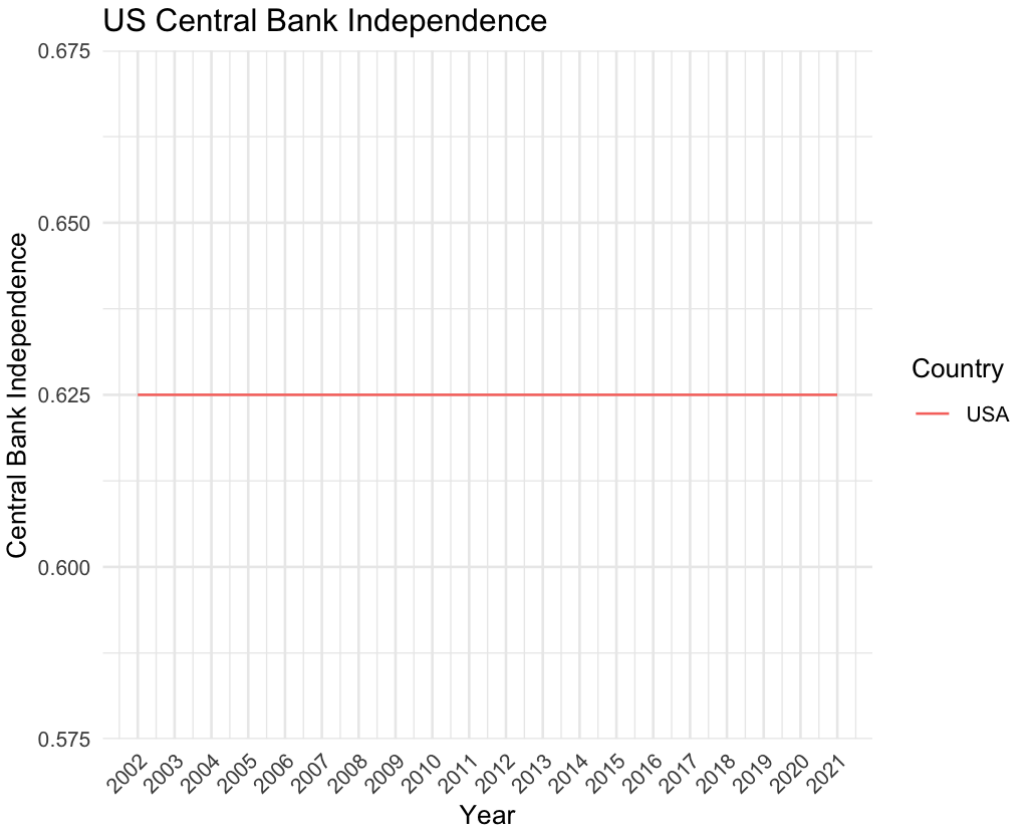

Figure 3: US Central Bank Independence

The only statistically significant variable in the US model is Arms transfer with a positive coefficient. This suggests that, for the USD, an increase in arms transfer is associated with an increase in CI. This speaks to the notion that arms transfer enhances the US' strategic monetary alliances, incentivizing their allies to use the USD in arms trade, thus giving their allies a strategic incentive to use USD as a medium of exchange unit of storage and unit of account.

The absence of significant effect of the IDD and GDP Ratio, which both were significant on the global model reflects the unique status of the USD, speaking to a possible decrease of political and economic factors once a currency obtains exorbitant privilege. Once the exorbitant privilege is obtained, a further CI will be promoted through strategic incentives and opportunities by other states, and not by domestic and global economic factors.

Table 5: EUR Linear Multiple Regression Model

Min	**1Q**	**Median**	**3Q**	**Max**
-0.028110	-0.016133	0.007918	0. 011654	0.020359

Coefficients	(1 not defined because of singularities)			
	Estimate	**Std. Error**	**T value**	**Pr(>|t|)**
(Intercept)	6.933e-03	1.371e-01	0.051	0.9603
CBI	NA	NA	NA	NA
International Debt Denominated	5.901e-03	6.558e-03	0.900	0.3815
GDP Ratio	5.234e-01	2.056e-01	2.546	0.0216 *
Arms Transfer	-2.178e-06	3.219e-06	-0.677	0.5083

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.01825 on 16 degrees of freedom
Multiple R-squared: 0.3722, Adjusted R-squared: 0.2545
F-statistic: 3.162 on 3 and 16 DF, p-value: 0.05343

Like with the USD, **the EUR LMRM** investigates the global significant variables in the EU context. The EU model, as illustrated in Table 5, however, has a smaller gap between 1Q and 3Q than the USD LMRM in Table 4, and the global model in Table 2, suggesting a tighter clustering of residuals around the median, which indicates a more consistent model across the central range of data. The range from the minimum to maximum residuals is also narrower than both previous LMRMs, indicating that the predictions are closer to the actual data points than previously seen. However, the overall fit of the model, as shown by the multiple R-squared value of 0.3722 indicates that only 37.22% of the CI for the EUR can be explained by these variables. Just like with the USD, this is expected, as the data sample and variables included are significant lovers in the quest of identifying variation within the global significant variables. The adjusted R-squared model shows a 0.2524, showing a lower explanatory power when the low number of variables is taken into account. Overall, although the variables indicate a good fit with CI, the low explanatory power hints towards the argument mentioned in the analysis of the USD, arguing that the factor relationships with CI vary between currency types. With an F-statistic of 3,162, and its associated p-value of 0.053, it narrowly misses the significance threshold of 0.5 indicating that the model is on the border of being considered statistically significant.

Like with the USD, CBI is again non-applicable due to singularities. Like with the USD, a visualization of the EU CBI clearly shows that the CBI of the ECB remains constant just above 0.91 on a scale from 0 to 1.

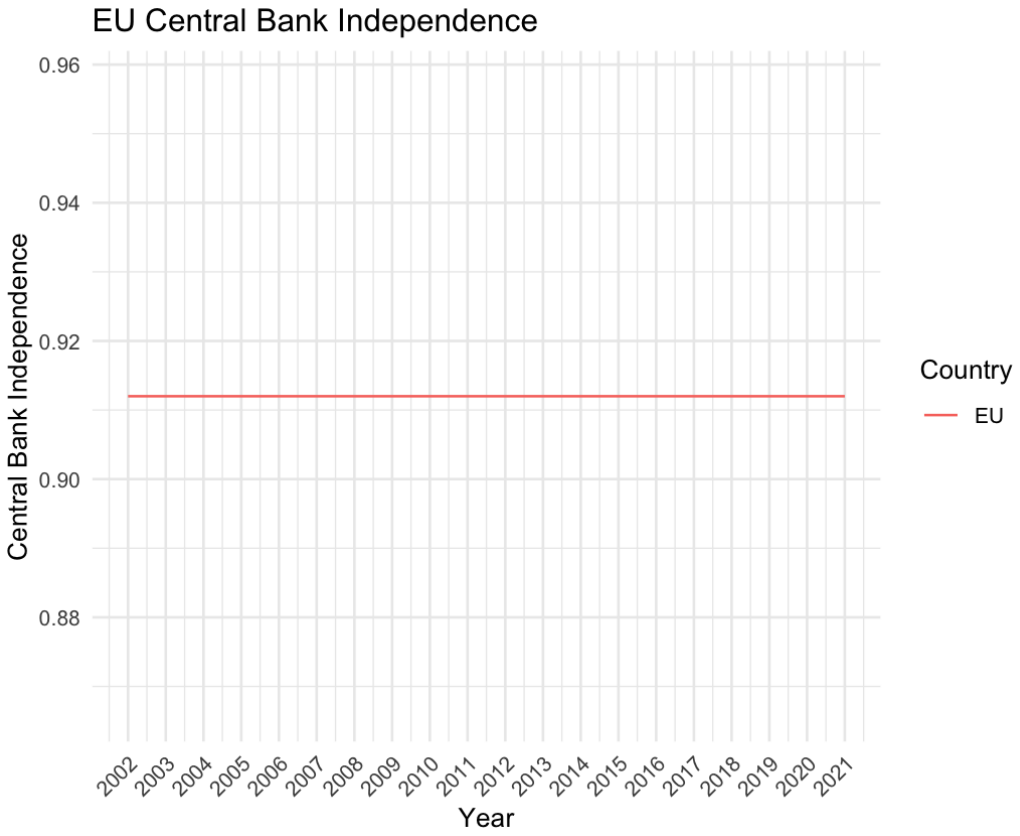

Figure 4: EU Central Bank Independence

The only statistically significant variable in this model is the GDP Ratio with a positive coefficient. This indicates that whenever the GDP of the EU increases, it will have a positive effect on the CI of the EUR. This discovery confirms the broad recognition that economic size matters when promoting one's currency internationally. Having a big economy and growing economy enforces trust in the market, and willingness to invest and trade, and thus, enhances the attractiveness of the currency as a medium of exchange unit of storage and unit of account (Murau, Pape, and Pforr 2022).

The lack of a statistically significant relationship between CI and Arms Transfer for the EU could speak to the notion that the EU as a unified entity is not perceived as a military power. With scattered military autonomy and policy to all member states, a relationship between arms transfer from a Euro-zone country will have a limited impact on the EU's CI.

Table 6: RMB Linear Multiple Regression Model

Min	**1Q**	**Median**	**3Q**	**Max**
-0.0040566	-0.0009841	0.0000164	0.0007367	0.0071141

Coefficients				
	Estimate	**Std. Error**	**T value**	**Pr(>|t|)**
(Intercept)	-9.904e-03	8.630e-02	-0.115	0.910150
CBI	3.532e-02	1.186e-01	0.298	0.769958
International Debt Denominated	-7.202e-04	2.123e-03	-0.339	0.739086
GDP Ratio	2.385e-01	4.697e-02	5.079	0.000136 ***
Arms Transfer	-4.378e-06	1.672e-06	-2.618	0.019408 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.002827 on 15 degrees of freedom
Multiple R-squared: 0.9495, Adjusted R-squared: 0.936
F-statistic: 70.46 on 4 and 15 DF, p-value: 1.535e-09

The **LMRM for the RMB**, as shown in Table 6, stands out in every way compared to the USD and EUR in terms of statistical credibility. In terms of its residual values, the 1Q and 3Q are significantly narrow, both very close to zero. The minimum and maximum residuals are also very small, indicating an overall very good model fit with values being very close to the actual values for most observations. The standard error further confirms this with a value of 0.002827, indicating that on average, the model's predictions are close to the actual observations. The R-Squared value of 0.9495, indicates a very strong relationship between the model's predictors and CI. The Adjusted R-Squared value of 0.936 highlights that even after adjusting for the decreased number of predictors compared to the global model, the RMB model still holds a significant explanatory power. Further, the F-statistic of 70.46, and the p-value of 1.535e-09 cement the model's overall significance, confidently confirming the relationship between the independent variables and CI.

What further stands out with the RMB Model is that both GDP Ratio and Arms Transfer which were the sole significant independent variables for the EUR and USD respectively, are both statistically significant for the RMB. Firstly, the GDP Ratio, with a p-value way below 0.001 shows a statistically very strong relationship with the RMB's degree of CI. The relationship indicates a significant positive impact on the RMB's CI, confirming that the rise of the RMB has predominantly been fueled by the rapid growth China has experienced in the last 20 years. This confirms the relationship identified with the EUR and CI, stating that

currencies gain significance and attractiveness when the domestic market grows and reaches a certain size.

What is particularly interesting is that the relationship between arms transfer and CI is reversed from the USD's relationship. The negative relationship speaks to a trend where Chinese arms transfer abroad negatively affects its currency's CI. This could be because Chinese military arms transfer has not historically been aligned with Western political doctrine (Jackson and Nei 2015). This, most likely, has a negative impact on Western capital-intensive actors' business' and commitment to the Chinese market, as political tensions between home-country and the host country increase the risks of committing to the host country (Beazer Q and Blake D 2018). This notion, once again, confirms that currencies are highly political, and should not be separated from politics when being analyzed.

Overall, it can be concluded that not all the statistically significant independent variables were statistically significant in the individual currency models. Specifically, CBI and IDD were not statistically significant in any of the currency-specific models. This suggests that these variables may have a more generalized effect across countries, which only becomes apparent when the sample size and variability are of a certain size. This underscores the heterogeneity across different types of currency issuers. Especially in how their CI is influenced by and interacts with the global monetary system. This highlights the importance of further context-specific analysis to identify how the EUR and RMB are and can challenge the USD hegemony in the international monetary system.

Chapter 5: An Assessment of the EU and China in their Domestic Contexts: A Qualitative Analysis

Following the quantitative analysis, where the global and local statistically significant variables have been identified, a qualitative analysis of the EU and China will be conducted, analyzing how they can utilize their respective significant variables to challenge the hegemony of the USD in the global monetary system.

5.1 Assessing the EUR: Central Bank Politics, Economic Growth, and Military Activism

For the EU to utilize its **political factors** to promote the EUR internationally, it needs to revisit the role of the ECB. As discovered in the previous analysis, there is a negative relationship between the degree of independence of a CB, and the impact on its CI. Historically, the ECB has adhered to a narrow focus, originating from its 1998 and 2003 monetary policy strategies, which primarily targeted price stability without significant emphasis on EUR internationalization, thereby restricting the central bank from promoting the EUR on the global stage (Klooster 2023). Thus, by adopting a stringent focus on price stability and a cautious approach to avoid being perceived as a political actor, the ECB has limited its ability to engage in more aggressive promotional strategies like those of the Federal Reserve (Thiele 2018). This focus is further underpinned by the ECB's legal and economic framework, which emphasizes extreme CBI and limits its participation in political and economic reforms in member states and abroad. This approach constrains the ECB's ability to engage internationally in ways that could enhance the EUR's global stature (Mudge and Vauchez 2022; Eichengreen and Flandreau 2012).

The Federal Reserve historically played a central role in promoting dollar internationalization during the 1910s and 1920s, notably through the active development of the market for dollar-denominated trade credit, significantly contributing to the success of dollar internationalization (Eichengreen and Flandreau 2012). In contrast, the ECB's stringent independence, while safeguarding it from political influence and ensuring a focus on price stability, has inadvertently led to a conservative approach that sidelines the promotion of the EUR as a global currency. This conservative stance is reflected in the ECB's reluctance to venture beyond its primary mandate, limiting its role in the external representation and promotion of the EUR (Hartmann and Smets 2018).

The ECB updated its monetary policy strategy in 2021 representing a shift in its approach to handling inflation targets within the Eurozone. This change is aimed at re-aligning inflation and inflation expectations more closely with the target rate, signaling a departure from the previous rigid framework that strictly avoided inflation rates exceeding the 2% threshold (Hennecke 2021). Despite this adjustment, the ECB's core mandate continues to focus predominantly on price stability, a commitment that has historically anchored its monetary policy decisions. This focus underscores the ECB's primary responsibility. This commitment to price stability comes with trade-offs, particularly in terms of the ECB's global engagement and the international promotion of the EUR (Debrun et al. 2022). Therefore, for the ECB to obtain a more active role in promoting the EUR alike the FED in the early 20th century, which potentially could contribute positively to the EUR's expansion abroad requires a significant paradigm shift in the ECB.

The theoretical factor that has quantitatively proven to independently promote the EUR internationally is the **economic factor** of the EU GDP ratio to the world. Given that a growing GDP is one of the most prioritized areas for any politician, there does not exist any quick solutions for preventing GDP stagnation. The long-term stagnation in GDP growth that the EU has experienced, is being attributed to factors like secular stagnation, which includes low population growth and weak technological development (Tatay and Kazinczy 2023). Thus, business-as-usual is not an approach that can further the promotion of the EUR internationally.

To counter this trend, the EU can take on a more active role in promoting the EUR and GDP growth, by utilizing the principles of the Entrepreneurial State, as introduced by Mazzucato (Mazzucato 2015), to increase its GDP by adopting a proactive role in fostering innovation and supporting economic growth through effective industrial policies. Mazzucato's work demonstrates the importance of state intervention in driving innovation that private sectors often capitalize on, suggesting that profit-seeking companies frequently benefit from government-funded research and development activities without adequately contributing to the initial risks involved. Currently, the EU is exploring this through the European Innovation Council (European Commission 2024), but despite its efficiency, an operation of 10 Billion EUR is not enough to realize the long-term macroeconomic potential behind early-stage patient capital investments.

In the context of the EU, adopting the principles of the Entrepreneurial State could significantly contribute to enhancing the international stature of the EUR by bolstering the union's economic growth and global competitiveness. By fostering innovation and

technological advancements, the EU can improve the competitiveness of its economy, making its currency more attractive for international transactions and reserves. Through investments in key emerging technologies and sectors, the EU can foster the development of 'EU champions,' akin to the American examples, which can lead the specific industries from the EUR-denominated home market, and thus, enhance the demand for the EUR in global trade and investment. Therefore, the EU can significantly benefit from adopting the Entrepreneurial State model by fostering innovation, supporting economic growth, and enhancing the global role of the EUR. Through strategic state intervention and leveraging key economic factors, the EU can overcome its long-term GDP growth stagnation and strengthen its economic position internationally.

To utilize its **military factors** to challenge the US CI hegemony, the EU's objective must be to diminish the US's arms transfer instead of promoting its own as the quantitative analysis showed that EU arms transfers do not have any significant impact on its CI. Thus, the EU's military policies can only be used to counter the US's promotion of the USD through arms transfer. To effectively replace US arms transfers, the EU can adopt a multifaceted approach. The increasing arms imports by European states, as highlighted by a 47% rise between 2013–22, indicate a growing European intent to diversify their arms sources and enhance their defense capabilities (Wezeman, Gadon, and Wezeman 2023). This growth is predominantly due to the war in Ukraine, where the EU has discovered a weapons industry incapable of mass production in times of war (Leshchenko 2023). Thus, the EU currently finds itself incapable of supplying arms to Ukraine, preventing them from countering US arms transfer elsewhere for strategic purposes in the near future.

From a medium-to-long-term perspective, the EU needs to consolidate its defense industry, making it able to compete with the US industry. For this, the European Defense Fund (EDF) has been established to support collaborative defense research and development projects within the EU. By increasing funding and support for the EDF, the EU can stimulate innovation and technological advancement within its defense sector, making European military equipment more competitive and reducing dependency on US exports. Furthermore, the European Peace Facility (EPF) can be a significant step toward enhancing the EU's ability to fund defense and military initiatives, including the provision of military equipment to partner countries (Maletta and Héau 2022).

Additionally, promoting common European military standards and regulations can help streamline the defense procurement process, reduce costs, and improve interoperability among

EU member states. This can lead to a more unified European defense market, encouraging member states to prioritize European-made arms over external sources. Addressing the "headwinds" faced by the European arms industry, such as market fragmentation and regulatory disparities, is also crucial for the EU to enhance its competitive edge against US arms transfers. Efforts should focus on harmonizing defense regulations, removing barriers to cross-border defense procurement, and facilitating the consolidation of defense companies across Europe. Such measures can improve the efficiency and global competitiveness of the European defense industry (Kleczka, Buts, and Jegers 2020).

Thus, by harmonizing the EU's efforts, and utilizing the EDF and EPF effectively, the EU can build towards increasing its role in global security and arms transfers, thereby positioning itself as a viable alternative to US arms supplies. This will enable the EU to counter strategic US arms transfers, diminishing US arms transfers to promote the USD as a strategically important international currency.

For the EU to be able to credibly challenge the USD Hegemony in the global monetary system, there are several issues they need to address. Firstly, for the ECB to enhance the EUR's global presence, a paradigm shift towards a more proactive and less restrictive framework is necessary, akin to the Federal Reserve's early 20th-century strategies. Secondly, the European Union's stagnant GDP growth poses another barrier to the EUR's international promotion. Adopting the principles of the Entrepreneurial State can be a long-term game-changer, fostering innovation, economic growth, and global champions, thereby enhancing the EUR's attractiveness as a medium of exchange, storage, and unit of account. Lastly, the EU must shift its focus from merely increasing arms transfers to consolidating its defense industry, enhancing interoperability, and promoting European-made arms. By supporting the European Defense Fund (EDF) and the European Peace Facility (EPF), and harmonizing military standards, the EU could strengthen its defense sector, reduce dependency on US arms, and position itself as a viable alternative in global security. These findings, encompassing the entire Factor Trinity could both enhance the EUR's degree of CI, meanwhile diminishing the US's strategic promotion of the USD, and thus, positing a challenge to the USD hegemony. Thus, by implementing drastic ECB reforms, promoting innovation, and a stronger military alliance that can counter US Arms Transfers, the EU has possibilities to further increase the EUR's CI, positioning it to become a credible challenge to the USD hegemony in the future.

5.2 Assessing the RMB: Monetary Politics, Economic Growth, and Military Neutrality

When it comes to the **political factors** of China, it has around the same degree of CBI as the FED, with a slight increase in the politicization of the People's Bank of China (PBC) in recent years (Romelli 2024). This speaks to the increased political coordination between the PBC, and the fiscal and economic trajectory sat by the Communist Party of China (CPC). However, China is facing some monetary constraints that the PBC and CPC need to address if they want to further internationalize the RMB. Monetary policies such as the freer flow of capital, a freer floating exchange rate, and bilateral currency/trade agreements are instrumental strategies in promoting the internationalization of the RMB.

China has a limit on the flow of capital, which naturally, limits the degree of internationalization of its currency, as a freer flow of RMB out of China is needed to promote the RMB internationally. Policies facilitating a liberalization of current and capital account flows will enable foreign investors to access Chinese financial markets and assets more easily, thereby increasing the demand and international use of the RMB (Li, Qin, and Zhang 2017). Until China allows for a much freer flow of capital, it cannot challenge the USD hegemony in the global monetary system.

A temporary approach by China to allow for a controlled increase of capital flows has been through Bilateral Currency Swap Agreements (BCSA) on foreign capital flows, granting the RMB its status as a negotiated global currency. Since 2008, the PBC has signed BCSAs with over 35 foreign central banks. Collectively, these deals amount to more than 500 billion USD. Countries the PBC has signed with include big economies like Argentina, Brazil, Russia, South Korea, and the UAE (Jiang, Liu, and Zhang 2023; McDowell 2019). The BCSAs are further attempts to promote the RMB as a frequently used currency for trade settlements, but their hopes have not yet been realized (McDowell 2019)

Lastly, a freer floating exchange rate allows the RMB to respond more effectively to market demands and economic fundamentals, reducing unilateral exchange rate expectations and mitigating large-scale capital inflows or outflows. This approach will enhance the structural optimization of the economy, support RMB internationalization, and attract foreign investment (Bin 2018). Furthermore, by allowing the RMB to float freely, PBC would reduce the need to accumulate large FOREX, that predominantly are denominated in USD, to defend

a fixed exchange rate, thereby freeing up significant resources that could be used for other economic priorities (J. Wang 2018).

The only factor that has proven to independently promote the RMB internationally is the **economic factor** of China's GDP ratio to the world. However, recent trends in the Chinese GDP development show a slow decrease in its GDP growth, which has given growth to speculations of whether China is falling into the Middle middle-income trap (MIT) (Zeman 2022; Glawe and Wagner 2020). The MIT is a situation where a country's growth slows after reaching middle-income levels and fails to advance to high-income status. This trap is largely due to exhausted initial growth drivers without transitioning to new ones based on innovation and efficiency. In the context of China, this risk has been highlighted due to its rapid economic growth leading to a significant rise in income levels, but now facing a slowdown as well as several structural issues such as declining productivity growth, an aging population, environmental degradation, and increasing inequality (Zeman 2022; Glawe and Wagner 2020).

With the GDP ratio being the only significant driver of RMB's internationalization at its current stage, a MIT would mean a stagnation of the RMB's degree of CI. Thus, to avoid the MIT, China must focus on shifting from growth based on low-cost labor and investments to growth driven by productivity and innovation.

According to international experiences, continuous innovation and industrial upgrading are key factors for overcoming the MIT. There is a concern that China has not yet fully made this transition. Despite making significant investments in research and development, China still faces challenges in moving up the value chain and becoming a leader in high-tech industries (P. Wang et al. 2021). Thus, to avoid the MIT, and continue its growth, China needs to enhance its innovation capacity and promote a continuous increase in human capital to ensure a successful transition from a middle-income to a high-income economy (Lee 2021; P. Wang et al. 2021).

The MIT has further implications for the internationalization of the RMB. The transformation of China's economy towards higher value-added industries and services, increased innovation, and greater domestic consumption can enhance the RMB's role in international markets. However, if China fails to escape the MIT, it will undermine the confidence in its economy and, consequently, the RMB's attractiveness as a global currency

Thus, China needs to actively address the danger of falling into the MIT, as the GDP growth has been the sole driver of CI of the RMB. A stagnated GDP will at best stagnate the

internationalization of the RMB, and at worst, undermine the confidence in the economy, and the then RMB by extension.

The Chinese **military factor**, arms transfer has evolved significantly over the past decades, becoming a critical element of the country's foreign policy and strategic ambitions. However, as highlighted in the previous analysis, there is a negative relationship between Chinese arms transfer and the RMB's internationalization. This was speculated to be due to the political aspect of money, as Western capital-intensive MNEs are discouraged engage with Chinese trade when political tensions increase.

Chinese arms transfers have been a significant element of the country's foreign policy and economic strategy, affecting global security dynamics. China's arms transfers serve multiple objectives, including improving bilateral ties, increasing China's global influence, and acquiring access to natural resources and military bases. China's arms exports have significantly increased, targeting regions such as Africa, the Middle East, and Southeast Asia, where the U.S. has traditionally held strong military ties (Raska and Bitzinger 2020). In recent years, China's arms trade has strategically evolved, focusing on enhancing strategic-diplomatic ties, expanding its influence, and countering the United States' military transfers to its allies. Thus, China has used arms transfers as a tool to strengthen relationships with countries that are strategically located or share common interests against U.S. hegemony (Gilks and Segal 2023).

While China is not the largest global arms supplier, its exports have grown in both volume and sophistication over the past decade. This growth represents a strategic shift as China moves from being an arms seller to a significant player in the global arms market, capable of offering competitive alternatives to Russian and American military hardware (Reshetnikova and Shvets 2023). By providing arms to countries that are either estranged from the U.S. or looking for alternatives to U.S. military equipment, China capitalizes on these opportunities to expand its influence and establish itself as a reliable partner. Moreover, China's no-strings-attached approach to arms transfers, in contrast to the often conditional approach of the U.S., presents an attractive option for many countries (Reshetnikova and Shvets 2023; Raska and Bitzinger 2020)

Thus, it is evident that Chinese arms transfers serve as a political tool in China's broader strategy to expand its global influence, counter U.S. military transfers, and strengthen its strategic partnerships. It speaks to the theory developed, that countering US arms transfers to diminish their geopolitical influence comes with economic consequences as capital-intensive MNEs associate the storage and use of RMB as being a risk. Thus, although strategic arms transfers have a political aspiration of being a leading global power and principal actor, it has

negative effects on the internationalization of the RMB, which forces China to reconsider the trade-off of countering US arms transfer at this stage.

For China to be able to credibly challenge the USD Hegemony in the global monetary system, there are severe issues they need to address. Firstly, the monetary policies of China have significant implications for the internationalization of the RMB. faces monetary constraints limiting the RMB's global reach. The liberalization of capital flows and a freer floating exchange rate are essential for the RMB's international acceptance. Secondly, China's economic situation, particularly its potential fall into MIT, poses a significant threat to the RMB's international stature. To counter this, China must transition from low-cost labor-driven growth to innovation and efficiency-driven growth. This shift is critical for sustaining economic development and enhancing the RMB's global role. Lastly, while arms transfers serve China's geopolitical interests, they negatively impact the RMB's CI. This dichotomy underscores the challenges China faces in balancing its political strategies with economic ambitions. These findings, encompassing the entire Factor Trinity hold the potential to further advance the CI of the RMB, however, at its current degree of CI, and with the severity of the challenges China would need to address, a credible challenge of the USD hegemony seems unlikely in the foreseeable future. China needs to find a way to open up for capital flows without risking capital flight and economic instability, address its declining GDP growth rate and prevent a potential MIT, as well as decide whether to strategically balance its countering of US arms transfer as it negatively affects the CI of its currency. Thus, it is unlikely that the RMB will pose a challenge to the USD without rapid and very significant shifts in all aspects of international relations.

Conclusion

In conclusion, I have explored the strategic utilization of political, economic, and military capabilities (Factor Trinity) by the EU and China to promote their currencies, potentially challenging the USD's hegemony in the global monetary system. I developed a unique framework to measure the degree of CI, providing a quantitative lens grounded in theory, through which to view international currencies' standings. I employed a LMRM to analyze the influence of the Factor Trinity on the internationalization of the EUR and RMB, comparing these with the dominant USD. I was able to quantify the integration of these major currencies within the global economy and highlight the statistically significant role Central Banks, IDD, GDP, and military networks in terms of arms transfer play in their international appeal and usage.

The findings of this thesis underscore the profound implications of the evolving global currency order. The empirical evidence gathered indicates that while the hegemony of the USD is robust, strategic initiatives by the EU and China can only challenge its hegemony to some extent. The growth of GDP has shown as a pivotal catalyst for enhancing CI for both the EU and China. However, the relationship between military transfers and CI presents divergent strategies for the two: while China's arms transfers negatively impact its CI, the EU shows no significant relationship with arms transfers, suggesting a potential strategic tool for the EU to mitigate further USD promotion through US military transfers. The analysis further identified domestic issues needing to be addressed by both the EU and China. The negative causality between CBI and CI suggests that closer political alignment of central banks with governmental strategies could enhance currency promotion abroad, like the Federal Reserve's behavior in the early 20th century. This finding points to a need for significant reforms within the ECB, to align more closely with proactive currency promotion strategies. Conversely, China, with a politically integrated central bank, faces different challenges related to politically imposed capital flow restrictions and a semi-fixed exchange rate.

A qualitative analysis of the EU and China based on the factors identified in the quantitative analysis concludes that neither the EUR nor the RMB possesses an immediate challenge to the USD hegemony. The EUR is established enough internationally to become a credible challenge in the near future, provided the EU uses the ECB more proactively to promote the EUR, increases its economic growth, and increases its strategic arms transfers to countries receiving arms transfers from the US as well. China is facing significant structural issues that need to be addressed before the RMB can become more internationalized, being a

freer flow of capital, freer floating exchange rate, and avoiding a MIT. Due to their domestic limitations, and relatively small degree of CI at this point, it is very unlikely that the RMB will be a serious contender to the USD in the near future.

This thesis has concluded that neither the EU nor China poses an immediate challenge to the USD hegemony, but can advance and potentially challenge the USD hegemony in the future. The framework developed here contributes to the academic debate in that the conclusion supports the mainstream viewpoint, but offers nuances and credibility through the quantitative framework. Further studies should analyze more currencies, including neutral currencies, to better understand the concept of international currencies.

Despite the insights gained from this research, there are limitations rooted in both methodology and theoretical orientation that must be acknowledged. Methodologically, the reliance on LMRMs, while effective for identifying causalities among variables, may not capture the full complexity of CI. The assumption of linearity might oversimplify the relationships between the Factor Trinity and its individual components' influence on currency status, potentially obscuring more nuanced dynamics. To address these limitations, future research should explore the inclusion of non-linear models that can better accommodate the complexities and interdependencies within the factors influencing CI. Investigating models such as structural equation modeling, and fixed effects models could provide deeper insights into the relationships and the strength of indirect effects among variables.

This study is anchored in structural realism, which emphasizes the role of power in international relations. While this provides a robust framework for understanding state behavior, it originates from a US-centric point of view, where economics and political economy are not originally instrumental components of the theory (Guzzini 2015). Additionally, the focus on major powers might overshadow regional dynamics that could influence CI. These limitations suggest areas for further research, particularly in exploring a broader array of influential actors in the global financial system. A future expansion of the theoretical framework to integrate perspectives from global financial governance could enrich the analysis, acknowledging the influential roles of international financial institutions and non-state actors, such as MNEs and intermediatory institutions like SWIFT.

References

Bandiera, Luca, and Vasileios Tsiropoulos. 2019. "A Framework to Assess Debt Sustainability and Fiscal Risks Under the Belt and Road Initiative." *World Bank Policy Research Working Paper*. https://papers.ssrn.com/abstract=3430500.

Beazer Q, and Blake D. 2018. "The Conditional Nature of Political Risk: How Home Institutions Influence the Location of Foreign Direct Investment." American Journal of Political Science. 2018. https://www.jstor.org/stable/26598742#metadata_info_tab_contents.

Beckley, Michael. 2011. "China's Century? Why America's Edge Will Endure." *International Security*. https://www.jstor.org/stable/41428109.

Bin, Zhang. 2018. "Towards a Floating RMB Exchange Rate Regime." *China Economic Journal* 11 (1): 53–60. https://doi.org/10.1080/17538963.2018.1411070.

Börzel, Tanja A, and Michael Zürn. 2021. "Contestations of the Liberal International Order: From Liberal Multilateralism to Postnational Liberalism." *International Organization* 75: 282–305. https://doi.org/10.1017/S0020818320000570.

Boyle, Michael J. 2016. "The Coming Illiberal Order." *Survival* 58 (2): 35–65. https://doi.org/10.1080/00396338.2016.1161899.

Cepeda, V., Taboada-Arango, B., and M. Villamizar-Villegas. 2023. "Can Central Bank Credibility Improve Monetary Policy? A Meta-Analysis." No. 1239.

Chen, Kai, and Dongwon Lee. 2023. "Commodity Currency Reactions and the Dutch Disease: The Role of Capital Controls." *Empirical Economics* 65 (5): 2065–89. https://doi.org/10.1007/S00181-023-02423-9.

Cohen, Benjamin J. 1971. *The Future of Sterling as an International Currency*. London: Palgrave Macmillan.

———. 1998. *The Geography of Money*. Ithaca & London: Cornell University Press.

———. 2013. "Back to Basics: State Power in a Contemporary World - Google Books." In *Back To Basics: State Power in a Contemporary World*, edited by Martha Finnemore and Judith Goldstein, 159–77. Oxford: Oxford University Press. https://books.google.at/books?hl=en&lr=&id=R3tpAgAAQBAJ&oi=fnd&pg=PA159&dq=currency+hierarchy&ots=ojtyqPMqXy&sig=oWAAH0K6J3qvQ1e_J1kYRE0-TB0&redir_esc=y#v=onepage&q=currency%20hierarchy&f=false.

———. 2015. *Currency Power: Understanding Monetary Rivalry*. Princeton University Press. https://doi.org/10.2307/j.ctt1wf4dgb.

Conti, Bruno De, André Biancarelli, and Pedro Rossi. 2013. "Currency Hierarchy, Liquidity Preference, and Exchange Rates: A Keynesian/Minskyan Approach." *Congrès de l'Association Française d'Économie Politique*, 1–22.

Costigan, Thomas, Drew Cottle, and Angela Keys. 2017. "The US Dollar as the Global Reserve Currency: Implications for US Hegemony." *World Review of Political Economy* 8 (1). https://doi.org/10.13169/WORLREVIPOLIECON.8.1.0104.

Dai, Jiapeng, Zahoor Ahmed, Rafael Alvarado, and Mahmood Ahmad. 2023. "Assessing the Nexus between Human Capital, Green Energy, and Load Capacity Factor: Policymaking for Achieving Sustainable Development Goals." *Gondwana Research*, April. https://doi.org/10.1016/J.GR.2023.04.009.

Debrun, Xavier, Klaus Masuch, Guiseppe Ferrero, Isabel Vansteenkiste, Marien Ferdinandusse, Leopold von Thadden, Sebastian Hauptmeier, et al. 2022. "Monetary-Fiscal Policy Interactions in the Euro Area." ECB Occasional Paper No. 2021/273. https://doi.org/10.2866/068527.

Dreher, Axel. 2006. “Does Globalization Affect Growth? Evidence from a New Index of Globalization.” *Applied Economics* 38 (10): 1091–1110. https://doi.org/10.1080/00036840500392078.
Eagleton, Catherine. 2021. “How and Why Did the Rupee Become the Currency of Zanzibar and East Africa?” In *Monetary Transition,* edited by Karin Pallaver, 211–37. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-83461-6_9.
Eichengreen, Barry, and Marc Flandreau. 2012. “The Federal Reserve, the Bank of England, and the Rise of the Dollar as an International Currency, 1914-1939.” *Open Economies Review* 23 (1): 57–87. https://doi.org/10.1007/S11079-011-9217-1/TABLES/8.
ETH Zürich. 2024. “KOF Globalisation Index.” Swiss Economic Institute. 2024. https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html.
European Commission. 2024. “IMPACT REPORT 2023.” *European Innovation Council,* March. https://doi.org/10.2826/072707.
European Union. 2024. “Euro – History and Purpose .” European Union. February 15, 2024. https://european-union.europa.eu/institutions-law-budget/euro/history-and-purpose_en.
Farrell, Henry, and Abraham L. Newman. 2019. “Weaponized Interdependence: How Global Economic Networks Shape State Coercion.” *International Security* 44 (1): 42–79. https://doi.org/10.1162/ISEC_A_00351.
Frankel, Jeffrey. 2012. “Internationalization of the RMB and Historical Precedents .” *Journal of Economic Integration* 27 (3): 329–65.
Fratzscher, Marcel, and Arnaud Mehl. 2014. “China’s Dominance Hypothesis and The Emergence of a Tri-Polar Global Currency System.” *The Economic Journal* 124 (581): 1343–70.
Genberg, Hans. 2009. “Currency Internationalisation: Analytical and Policy Issues.” *Institute for Monetary and Financial Research & Bank of International Settlement, Working Paper No. 31/2009,* October. https://doi.org/10.2139/SSRN.1628004.
Gilks, Anne, and Gerald Segal. 2023. *China and the Arms Trade*. Taylor & Francis.
Glawe, Linda, and Helmut Wagner. 2020. “China in the Middle-Income Trap?” *China Economic Review* 60 (April): 101264. https://doi.org/10.1016/J.CHIECO.2019.01.003.
Goel, Rajeev K., and Ummad Mazhar. 2023. “Are the Informal Economy and Cryptocurrency Substitutes or Complements?” *Applied Economics*, March. https://doi.org/10.1080/00036846.2023.2187039.
Goldberg, Linda S., and Robert Lerman. 2019. “The U.S. Dollar’s Global Roles: Where Do Things Stand? .” *Liberty Street Economics*. https://libertystreeteconomics.newyorkfed.org/2019/02/the-us-dollars-global-roles-where-do-things-stand/.
Gordon, David F, Haoyu Tong, and Tabatha Anderson. 2020. “Beyond the Myths - Towards a Realistic Assessment of China’s Belt and Road Initiative: The Security Dimension The International Institute for Strategic Studies.”
Green, Jeremy, and Julian Gruin. 2020. “RMB Transnationalization and the Infrastructural Power of International Financial Centres.” *Review of International Political Economy* 28 (4): 1028–54. https://doi.org/10.1080/09692290.2020.1748682.
Grigoriev, Vladimir. 2019. “The Future of the Global Monetary System.” *Advances in Economics, Business and Management Research* 87 (July): 333–39. https://doi.org/10.2991/ICMESD-19.2019.49.
Guzzini, S. 2015. “Benjamin Cohen on Global Political Order: When Keynes Meets Realism-and Beyond.” *Contexto Internaciona* 37: 851–87.
Gygli, Savina, Florian Haelg, Niklas Potrafke, and Jan Egbert Sturm. 2019a. “The KOF Globalisation Index – Revisited.” *Review of International Organizations* 14 (3): 543–74. https://doi.org/10.1007/S11558-019-09344-2/TABLES/7.

Gygli, Savina, Florian Haelg, Niklas Potrafke, and Jan-Egbert Sturm. 2019b. “The KOF Globalisation Index – Revisited.” *The Review of International Organizations*, 543–74. https://doi.org/10.1007/s11558-019-09344-2.

Hartmann, Philipp, and Frank Smets. 2018. “The European Central Bank’s Monetary Policy during Its First 20 Years.” *Brookings Papers on Economic Activity* 2018 (2): 1–146. https://doi.org/10.1353/eca.2018.0026.

Hayley, Andrew. 2023. “Russia, China Seal Economic Pacts amid Western Criticism.” Reuters. May 24, 2023. https://www.reuters.com/world/russia-china-set-ink-bilateral-pacts-despite-western-criticism-2023-05-24/.

Helleiner, Eric. 2008. “Political Determinants of International Currencies: What Future for the US Dollar?” *Review of International Political Economy* 15 (3): 354–78. https://doi.org/10.1080/09692290801928731.

Hennecke, Peter. 2021. “The ECB’s New Monetary Policy Strategy.” *Intereconomics* 56 (5): 295–98. https://doi.org/10.1007/s10272-021-1002-9.

Ingham, Geoffrey. 2020. *Money: Ideology, History, Politics*. Polity Press.

International Monetary Fund. 2024. “IMF Data.” IMF Data. 2024. https://data.imf.org/regular.aspx?key=61726507.

Jackson, Matthew O., and Stephen Nei. 2015. “Networks of Military Alliances, Wars, and International Trade.” *Proceedings of the National Academy of Sciences* 112 (50): 15277–84. https://doi.org/10.1073/pnas.1520970112.

Jenkins, Rhys. 2022. *How China Is Reshaping the Global Economy: Development Impacts in Africa and Latin America*. Edited by Rhys Jenkins. 1st ed. Vol. 1. Oxford: Oxford University Press.

Jiang, Lingduo, Shuangshuang Liu, and Guofeng Zhang. 2023. “The Effect of Bilateral Currency Swap Agreements on Foreign Capital Inflows: Evidence from China.” *Southern Economic Journal* 90 (2): 444–73. https://doi.org/10.1002/soej.12652.

Kahn, Herman. 2019. *World Economic Development: 1979 And Beyond*. London & New York: Routledge.

Kastner, Scott L., Margaret M. Pearson, and Chad Rector. 2020. “China and Global Governance: Opportunistic Multilateralism.” *Global Policy* 11 (1): 164–69. https://doi.org/10.1111/1758-5899.12772.

Kenen, Peter B. 2009. “Currency Internationalisation: An Overview.” *Bank of International Settlement*.

Kirshner, Jonathan. 2003. “Money Is Politics.” *Review of International Political Economy* 10 (4): 645–60. https://doi.org/10.1080/0969229031000160191l.

———. 2014. “Same as It Ever Was? Continuity and Change in the International Monetary System.” *Review of International Political Economy* 21 (5): 1007–16. https://doi.org/10.1080/09692290.2014.946435.

Kleczka, Mitja, Caroline Buts, and Marc Jegers. 2020. “Addressing the ‘Headwinds’ Faced by the European Arms Industry.” *Defense & Security Analysis* 36 (2): 129–60. https://doi.org/10.1080/14751798.2020.1750178.

Klooster, Jens van‘t. 2023. “Monetary Sovereignty: The Euro and Strategic Internationalization.” In *Treading Softly: How Central Banks Are Addressing Current Global Challenges*, 148–64. Frankfurt: European Central Bank. https://doi.org/10.1111/jcms.13406.

Kotarski, Kristijan, and Alexander C. Tan. 2019. “Measuring Currency Power from 2005 to 2018: Greenback Still Unrivaled or Increasingly Constrained by Its Rivals?” *Politicka Misao* 56 (3–4): 241–68. https://doi.org/10.20901/PM.56.3-4.11.

Krasner, Stephen D. 1976. “State Power and the Structure of International Trade.” *World Politics* 28 (3): 317–47. https://doi.org/10.2307/2009974.

Lake, David A., Lisa L. Martin, and Thomas Risse. 2021. “Challenges to the Liberal Order: Reflections on International Organization.” *International Organization* 75 (2): 225–57. https://doi.org/10.1017/S0020818320000636.

Lee, Keun. 2021. “Possibility of a Middle-Income Trap in China.” In *China’s Technological Leapfrogging and Economic Catch-Up*, 195–217. Oxford University PressOxford. https://doi.org/10.1093/oso/9780192847560.003.0009.

Leshchenko, Kateryna. 2023. “Current Trends in the Military-Industrial Integration of the EU Countries and Implications for Ukraine.” *Foreign Affairs* 33 (4): 8–21. https://doi.org/10.46493/2663-2675.33(4).2023.8-21.

Li, M M, F M Qin, and Z Y Zhang. 2017. “Modelling RMB Internationalization and Impact on Capital Flow.” *22nd International Contress on Modelling and Sumulation*. Tasmania, Australia.

Lim, Ewe-Ghee. 2006. “The Euro’s Challenge to the Dollar: Different Views from Economists and Evidence from COFER (Currency Composition of Foreign Exchange Reserves) and Other Data.” WP/06/153. Washington DC.

Liu, Zongyuan Zoe, and Mihaela Papa. 2022. “Can BRICS De-Dollarize the Global Financial System?” *Elements in the Economics of Emerging Markets*, March. https://doi.org/10.1017/9781009029544.

Maletta, Giovanna, and Lauriane Héau. 2022. “Funding Arms Transfers through the European Peace Facility: Preventing Risks of Diversion and Misuse.” Stockholm. https://doi.org/10.55163/OELZ9733.

Masciandaro, Donato. 2023. “Flexible Monetary Policy Rules from the Great Moderation to the New Normal Times (1993–2023): A Forward-Looking Review.” In *Monetary Policy Normalization*, edited by Paolo Savona Savona and Rainer Stefano Masera, 61–81. Springer Cham.

Mazzucato, Mariana. 2015. *The Entrepreneurial State: Debunking Public VS Private Sector Myths*. 2nd ed. Anthem Press.

McDowell, Daniel. 2019. “The (Ineffective) Financial Statecraft of China’s Bilateral Swap Agreements.” *Development and Change* 50 (1): 122–43. https://doi.org/10.1111/dech.12474.

Menger, Carl. 1871. *PRINCIPLES OF ECONOMICS*. Vienna.

Monnet, Eric. 2023. “The Power of Coordination and Deliberation.” *Accounting, Economics, and Law: A Convivium* 0 (0). https://doi.org/10.1515/AEL-2022-0114.

Mosley, L. 2003. *Global Capital and National Governments*. Cambridge University Press.

Mudge, Stephanie L., and Antoine Vauchez. 2022. “Dependence on Independence: Central Bank Lawyers and the (Un)Making of the European Economy.” *Economy and Society* 51 (4): 584–609. https://doi.org/10.1080/03085147.2022.2121068.

Murau, Steffen, and Jens van’t Klooster. 2022. “Rethinking Monetary Sovereignty: The Global Credit Money System and the State.” *Perspectives on Politics*, August, 1–18. https://doi.org/10.1017/S153759272200127X.

Murau, Steffen, Fabian Pape, and Tobias Pforr. 2022. “International Monetary Hierarchy through Emergency US-Dollar Liquidity: A Key Currency Approach.” *Competition and Change*, August. https://doi.org/10.1177/10245294221118661/ASSET/IMAGES/LARGE/10.1177_10245294221118661-FIG3.JPEG.

Murau, Steffen, Joe Rini, and Armin Haas. 2020. “The Evolution of the Offshore US-Dollar System: Past, Present and Four Possible Futures.” *Journal of Institutional Economics* 16 (6): 767–83. https://doi.org/10.1017/S1744137420000168.

Nascimento, Lucas Gualberto do. 2020. “The Beijing Consensus and the New Silk Road in Africa: Chinese Investments in New Disputes of Hegemony.” *Conjuntura Internacional* 17 (1): 27–38. https://doi.org/10.5752/P.1809-6182.2020V17N1P27-38.

Norrlof, Carla. 2014. “Dollar Hegemony: A Power Analysis.” *Review of International Political Economy* 21 (5): 1042–70. https://doi.org/10.1080/09692290.2014.895773.
Norrlof, Carla, Paul Poast, Benjamin J. Cohen, Sabreena Croteau, Aashna Khanna, Daniel McDowell, Hongying Wang, and W. Kindred Winecoff. 2020. “Global Monetary Order and the Liberal Order Debate.” *International Studies Perspectives* 21 (2): 109–53. https://doi.org/10.1093/ISP/EKAA001.
Orsi, Bianca, Annina Kaltenbrunner, and Gary Dymski. 2020. “Currency Hierarchy and the Nature of the Internationalisation of Peripheral Currencies.” *Mimeo*.
Pattnaik, Chinmay, and B. Elango. 2009. “The Impact of Firm Resources on the Internationalization and Performance Relationship: A Study of Indian Manufacturing Firms.” *Multinational Business Review* 17 (2): 69–88. https://doi.org/10.1108/1525383X200900010/FULL/PDF.
Paula, Luiz Fernando De, Barbara Fritz, and Daniela M. Prates. 2017. “Keynes at the Periphery: Currency Hierarchy and Challenges for Economic Policy in Emerging Economies.” *Journal of Post Keynesian Economics* 40 (2): 183–202. https://doi.org/10.1080/01603477.2016.1252267.
Pettis, Michael. 2022. “Changing the Top Global Currency Means Changing the Patterns of Global Trade.” *Carnegie Endowment for International Peace*, 2022. https://carnegieendowment.org/chinafinancialmarkets/86878.
Portes, Richard, and Hélène Rey. 2014. “The Emergence of the Euro as an International Currency.” *Economic Policy* 13 (26): 306–43. https://doi.org/10.1111/1468-0327.00034.
Pozsar, Zoltan. 2022. “Zoltan Pozsar: We Are Witnessing the Birth of a New World Monetary Order.” *Credit-Suisse*, March 21, 2022. https://www.credit-suisse.com/about-us-news/en/articles/news-and-expertise/we-are-witnessing-the-birth-of-a-new-world-monetary-order-202203.html.
Prates, Daniela. 2020. “Beyond Modern Money Theory: A Post-Keynesian Approach to the Currency Hierarchy, Monetary Sovereignty, and Policy Space.” *Review of Keynesian Economics* 8 (4): 494–511. https://doi.org/10.4337/ROKE.2020.04.03.
Raska, Michael, and Richard A Bitzinger. 2020. “Strategic Contours of China’s Arms Transfers.” *Strategic Studies Quarterly* 14 (1): 91–116. https://doi.org/10.2307/26891885.
Reiss, Daniel Gersten. 2015. “The Currency’s Internationality: Concept Advances for Understanding Currencies Beyond Borders.” *SSRN Electronic Journal*, October. https://doi.org/10.2139/SSRN.2642460.
Reshetnikova, Marina S., and Sergey S. Shvets. 2023. “China’s Arms Trade: Trends and Challenges.” *RUDN Journal of Economics* 31 (2): 370–78. https://doi.org/10.22363/2313-2329-2023-31-2-370-378.
Romelli, Davide. 2022. “The Political Economy of Reforms in Central Bank Design: Evidence from a New Dataset.” *Economic Policy* 37 (112): 641–88. https://doi.org/10.1093/EPOLIC/EIAC011.
———. 2024. “Trends in Central Bank Independence: A De-Jure Perspective.” *SSRN Electronic Journal*, February. https://doi.org/10.2139/SSRN.4716704.
Ryan, John. 2014. “China and the Emergence of a Multipolar Currency Regime.” *Journal of Political Science* 4 (1): 61–67.
Sadiq, Muhammad, Riazullah Shinwari, Fenghua Wen, Muhammad Usman, Syed Tauseef Hassan, and Farhad Taghizadeh-Hesary. 2023. “Do Globalization and Nuclear Energy Intensify the Environmental Costs in Top Nuclear Energy-Consuming Countries?” *Progress in Nuclear Energy* 156 (February): 104533. https://doi.org/10.1016/J.PNUCENE.2022.104533.
Shu, Chang, Dong He, and Xiaoqiang Cheng. 2015. “One Currency, Two Markets: The Renminbi’s Growing Influence in Asia-Pacific.” *China Economic Review* 33 (April): 163–78. https://doi.org/10.1016/J.CHIECO.2015.01.013.

Siddiqui, Kalim. 2020. “The U.S. Dollar and the World Economy: A Critical Review.” *Athens Journal of Business & Economics* 6: 1–21. https://doi.org/10.30958/ajbe.6-1-2.
SIPRI. 2024. “Importer/Exporter TIV Tables.” Stockholm International Peace Research Institute. 2024. https://armstrade.sipri.org/armstrade/page/values.php.
SIRPI. 2024. “SIPRI Military Expenditure Database.” Stockholm International Peace Research Institute. 2024. https://milex.sipri.org/sipri.
Strange, Susan. 1971. “The Politics of International Currencies.” *World Politics* 23 (2): 215–31.
Tatay, Tibor, and Eszter Kazinczy. 2023. “Euro Area Economic Growth between 2010 and 2019 in the Light of Secular Stagnation Theory.” *Public Finance Quarterly* 69 (3). https://doi.org/10.35551/PFQ_2023_3_4.
Tavlas, George S., and Yuzuru Ozeki. 1992. “The Internationalization of Currencies: An Appraisal of the Japanese Yen.” No. 90. Washington DC.
Thiele, Alexander. 2018. “The Independence of the ECB: Justification, Limitations and Possible Threats.” *Journal of Self-Governance and Management Economics* 6 (1): 98. https://doi.org/10.22381/JSME6120184.
Wallerstein, Immanuel. 1974a. *The Modern World System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. *The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century, With a New Prologue*. New York: Academic Press.
———. 1974b. “The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis.” *Comparative Studies in Society and History* 16 (4): 387–415. https://doi.org/10.1017/S0010417500007520.
Walter, Andrew. 2006. “Domestic Sources of International Monetary Leadership.” In *International Monetary Power*, edited by David M. Andrews. Ithica: Cornell University Press.
Waltz, Kenneth N. 1979. *Theory of International Politics*.
Wang, Jue. 2018. “China-IMF Collaboration: Toward the Leadership in Global Monetary Governance.” *Chinese Political Science Review* 3 (1): 62–80. https://doi.org/10.1007/S41111-017-0085-8/METRICS.
Wang, Pingping, Xun Wang, Zhuo Huang, and Baoqun Fan. 2021. “Overcoming the Middle-Income Trap: International Experiences and China’s Choice.” *China Economic Journal* 14 (3): 336–49. https://doi.org/10.1080/17538963.2021.1965788.
Wezeman, Pieter D., Justine Gadon, and Siemon T. Wezeman. 2023. “Trends in International Arms Transfers, 2022.” Stockholm. https://doi.org/10.55163/CPNS8443.
World Bank. 2024a. “Current Account Balance (BoP, Current US$) | Data.” World Bank DataBank. 2024. https://data.worldbank.org/indicator/BN.CAB.XOKA.CD.
———. 2024b. “GDP (Current US$) | Data.” World Bank DataBank. 2024. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=EU.
———. 2024c. “International Debt Statistics | DataBank.” World Bank Databank. February 19, 2024. https://databank.worldbank.org/source/international-debt-statistics.
Yergin, Daniel. 1991. *The Prize: The Epic Quest for Oil, Money, and Power*. New York: Simon & Schuster.
Zeman, Mário. 2022. “Avoiding Middle-Income Trap: Case of China.” In *EDAMBA 2021: COVID-19 Recovery: The Need for Speed : Conference Proceedings*, 571–81. University of Economics in Bratislava. https://doi.org/10.53465/EDAMBA.2021.9788022549301.571-581.

Appendix

Coding for R

```
install.packages("dplyr")
install.packages("readxl")
install.packages("tidyverse")
install.packages("ggplot2")
install.packages("tidyr")
install.packages("glmnet")
install.packages("broom")
library(dplyr)
library(readxl)
library(tidyverse)
library(ggplot2)
library(tidyr)
library(glmnet)
library(broom)


file_patMatrixfile_path <- "/Users/mikkelkraghsager/Desktop/Numerical Thesis,
Reversed.xlsx"
data <- read_excel(file_path)

data_usa <- subset(data, Country == "USA")
data_china <- subset(data, Country == "China")
data_eu <- subset(data, Country == "EU")
names(data)
formula_all <- CurrencyInternationalization ~ PoliticalGlobalization + CBI +
InternationalDebtDenominated + TradeVolume + GDPRatioWorld + CurrentAccount +
ArmsTransfer + MilitarySpending


model_all <- lm(formula_all, data = data)

summary(model_all)

par(mfrow = c(2, 2))
plot(model_all)




ggplot(data = data, aes(x = Year, y = `CurrencyInternationalization`, color = Country)) +
  geom_line() +
  scale_y_continuous(name = "CI Index") +
```

```
  scale_x_continuous(breaks = seq(min(data$Year), max(data$Year), by = 1)) +
  theme_minimal() +
  labs(title = "CI by Country",
       x = "Year",
       y = "CI Index",
       color = "Country") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))




formula_country <- CurrencyInternationalization ~ CBI + InternationalDebtDenominated +
GDPRatioWorld + ArmsTransfer

model_USA <- lm(formula_country, data = data_usa)

model_China <- lm(formula_country, data = data_china)

model_EU <- lm(formula_country, data = data_eu)


summary(model_USA)

ggplot(data = data_usa, aes(x = Year, y = `CBI`, color = Country)) +
  geom_line() +
  scale_y_continuous(name = "Central Bank Independence") +
  scale_x_continuous(breaks = seq(min(data$Year), max(data$Year), by = 1)) +
  theme_minimal() +
  labs(title = "US Central Bank Independence",
       x = "Year",
       y = "Central Bank Independence",
       color = "Country") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

summary(model_EU)

ggplot(data = data_eu, aes(x = Year, y = `CBI`, color = Country)) +
  geom_line() +
  scale_y_continuous(name = "Central Bank Independence") +
  scale_x_continuous(breaks = seq(min(data$Year), max(data$Year), by = 1)) +
  theme_minimal() +
  labs(title = "EU Central Bank Independence",
       x = "Year",
       y = "Central Bank Independence",
       color = "Country") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

summary(model_China)
```