

STATE STREET®

De-Dollarization

Is US Dollar Dominance Dented?

June 2023

By Ramu Thiagarajan, Richard F Lacaille,
Aaron Hurd, Michael Metcalfe and Hanbin Im



Is Dollar Dominance Dented?

Whether we are helping investment companies operate more effectively, providing valuable market insights, launching innovative investment products or acting sustainably, we are focused on cultivating collaborative partnerships.

As one of the world's largest servicers and managers of institutional assets, our success depends upon the success of our stakeholders — our clients, employees, investors and the communities we serve. Our goal is to help these stakeholders realize the best possible outcomes for the future.

For more information, visit statestreet.com.

Executive Summary

Concerns about de-dollarization — the loss of the US dollar’s role as the world’s hegemonic currency — have re-emerged recently due to a series of developments following the onset of Russia’s war against Ukraine. These developments range from the growing weaponization of the US dollar (USD or dollar), the continued decline in USD reserves, the growth in bilateral trade relationships denominated in non-dollar currencies, and the emergence of alternatives to the US-dominated international payments system, the Society for Worldwide Interbank Financial Telecommunications (SWIFT). We evaluate alternatives to replace the USD and find that no other currencies possess the required attributes of a dominant currency. The euro and the Chinese renminbi (RMB) are the closest to satisfying the requirements of a dominant currency, but not nearly close enough to threaten the dollar’s hegemonic status. We show that the alternative of a multipolar arrangement without a dominant currency would be costly and unlikely to survive as a stable equilibrium. Thus, we conclude that the hegemonic role of the USD is likely to remain intact into the foreseeable future. That said, we recognize that the powerful geopolitical and economic forces at play today will continue to pose ongoing challenges to the dominance of the dollar and that this story is far from over. We should remain vigilant in monitoring developments and be careful not to overlook future stresses or to take the hegemonic status of the USD for granted.

Contents

Introduction	5
Section 1 Current Concerns About The Dominant Status of the Dollar	7
Section 2 Criteria for Currency Dominance and Its Role in Global Finance	9
Section 3 Is the Euro Likely to Become a Dominant Currency?	14
Section 4 Is the Renminbi Likely to Become a Dominant Currency?	16
Section 5 Balance of Payments and Dollar Hegemony	18
Section 6 Merits of Dollar Dominance Over a Multipolar Currency Regime	20
Conclusion	23

Introduction

Starting with the Bretton Woods Agreement in 1944, the dollar has been the dominant currency in international trade and finance for nearly 75 years.

There are **three** principal ways by which this dominance manifests itself:



1

Invoicing and international trade



2

Financing and access to capital markets



3

Reserve accumulation by central banks

The dollar's dominance has been the key engine for financial globalization. However, as outlined by Carney (2019), this dominance has its costs, the primary one being spillover of USD shocks to other economies and markets. This raises the concern that the global financial cycle and the USD cycle are effectively synonymous, leading to negative externalities.

While the ills of spillover risks from the traditional hegemonic role of the USD were widely discussed after the Great Financial Crisis (GFC), the topic largely went into hibernation until recently. The topic of de-dollarization reemerged in recent political discussions given that the hegemonic status of the USD enabled the weaponization of the currency as a means to impose sanctions against Russia following its invasion of Ukraine. The persistence of the war and the rising conflict with China, however, have spurred attempts by different economies to shift away from dollar dependence. According to the research group GlobalData, discussion on social media regarding de-dollarization rose more than 600 percent in the first quarter of 2023 compared to the last quarter of 2022.¹

Concrete attempts to move away from the dollar appear to have gained momentum recently. For example, this past April, Argentina officially began paying for Chinese imports in yuan rather than dollars.² That same month, India and Malaysia entered into agreements to settle trades in Indian rupee in addition to other currencies.³ In March, Brazil reached a similar agreement with China to settle trades in their own currencies rather than the dollar.⁴ In May, Brazil and Argentina announced plans to continue working on the development of a financing mechanism allowing them to avoid using the dollar in their bilateral trades.⁵ Also in May, South Korea and Indonesia signed a memorandum of understanding to promote bilateral trade in their local currencies.⁶ The BRICS group of nations — Brazil, Russia, India, China, and South Africa — is discussing the potential introduction of a common currency among them.⁷ And dollar credit to non-banks in emerging market and developing economies showed a large contraction recently according to the Bank for International Settlements (BIS).⁸

These developments contrast with the results of the Triennial Central Bank Survey conducted by BIS, which show that even while the dollar has recently lost some market share, the greenback remains the dominant currency for foreign exchange and over-the-counter derivatives markets.⁹ Thus, the dollar's dominance seems intact. As Larry Summers quipped, "Where are they going to move?"¹⁰

Is the dominance of the dollar threatened? Or is the reemergence of discussions on de-dollarization merely a topic that resurface periodically when geopolitical conflicts involving the US and other large economies dominate the airwaves? We explore these questions in this article. Our primary conclusion is that the dollar's dominance and the fundamental forces that have enabled it are unlikely to abate anytime soon. We believe, however, that geopolitical forces in countries with large current account surpluses may embark on a process of de-dollarization that could gain momentum and dent dollar dominance with attendant effects on the US Treasury market. These forces merit careful monitoring in the wake of geopolitical challenges and recent initiatives such as "friend-shoring" that could accelerate de-dollarization efforts.

Section 1

Current Concerns About the Dominant Status of the Dollar



The concern for de-dollarization has re-emerged recently due to a series of developments following the onset of Russia's war against Ukraine, such as bilateral trade relationships denominated in the currencies other than the dollar and competing payment systems to SWIFT.

First, several bilateral trade relationships that do not involve the dollar have formed recently. Russia and China were already moving away from using the dollar in bilateral trade since the onset of the US-China trade war in 2018.¹¹ In 2013, 80 percent of Russia's total exports were denominated in the dollar; in 2020, however, only slightly more than half of its total exports were settled in the dollar. India and Tanzania also have signed an agreement to settle trades in their own currencies.¹² As noted earlier, trade between India and Malaysia can now be settled in Indian rupee; and China and Brazil have reached a deal to trade in local currencies after entering a preliminary agreement this January. Additionally, it has been reported that Saudi and Chinese officials are considering pricing some oil sales in yuan.¹³

Russia's central bank announced that Russia's alternative to the SWIFT system – the System for Transfer of Financial Messages (SPFS) – has grown significantly in 2022 following Western

sanctions on many Russian banks.¹⁴ The fact that a payment system alternative to SWIFT exists in Russia and China, two countries that are most active in de-dollarization efforts, amplifies concerns around the dollar being displaced as the dominant currency. It also has been reported that Moscow is working with Beijing to connect the SPFS to China's Cross-Border Interbank Payment System (CIPS) to work around the SWIFT ban.¹⁵

The confluence of these recent developments raises the concern that discussions on de-dollarization this time around might actually prove different from previous episodes. We explore whether the dollar's traditionally hegemonic role has declined significantly in the next section.

The confluence of these recent developments raises the concern that discussions on de-dollarization this time around might actually prove different from previous episodes.

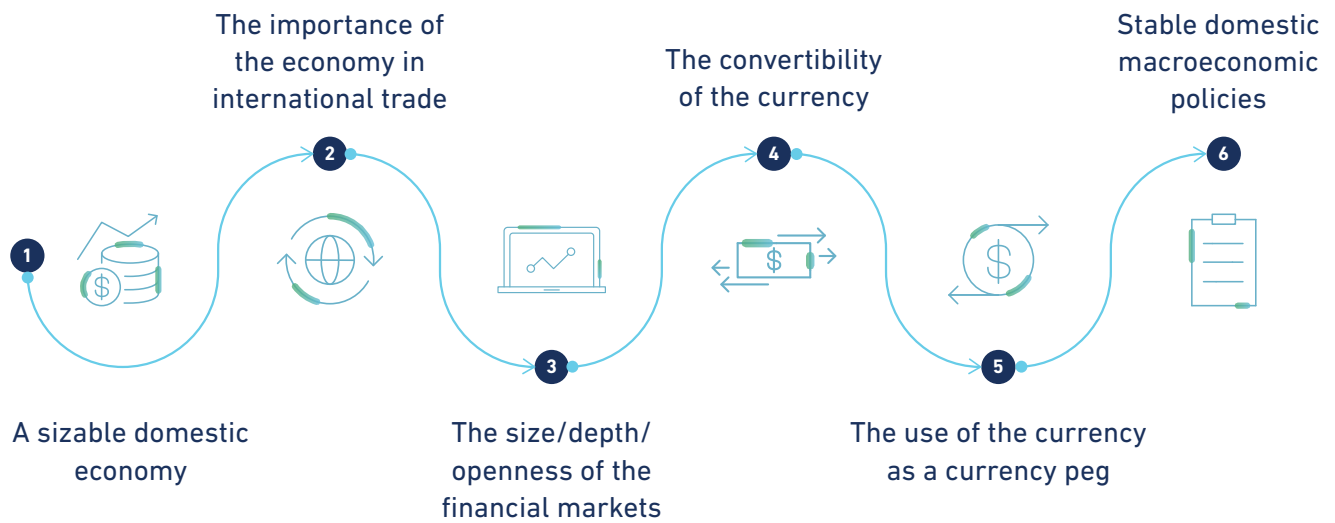
Section 2

Criteria for Currency Dominance and its Role in Global Finance



Research has shown currencies become dominant in international trade when the canons of convertibility, liquidity, and depth of foreign exchange (FX) and bond markets— and, importantly, stable monetary policies and rule of laws—are met.¹⁶

The US Department of Treasury (2009) lists the following criteria for a currency to gain finance and trade dominance:



As noted earlier, a dominant currency that meets the above criteria exhibits its strength via: (1) invoicing and international trade; (2) financing and access to capital markets; and (3) reserve accumulation by central banks.

In this section, we assess whether the dollar is indeed at risk of losing its hegemonic role based on an analysis of these three attributes of currency dominance.

Trade invoicing

The invoicing currency data used in Boz et al. (2020) combined with global trade shares data from UNCTAD shows in Exhibit 1 that the share of global exports and imports invoiced in the dollar is much larger (approximately 48 percent for exports and 52 percent for imports, respectively) than the share of

exports and imports to and from the US during the period from 2008 to 2019 (approximately 12 percent and 18 percent, respectively), demonstrating the dominant role the USD plays in global trade invoicing.¹⁷ Most notably, according to Boz et al. (2020), the share of the dollar in invoicing in general has varied little over history across different regions.¹⁸

Exhibit 1: Share of Trade Invoicing and Exports / Imports: 2008 - 2019



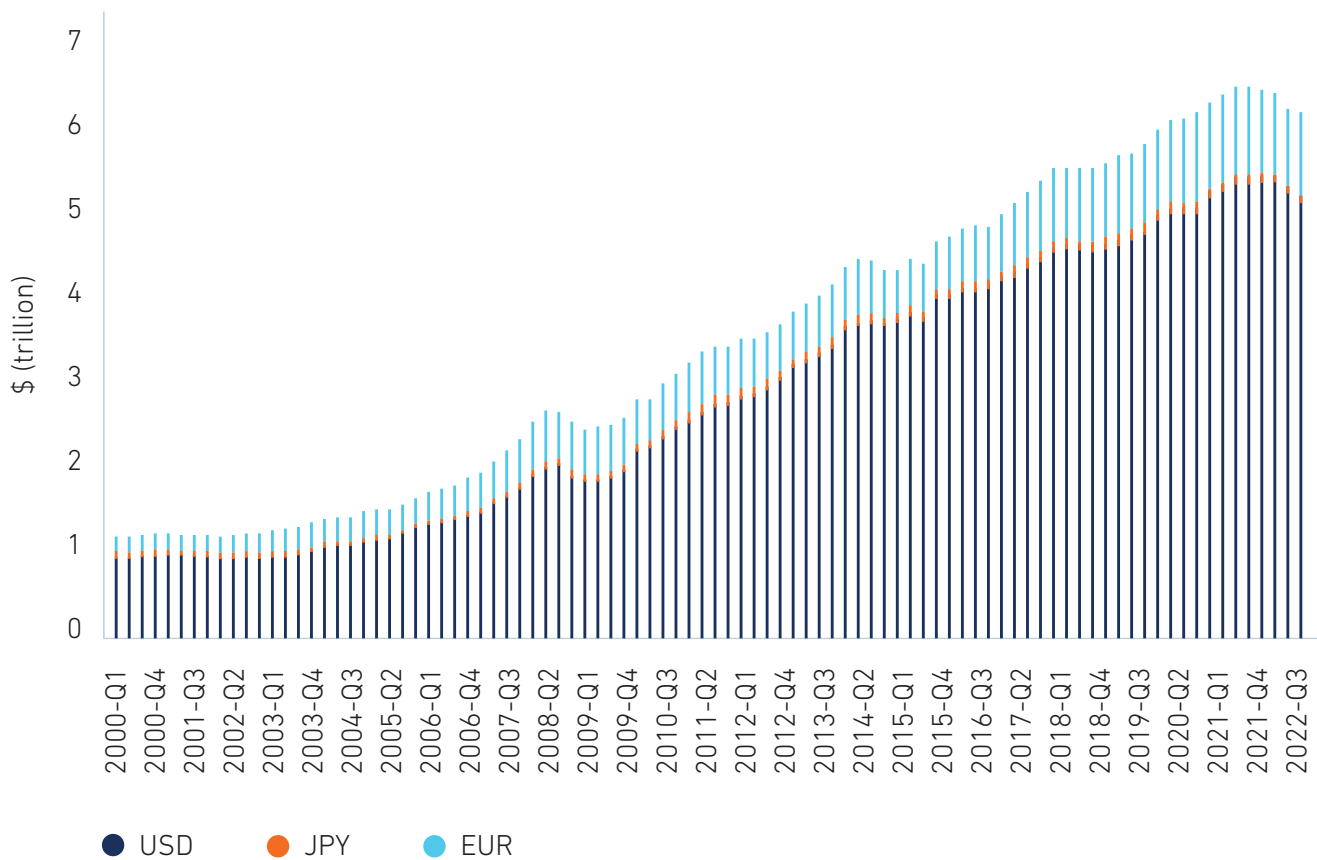
Source: Boz et al. (2020), "Patterns in Invoicing Currency in Global Trade," IMF Working Paper 20/126; UNCTAD

Cross-border financing

Cross-border financing also exhibits continuing strong dollar dominance, albeit a bit less encouraging than prior years. The latest BIS data shows that dollar credit to non-banks in emerging market and developing economies (EMDE) shrank by 4 percent in the fourth quarter of 2022, a rate last observed during the GFC. Such a decrease, however, is largely driven by

the increasing funding costs for the dollar due to a historically rapid pace of US monetary policy tightening. Funding costs, in addition to depth of markets, drive cross-border financing. In fact, Japanese yen credit grew substantially in the fourth quarter of 2022 due to the relatively cheaper cost of funding. This trend is similar in both BRICS and non-BRICS countries in the EMDE group as well as in advanced countries.

Exhibit 2: Credit to non-banks in emerging market and developing economies by currency



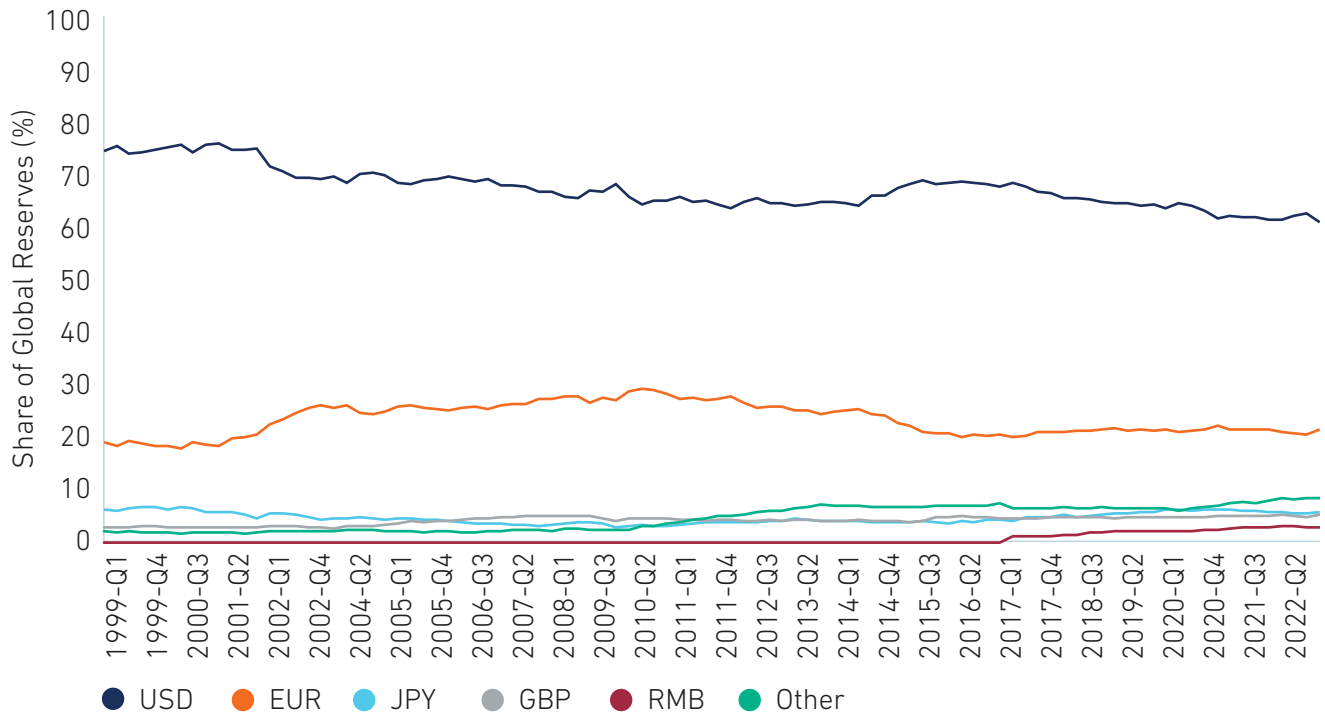
Source: BIS, Refinitiv Datastream

Central bank reserve

Of the three ways in which currency dominance is demonstrated, the weakening role of USD as a reserve currency appears to be garnering the most attention. As represented in Exhibit 3, Currency Composition of Official Foreign Exchange Reserves (COFER) data released by the International Monetary Fund (IMF) shows that 58 percent of global central bank reserves were held in the USD in the fourth quarter of 2022 compared to 72 percent in 2001. This reflects both active movements in allocations out of the

dollar, as well as the impact of exchange rate movements over the same time period. Part of the decline, as noted in Thiagarajan, Hurd, and Hentov (2022), is due to the increasing liquidity in many currencies outside the Big Four (USD, British sterling pound, Japanese yen, and euro) and a growing push by reserve currency managers towards active reserve management. The recent rapid decline in USD reserves, combined with mounting efforts towards de-dollarization in other parts of the world (such as BRICS common currency as mentioned above), warrants continued monitoring.

Exhibit 3: Share of Global Reserves by Currency



Source: International Monetary Fund

Our evaluation of the three measures for currency dominance suggests that the USD still maintains its dominant status as a global

currency and is likely to retain that role in the near future.¹⁹ We next evaluate whether the euro or the RMB could obtain hegemonic status.

Section 3

Is the Euro Likely to Become a Dominant Currency?



When it comes to debating potential alternatives to the dollar as a dominant currency, the euro and the RMB are generally considered the two leading contenders. Returning to the criteria of dominant currencies, the euro, indeed, exhibits many of the requisite characteristics.

The size of euro area economy is large; the euro enjoys a large share of international trade invoicing; the euro is easily convertible to other currencies; and the euro area is a major player in international trade and also has stable domestic macroeconomic policies. Given the return of positive policy rates and the gradual unwinding of European Central Bank (ECB) government bond holdings, the euro is likely to recapture a portion of the near 8 percent decline in its share of global reserves between 2009-2015.

However, the euro lacks the depth and liquidity of the US financial markets including a common sovereign bond market, which makes the euro unlikely to become as dominant as the dollar. In addition, from a political diversification perspective, the European Union's frequent political alignment with the US – as demonstrated by the EU joining the US in implementing heavy sanctions against Russia – means that switching to the euro will not diversify political risks for countries aligned to Russia and China.

Section 4

Is the Renminbi Likely to Become a Dominant Currency?



Compared to the euro, the RMB faces more significant hurdles to overcome before it could potentially displace the USD as a dominant currency.

While the Chinese economy is the second largest in the world, and China is the top international trading partner for many countries, the renminbi's share in trade invoicing is relatively small.²⁰ China lacks openness of its capital market, its economy is tightly controlled, and the renminbi is not easily convertible into non-Chinese assets. Thus, for the renminbi to potentially acquire a hegemonic role, capital controls first need to be relaxed or removed, and the renminbi needs to be used more commonly in trade invoicing outside mere bilateral trade between China and other countries. As noted in Eichengreen et al. (2022), without full capital account liberalization, such changes will naturally require the backing from USD reserves. Thus, in the absence of capital account liberalization, the People's Bank of China will continue to hold and use USD reserves, thereby naturally limiting the extent of renminbi internalization.



Section 5

Balance of Payments and Dollar Hegemony



The hegemonic status of a currency essentially implies the robust use of the currency in trade invoicing as well as in credit markets, both of which create claims in that currency. These claims come from liabilities specified in the currency, which effectively makes such a country a debtor economy with a deficit status from the capital side.

Satisfying these liabilities, in turn, requires a liquid and robust fixed income market. Thus, in the absence of a highly liquid and deep fixed income market, it is impossible for a different hegemonic currency to emerge. As noted above, neither Europe nor China has a fixed income market as robust as that of the US, making them unlikely candidates for an alternative dominant currency.

Currently, the growing calls and related actions for a move away from the dollar as a dominant currency is primarily originating from countries like China and Russia, both of which have a large current account surplus. As noted by Brad Setser at the Council on Foreign Relations, the countries with the loudest voice against the hegemonic role of the dollar simply

cannot avoid trading with the US and its allies.²¹ In theory, they can trade with other countries with large current account surpluses such as Norway and Switzerland, but the extent of such bilateral trade would be limited and cannot address the trade needs of global commerce. China and other countries that are running current account surpluses might start trading with each other or with non-US trade deficit countries in order to move away from the dollar hegemony that has essentially funded their surpluses.²² The joint probability of this happening on a broad scale, however, is pretty low. Even if this were to occur, the ability of such bilateral agreements to satisfy the growing needs of global commerce would be limited.

Section 6

Merits of Dollar Dominance Over a Multipolar Currency Regime



Up to this point, we have explored the extent of the US dollar's role as the dominant currency and the potential for other currencies to displace the dollar. Another possibility to consider is a multipolar world in which there are multiple, weakly dominant currencies, instead of a single dominant currency.

While current developments may appear to be moving the FX world in that direction, we strongly believe that transitioning to a multipolar world would be costly, particularly during times of liquidity stress, and despite the advantages of diversification away from USD for reserve managers.

The so-called "exorbitant privilege"²³ of the hegemonic currency draws significant attention. For example, benefits accrue to the hegemon in the form of reduced borrowing costs, greater political clout, and a lower probability of a balance of payments crisis even in the presence of persistent current account deficits. However, global users of the hegemonic currency also enjoy benefits in the form of significant positive network externalities, which include lower financing costs, reduced exposure to currency volatility via natural hedges, and lower currency transaction costs. Moving to a multipolar world would be potentially costly as it would eliminate those benefits.

A highly liquid sovereign and credit market tends to decrease borrowing costs and access to credit for all who wish to borrow in the dominant

currency. The widespread holdings of assets and liabilities and the invoicing of imports and exports in the single dominant currency offer a natural currency hedge, as the foreign exchange rate impact gets netted out. Transacting and/or holding assets in multiple currencies would greatly increase the need and costs of managing the risk resulting from currency mismatches across assets/liabilities and costs/revenues, despite the diversification benefits derived from holding multiple reserve assets. Not only would the complexity and volume of transactions to manage currency risk increase in a multipolar world, but the cost of each of those transactions would likely increase in the absence of a single core, ultra-liquid currency.

For countries with currencies pegged to the USD, the move to a multipolar world would arguably have the most significant impact. Unless alternative currencies have similar level of depth, liquidity, and policy stability as the United States, such countries would experience a much greater increase in borrowing costs due to the increased rise in currency volatility and loss of anchor of the credibility of US monetary policy. Some of the

Is Dollar Dominance Dented?

more developed countries, such as those in the Gulf Cooperation Council, would likely be able to establish monetary policy credibility relatively quickly, but the costs of additional currency volatility, in the interim, would lead to a greater increase in volatility of growth and inflation compared to the increase experienced by non-pegged currencies.

For these reasons, we believe that a world with a single hegemonic currency with a deep and liquid sovereign and credit market is far preferable to the potential dislocation presented by a multipolar regime. Further, as individuals, corporates, and countries seek to reduce currency-related risks and frictions and minimize transaction costs, there would likely be a natural pull away from a multipolar world back toward an equilibrium characterized by a single core dominant currency.

That said, the macro challenges associated with a single hegemonic currency cannot be discounted. An important question to consider is whether global macro risks are likely to be escalated in a world of single hegemonic currency versus a multipolar world. This question is difficult to answer, but an interesting longitudinal study by Vicquery (2022) demonstrates that global crises occur less frequently during time periods of unipolar hegemonic currency. This is the case because the depth and liquidity of the currency and sovereign market enables the USD to manage global crises more effectively compared to a world of multipolar currencies.



Conclusion



The criteria and clearance threshold for other currencies to replace the USD as a hegemonic currency remain high. Moreover, the probability these criteria could be met is low. In addition, a multipolar world appears inefficient. Thus, we believe the hegemonic role of the dollar is likely to remain intact into the foreseeable future. The hegemonic status of the dollar, however, is not pre-ordained.

As the deterioration in share of reserves and the increasing number of bilateral trade relationships outside the dollar emerge, we should be careful not to take the hegemonic status of the dollar for granted. While its complete replacement may not be likely, a “weakened” state of the USD’s hegemony, with both the euro and the renminbi playing an increased role, is feasible if the current trend continues. Therefore, policymakers should remain vigilant when exploiting the hegemonic status of the dollar. Likewise, asset managers and asset owners should continue to monitor

the situation, as the loss of the dollar’s hegemonic status might imply the loss of faith in the currency and, importantly, the US Treasury market, a result which can carry significantly more serious implications. The dollar’s “exorbitant privilege” is not a mandate, but the outcome of economically sensible choices made by market participants over decades and generations. While erosion of this extraordinary privilege would be slow, the geopolitical changes underway in the global macro world today may ultimately weaken the USD’s long-standing privileged position.

Acknowledgements

The authors would like to thank **Andrew Conn** and **Eric Garulay** for productive discussions and comments on earlier versions of the paper.

References

1. Boz, E., Casas, C., Georgiadis G., Gopinath, G., Le Mezo, H., Mehl, A., and T. Nguyen. 2020. "Patterns in Invoicing Currency in Global Trade", IMF Working Paper No. 2020/126.
2. Carney, Mark. 2019. "The Growing Challenges for Monetary Policy in the Current International Monetary and Financial System", Speech at Jackson Hole Symposium, August 23, 2019.
3. DiPippo, G. and A. Palazzi. 2023. "It's All about Networking: The Limits of Renminbi Internalization," Center for Strategic & International Studies.
4. Eichengreen, B., Macaire, C., Mehl, A., Monnet, E., and A. Naef. 2022. "Is Capital Account Convertibility Required for the Renminbi to Acquire Reserve Currency Status?", Banque de France Working Paper #892.
5. Gournichas, P. 2019. "The Dollar Hegemon? Evidence and Implications for Policy Makers".
6. Mecado, R., Jacildo, R., and S.B. Das. 2023. "US Dollar Dominance in Asia's Trade Invoicing", Centre for Applied Macro Economic Analysis Working Paper 5/2023, Australian National University.
7. Thiagarajan, R., Hurd, A., and E. Hentov. 2022. "What Does the Weaponization of Global Finance Mean for US Dollar Dominance?", State Street.
8. U.S. Department of the Treasury. 2009. "Report to Congress on International Economic and Exchange Rate Policies", Office of International Affairs, October 15, 2009.
9. Vicquery, Roger. 2022. "The Rise and Fall of Global Currencies over Two Centuries", Banque de France Working Paper #882.

Endnotes

1. "De-dollarization discussions on Twitter, Reddit surge 600% in Q1 2023, reveals GlobalData." GlobalData. <https://www.globaldata.com/media/business-fundamentals/de-dollarization-discussions-on-twitter-reddit-surge-600-in-q1-2023-reveals-globaldata/>. 3 April 2023.
2. Sharp, Alexandra. "Argentina Turns to Yuan to Save Dwindling Dollars." Foreign Policy. <https://foreignpolicy.com/2023/04/27/argentina-yuan-china-dollar-currency-trade-imports-imf-diplomacy/>. 27 April 2023.
3. Chaudhary, Dipanjan Roy. "India, Malaysia can now trade in Indian rupee." The Economic Times. <https://economictimes.indiatimes.com/news/economy/foreign-trade/india-malaysia-can-now-trade-in-indian-rupee/articleshow/99164812.cms>. 1 April 2023.
4. "China, Brazil Strike Deal To Ditch Dollar For Trade." Barron's. <https://www.barrons.com/news/china-brazil-strike-deal-to-ditch-dollar-for-trade-8ed4e799>. 29 March 2023.
5. Argentina and Brazil to discuss trade agreement to skip dollar." Beuno Aires Herald. <https://buenosairesherald.com/business/argentina-and-brazil-to-discuss-trade-agreement-to-skip-dollar>. 2 May 2023.
6. South Korea, Indonesia central banks agree to promote local currency transactions." Reuters. <https://www.reuters.com/markets/currencies/south-korea-indonesia-cbanks-agree-promote-local-currency-transactions-2023-05-02/>. 2 May 2023.
7. Vecchiato, Paul. "South Africa Urges Careful Debate on Option of Introducing BRICS Common Currency." Bloomberg. <https://www.bloomberg.com/news/articles/2023-05-10/south-africa-urges-careful-debate-on-option-of-introducing-brics-common-currency?> 10 May 2023.
8. "Statistical release: BIS international banking statistics and global liquidity indicators at end-December 2022." BIS. <https://www.bis.org/statistics/rppb2304.html>.
9. "Triennial Central Bank Survey of foreign exchange and Over-the-counter (OTC) derivatives markets in 2022." BIS. <https://www.bis.org/statistics/rpfx22.html>.
10. Anstey, Chris. "Larry Summers Says the Dollar Isn't Losing Its Dominance in Global Economy." Bloomberg. <https://www.bloomberg.com/news/articles/2023-04-21/summers-spurns-de-dollarization-hype-flags-china-capital-flight?> 21 April 2023.
11. Bhusari, Mrugank; Nikoladze, Maia. "Russia and China: Partners in Dedollarization." Atlantic Council. <https://www.atlanticcouncil.org/blogs/econographics/russia-and-china-partners-in-dedollarization/>. 18 February 2022.
12. Okafor, Chinedu. "The dollar is no more relevant in trade between India and Tanzania." Business Insider Africa. <https://africa.businessinsider.com/local/markets/the-dollar-is-no-more-relevant-in-trade-between-india-and-tanzania/dt2txej>. 19 March 2023.
13. Said, Summer and Stephen Kalin. "Saudi Arabia Considers Accepting Yuan Instead of Dollars for Chinese Oil Sales." The Wall Street Journal. <https://www.wsj.com/articles/saudi-arabia-considers-accepting-yuan-instead-of-dollars-for-chinese-oil-sales-11647351541>.
14. Marrow, Alexander. "Russia's SWIFT alternative expanding quickly this year, central bank says." Reuters. <https://www.reuters.com/business/finance/russias-swift-alternative-expanding-quickly-this-year-says-cbank-2022-09-23/>.
15. Moscow, Beijing working on SWIFT workaround -Russian lawmaker." Reuters. <https://www.reuters.com/article/ukraine-crisis-russia-china-idUKL5N2VJ39Z>.
16. Gournichas, P. 2019. "The Dollar Hegemon? Evidence and Implications for Policy Makers".
17. In contrast, the euro's share of 40 percent and 37 percent in global export and import invoicing is not much larger than the share of exports and imports to and from the Euro Area countries during the same period (38 percent and 35 percent, respectively). Mercado, Jacildo and Das (2022) use the invoicing currency data of Boz et al. (2020) from 2009 to 2015 for their analysis. The role of the dollar in trade invoicing is particularly impressive in the Asia Pacific region; indeed, 79 percent of exports and 73 percent of imports are invoiced in USD. Boz et al. (2020) show that this picture has not really changed post 2015. Lastly, as noted in Boz et al. (2020), the invoicing data does not include some of the major global trading countries like China and Mexico.
18. Please see Boz et al. (2020) for more details.
19. Vicquery (2022), using a high-frequency measure of international monetary dominance based on foreign exchange co-movements, shows extraordinary stability and persistence of the dollar's hegemony that is markedly different from other hegemonic currencies over the previous 150 years.

Is Dollar Dominance Dented?

20. DiPippo and Palazzi (2023), using both Boz et al. (2020) data and more high-frequency SWIFT and trade settlement data, show that while China is settling more trade in renminbi (accounting for roughly 23 percent of China's total goods and trades in 1Q 2023), China's volume of bilateral trade is not yet sufficiently large to even come close to matching the dollar's share of trade invoicing. In addition, the SWIFT data shows that the renminbi accounted for 2.2 percent of global payments in February 2023.
21. Setser, Brad W. "The New Geopolitics of Global Finance." Council on Foreign Relations. <https://www.cfr.org/blog/new-geopolitics-global-finance>.
22. Setser, Brad W. "The New Geopolitics of Global Finance." Council on Foreign Relations. <https://www.cfr.org/blog/new-geopolitics-global-finance>.
23. The term "exorbitant privilege" was coined by France's then-finance minister and former French president Valery Giscard D'Estaing in the 1960s. It describes the benefits that the U.S. enjoys due to the dollar being the world's prime reserve currency, such as being indebted to foreign countries essentially free of charge as the U.S. can pay back in dollars that can be issued at will, leading to its overextended standard of living. <https://www.bloomberg.com/news/newsletters/2020-06-13/u-s-dollar-s-exorbitant-privilege-is-about-to-end-kbd18zcy>.

STATE STREET®

State Street Corporation
One Congress Street
Boston, MA 02114-2016
www.statestreet.com

The material presented herein is for informational purposes only. The views expressed herein are subject to change based on market and other conditions and factors. The opinions expressed herein reflect general perspectives and information and are not tailored to specific requirements, circumstances and/or investment philosophies. The information presented herein does not take into account any particular investment objectives, strategies, tax status or investment horizon. It does not constitute investment research or investment, legal, or tax advice and it should not be relied on as such. It should not be considered an offer or solicitation to buy or sell any product, service, investment, security or financial instrument or to pursue any trading or investment strategy. It does not constitute any binding contractual arrangement or commitment of any kind. State Street is not, by virtue of providing the material presented herein or otherwise, undertaking to manage money or act as your fiduciary.

You acknowledge and agree that the material presented herein is not intended to and does not, and shall not, serve as the primary basis for any investment decisions. You should evaluate and assess this material independently in light of those circumstances. We encourage you to consult your tax or financial advisor.

All material, including information from or attributed to State Street, has been obtained from sources believed to be reliable, but its accuracy is not guaranteed and State Street does not assume any responsibility for its accuracy, efficacy or use. Any information provided herein and obtained by State Street from third parties has not been reviewed for accuracy. In addition, forecasts, projections, or other forward-looking statements or information, whether by State Street or third parties, are not guarantees of future results or future performance, are inherently uncertain, are based on assumptions that, at the time, are difficult to predict, and involve a number of risks and uncertainties. Actual outcomes and results may differ materially from what is expressed herein. The information presented herein may or may not produce results beneficial to you. State Street does not undertake and is under no obligation

to update or keep current the information or opinions contained in this communication.

To the fullest extent permitted by law, this information is provided "as-is" at your sole risk and neither State Street nor any of its affiliates or third party providers makes any guarantee, representation, or warranty of any kind regarding such information, including, without limitation, any representation that any investment, security or other property is suitable for you or for others or that any materials presented herein will achieve the results intended. State Street and its affiliates and third party providers disclaim any warranty and all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs, either direct, indirect, consequential, special or punitive, arising from or in connection with your access to and/or use of the information herein. Neither State Street nor any of its affiliates or third party providers shall have any liability, monetary or otherwise, to you or any other person or entity in the event the information presented herein produces incorrect, invalid or detrimental results.

To learn how State Street looks after your personal data, visit: <https://www.statestreet.com/utility/privacy-notice.html>. Our Privacy Statement provides important information about how we manage personal information.

No permission is granted to reprint, sell, copy, distribute, or modify any material herein, in any form or by any means without the prior written consent of State Street.

©2023 State Street Corporation and/or its applicable third party licensor. All rights reserved.

5673700.1.1.GBL.
Expiration date: 5/29/2025