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PAYMENTS AS A FOREIGN POLICY TOOL

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Abstract

This paper analyzes the potential for governments to use payment systems as tools to achieve non-economic policy objectives. Payment systems are primarily thought of in the context of the role of money creation and economic growth. As globalization has increased, the role of payment systems to integrate global trade and economic activity has also increased. The transition to the U.S. dollar as the world reserve currency provides America a unique ability to use the payment system to achieve its national objectives. Over time, America has increasingly relied on its control of the payment system to achieve non-economic objectives. This has mostly been in the realm of foreign policy, but not exclusively. The paper analyzes the growth of the usage of payment systems as a tool for projecting international power, particularly with respect to Russia's invasion of Ukraine. Contextualizing the usage of payments as a tool for foreign policy in light of usage in domestic policy helps explain its usage across multiple arenas. The paper concludes by discussing ramifications of increased reliance on the payment system for the projection of American foreign policy including China's development of an alternative payment system and cryptocurrency.

Introduction

Payments are part of the economy's backbone, essential for settling transactions and conducting trade. Increasing trade between nations further enhances the importance of international payment systems. Inherent tension in payment systems exist between their role in facilitating trade and commerce and a government's ability to use payment systems to achieve policy objectives. This tension exists both internally with respect to domestic social policies and commerce and internationally with respect to foreign policy and international trade. This paper analyzes the structural causes of these tensions, their tradeoffs, and how they have evolved in the given global financial system. The paper finds that the dollar's status as the world reserve currency gives the United States unique leverage. The paper further finds that the US is increasingly using payment systems as tool for policy objectives, both domestically and internationally. This is particularly the case in response to Russia's invasion of Ukraine. The paper discusses the implications of America's usage of the payment system to project international power and considers the potential implications for development of alternative payment systems as a consequence.

The paper is structured in five sections. The first section provides background on the definition of money, payment systems, and the role and evolution of payment systems with a focus on the history of the pound and dollar as the global reserve currencies. The second section details the United States centrality in the current global payment system. The third section analyzes how America uses the payment system as a tool for achieving domestic and foreign policy objectives outside of, and sometimes in conflict with, maximizing economic growth. The fourth section explores the ramifications of these decisions, with particular attention to the current war between Russia and Ukraine. The final section considers potential threats to the US centrality in global payments, particularly the rise of non-nation backed crypto currency.

I. Background

Pre-modern payments

Barter, or the direct exchange of goods and services, dates to before recorded human history (Davies 2013).[1] In primitive economies, where societies were small, self-sufficient, and not interconnected, this system could function well. As civilizations developed and labor became more specialized, this decentralization created inefficiencies. As a result, the first monetary systems developed. Examples of objectives used to as money include amber, beads, cowries used commonly in ancient China, feathers and grains used

[1] Glyn Davies, *A History of Money* (Cardiff: University of Wales Press, 2013), 9.

predominantly in ancient Egypt (*Ibid*).[2] Civilizations adopted these primitive monetary systems independently of one another, suggesting that the creation of money was central to the development of larger human societies.

The use of standardized metallic coins for payments grew in ancient Greece and Rome. Greeks employed the Attic silver standard which became the predominant weight standard for coins in the Eastern Mediterranean (*Ibid*).[3] The Roman Empire used the Denarius which had fixed weight and value, as the basic silver coin (Pense 1992).[4] After the fall of Rome, despite "economic and monetary prostration… the concepts of currency and price were always present" (Feliu 2018).[5] During this time, high value trade would be settled through Byzantine of Muslim gold currency, though eventually the Carolginian system was introduced in 9th century France based on the silver penny, while by the 13th century, full silver coins and ultimately gold coins were introduced for Mediterranean trade (*Ibid*).[6]

What is money?

Payment systems are methods to exchange money. As noted above early methods of exchange relied on physical objects deemed to have value such as amber or feathers. Centralized nations began to favor metals, either specific ones deemed precious (primarily silver and gold in the western world) or coins stamped and minted by the central government. The government playing a centralized role in the creation and validation of money is part of the evolution of money. It also begats a fundamental question in the study of the payment system: what is money?

The traditional definition of money is that it is a medium of exchange.[7] This definition dates back to the famous philosopher John Locke in the 17th century.[8] While this definition remains widely in use today, alternative definitions of money may be better suited to explain its current role and potential alternative forms of money, such as cryptocurrency. No less an economist than Milton Friedman focused on what is money with his study of

[2] *Ibid*, 27.
[3] *Ibid*, 74-78.
[4] Alan Pense, "The decline and fall of the Roman denarius," *Materials Characterization*, vol. 29, no. 2 (1992): 213-222.
[5] Gaspar Feliu, "Money and Currency," *Money and Coinage in the Middle Ages*, ed. Rory Naismith (Boston: Brill, 2018), 23.
[6] *Ibid*, 24-28.
[7] Federal Reserve Bank of St. Louis, "Functions of Money - The Economic Lowdown Podcast Series," Accessed October 5, 2022, https://www.stlouisfed.org/education/economic-lowdown-podcast-series/episode-9-functions-of-money
[8] Felix Martin, *Money: The Unauthorized Biography--From Coinage to Cryptocurrencies*, (New York: Vintage Publishing) 2015.

the role of the Fei in the pacific islands revealing key insights.[9] Felix Martin in his book, Money: The Unauthorized Biography, offers an alternative definition that money is a system of debits and credits that allow for third party acceptance without prior party consent.[10] This definition is consistent with Friedman's insights on the ability of the Fei to function as money even when the physical manifestation of money had been lost. This alternative definition frames money in a broader context, but also increases the centrality of the payment system as an inherent element of money. In both definitions money can only exist if there is a system of debits and credits or a mechanism by which it can be exchanged. Thus for money to exist there must be a payment system.

In early times as described above, the payment system was as simple as physical exchange. However, as Friedman shows physical exchange was not necessary for money even in primitive societies as long as a record system of debits and credits were established and mutually honored. This record keeping function of the payment system is part of what makes money money. It places the payment system then as both a system by which money is moved and as a prerequisite for money to exist.

Payment Systems

Payment systems are structures that facilitate payments. A payment is an exchange of value, usually money, between two or more parties. A payment comprises two distinct pieces: the transmission of funds and the corresponding information. The transmission of funds is the actual movement of money between parties. The information necessary to complete this includes who is paying whom, how much, when, and through which accounts or intermediaries. The flow of information is separable from the flow of funds, an important foundational concept in understanding payment systems. Some payment systems are informational (SWIFT), whereas others combine information and flows of funds (ACH).[11]

Payments systems generally experience network economic effects.[12] Each additional member of a given payment systems adds positive marginal value to existing members. This increases economic value to size promoting large-scale and universal acceptance as properties that users desire. Payments can also have agglomerative economic

[9] Friedman, Milton, *The Island of Stone Money*. (California: Stanford University) 1991.

[10] Martin, *Money: The Unauthorized Biography--From Coinage to Cryptocurrencies.*

[11] Kemenes, Panna, "ACH vs Wire transfer: The top differences you should know," *Wise*, February 19, 2021, https://wise.com/us/blog/ach-vs-wire

[12] Deloitte, "Economic impact of real-time payments," July 2019. https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/deloitte-uk-economic-impact-of-real-time-payments-report-vocalink-mastercard-april-2019.pdf

externalities, in which the additional of a new payment system provides positive value to direct competitors.[13]

The rise and fall of British Sterling as the center of global payments

Sparked by a confluence of British constitutional, agricultural, and commercial revolutions, the industrial revolution in the 18th century established British dominance in international finance (Davies 2013).[14] The pound, which had been used for centuries within England, took on new prominence. Harrod identified several reasons for Sterling's dominance, helping secure its position at the forefront of the payment system. The first was widespread British foreign trade and investment (Harrod 1952).[15] Pounds were used as payments throughout the British Empire, which spanned the globe. The second was "absolute confidence in its stability," (*Ibid.*)[16] helped by British formalization of the gold standard in 1816 (Dick 2013).[17] By the mid-1800's, Britain's gold standard had "become the British Imperial Standard and, in the last quarter of the century, the International Gold Standard" (Davies 2013).[18] Williams (1968) estimated that around 60 percent of world trade was settled in Sterling between 1860 and 1914.[19]

The onset of World War I was the "virtual end" of this Anglo-centric "system of national and international payments" (Davies 2013).[20] The British government took substantial debt during the war, devaluing the pound, and by 1919, exports of gold were prohibited, making convertibility into gold unfeasible. Fearful of a devalued pound the Bank of England raised interest rates in the mid 1920s while Parliament brought back convertibility under the gold standard (Wang 2011).[21] With the onset of a financial crisis at the end of the decade, due to public panic withdraws, the Bank of England had a run on gold reserves and was forced to abandon policy in 1931, and "willingness to hold the pound… was accordingly sharply reduced" (*Ibid*).[22] This opened the door for other currencies to take its place.

[13] Bank for International Settlements, "Fast payments - Enhancing the speed and availability of retail payments," November 2016, https://www.bis.org/cpmi/publ/d154.pdf
[14] Davies, *A History of Money*, 238.
[15] Roy Harrod, "The Pound Sterling," *Essays in International Finance*, no. 13 (1952): 1.
[16] *Ibid.*
[17] Alexander Dick, *Romanticism and the gold standard: money, literature, and economic debate in Britain 1790-1830* (London: Palgrave MacMillan, 2013), 4.
[18] Davies, *A History of Money*, 356.
[19] Barry Eichengreen, "Sterling's Past, Dollar's Future: Historical Perspectives on Reserve Currency Competition," Tawney Lecture, Economic History Society (Leicester: 10 April 2005), 4.
[20] Davies, *A History of Money*, 284.
[21] Lee-Rong Wang, "A Perspective of the U.S. Dollar after the Current Financial Crisis – Lessons from the Fall of the Pound Sterling and the Gold Standard after World War I" in *The Impact of the Economic Crisis on East Asia*, ed. Daigee Shaw and Bih Jane Liu (Cheltenham: Edward Elgar Publishing, 2011), 30.
[22] *Ibid.*

Differing opinions exist as to when this shift occurred. Some argue Sterling did not have a sudden drop, with Paul Krugman characterizing it as having "surprising persistence," (Krugman,1984)[23] and Catherine Schenck writing that only after the British entrance to the European Economic Community in 1971 was it "necessary for the UK government to be publicly explicit that sterling's reserve role would be eliminated as soon as possible" (Schenck 2011).[24] By contrast, Chitu et al. (2012) argue that the dollar overtook Sterling as the international leading currency as early as 1929,[25] while others note the shrinking British share in global trade and industry.[26]

Regardless of when the decline of the pound began there is broad agreement that it is no longer the world reserve currency nor does it play a central role in global trade. Today, central banks only hold 5% of their reserves in pounds (Arslanalp et al. 2022).[27] The United Kingdom remains a major hub for global finance with London in particular, playing a central role in financial markets. UK financial institutions play a large role in payments, processing more than 50% of all European inflows and outflows with the Americas and Asia-Pacific region ("Worldwide Currency" 2015).[28] This is particularly interesting given the UK's decision does not adopt the Euro as its local currency, and the recent Brexit from the broader European Union.

The United Kingdom's experience as the nation-state with the global reserve currency is illustrative for several reasons. First it shows the confluence of economic and military power in determining the global reserve currency. Although the UK itself was only responsible for 8.2 percent of world GDP in 1913, the broader British empire produced nearly 20 percent of world GDP.[29] The military power of the British empire combined with its advanced financial center in London and its openness to trade created the necessary conditions for the centrality of the pound. The decline in the British empire militarily and

[23] Paul Krugman, "The International Role of the Dollar: Theory and Prospect," in *Exchange Rate Theory and Practice*, ed. John F. O. Bilson and Richard C. Marston (Chicago: University of Chicago Press, 1984), p. 269.
[24] Catherine Schenk, "The retirement of Sterling as a Reserve Currency after 1945: Lessons for the US Dollar?" *World Financial Review* (2011): 6.
[25] Livia Chitu, Barry Eichengreen, and Arnaud Mehl, "When did the dollar overtake sterling as the leading international currency?: Evidence from the bond markets," *European Central Bank Working Paper Series*, no. 1433 (2012): 1-43, https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1433.pdf.
[26] *See* Wang, "A Perspective of," 31. (British shares in world trade and industry dropped from 19% to 14% and 18% to 9%, respectively, from 1900 to 1930.)
[27] Serkan Arslanalp, Barry Eichengreen, and Chima Simpson-Bell, "Dollar Dominance and the Rise of Nontraditional Reserve Currencies," International Monetary Fund, 1 June 2022, https://blogs.imf.org/2022/06/01/dollar-dominance-and-the-rise-of-nontraditional-reserve-currencies/.
[28] "Worldwide Currency Usage and Trends," SWIFT, December 2015, 6, https://www.swift.com/node/19186.
[29] De Keersmaeker, Goedele, "Polarity, Balance of Power and International Relations Theory: Post-Cold War and the 19th Century Compared," 2017 (Palgrave MacMillan): 90.

economically after World War I created an opportunity for another nation's currency to replace the pound. As we will see, the United States stepped right in.

Rise of the US dollar as international reserve currency and a medium of exchange

The United States dollar rose to replace the pound Sterling due to a combination of economic, military, and structural reasons. America lacked a central bank for most of the 19th century and well into the 20th. The establishment of the Federal Reserve System as America's third central bank in 1913 increased liquidity in American financial markets (Eichengreen 2005).[30] Unlike the UK, the US maintained the dollars convertibility into gold standard through WWI and its aftermath. This led "to a considerable expansion in the dollar's role as a unit of account and means of payment for international transactions" as conventional thought at the time valued the linkage to gold (*Ibid*).[31] America's economy grew strongly during the first part of the 20th century, particularly in relationship to the new industrial sector. America's share of global industry grew from 31% to 39% from 1900 to 1930 (Wang 2011).[32]

While America entered WWI in favor of the eventual winning side in 1917, the war was never fought on its soil. WWII followed a similar pattern with relatively little direct combat occurring in America. As a result, after each war the US economy was well positioned to expand quickly. Multiple military victories further enhanced America's geo-political standing. While the same can be said for the UK in terms of military victory, the two wars, particularly the second, involved substantial physical degradation of UK territory and decreases in international holdings of land.[33] In contrast, America expanded its territorial holdings during and after both conflicts.

The 1944 Bretton-Woods agreement toward the end of WWII positioned the dollar as the "dominant international currency" (Schenk 2011).[34] Under this system, the dollar was pegged to gold at $35 an ounce, and other countries pegged their currencies to the dollar (Mele 2012),[35] cementing the dollar as the leading method of exchange. Ultimately, America abandoned this aspect of the agreement as President Nixon abandoned the gold standard in favor of free-floating exchanges in 1971 (US Department of State 2022).[36]

[30] Eichengreen, "Sterling's Past," 8.
[31] *Ibid*, 9.
[32] Wang, "A Perspective of," 31.
[33] Broadberry, Stephen, "The Impact of the World Wars on the Long Run Performance of the British Economy," *Oxford Review of Economic Policy* 4, no. 1 (1988): 25–37. http://www.jstor.org/stable/23606033
[34] Schenk, "The retirement of Sterling," 4.
[35] Mele, Marco, "The Dollar as an International Currency: Towards a New Bretton Woods?" *Interdisciplinary Journal of Research in Business* 2, no. 5 (2012): 1.
[36] "Nixon and the End of the Bretton Woods System, 1971-1973," U.S. Department of State, accessed August 10, 2022, https://history.state.gov/milestones/1969-1976/nixon-shock.

However, by that time period convertibility into gold had ceased to be a primal concern for the stability and value of a currency.[37]

Floating exchange rates became the norm for most developed, free-market economies.[38] While advanced free-market countries agreed to allow their currencies to float freely (mostly, with notable government interventions periodically including the Plaza Accords of 1985) there was demand for one currency to function as the base for global trade. The dollar effectively fills that role.[39]

Globally, central banks hold 59% of reserves in US dollars, though this figure has declined in recent years, compared to the next closest in euros at around 20% (Arslanalp et al. 2022).[40] As a dominant currency's store of value and its role as a unit of account "mutually reinforce" one another (Gopinath and Stein 2021),[41] the dollar also remains the primary method of exchange. According to SWIFT data, the dollar accounts for 79.5% of payments in international trade ("Worldwide Currency" 2015).[42] Additionally, over the period 1999-2019, the dollar accounted for 96% and 74% of trade invoicing in the Americas and Asia-Pacific regions, respectively (Bertaut et al. 2021).[43]

II. United States influence over access to the payments system

The current global payment system runs through government-chartered banks. These banks are empowered by their national governments with the ability to create and store money.[44] Specifically, a system of fractional reserve banking, by which banks are able to leverage capital to create and offer money to consumers and businesses, coupled with deposit insurance provided by governments has created substantial confidence in banks to store, create, and transmit money. Banks are generally networked domestically to their

[37] Authers, John. "Nixon Broke With Gold 50 Years Ago. What Comes Next?." Bloomberg, August 15, 2021. https://www.bloomberg.com/opinion/articles/2021-08-15/nixon-broke-with-gold-50-years-ago-what-comes-next#xj4y7vzkg.
[38] IMF Staff, "Exchange Rate Regimes in an Increasingly Integrated World Economy," June 2000, https://www.imf.org/external/np/exr/ib/2000/062600.htm
[39] Bertaut, Carol, Bastian von Beschwitz and Stephanie Curcuru, "The International Role of the U.S. Dollar," Board of Governors of the Federal Reserve System, October 6, 2021, https://www.federalreserve.gov/econres/notes/feds-notes/the-international-role-of-the-u-s-dollar-20211006.html
[40] Arslanalp et al., "Dollar Dominance."
[41] Gita Gopinath and Jeremy C. Stein, "Banking, Trade, and the Making of a Dominant Currency," *The Quarterly Journal of Economics*, vol. 136, no. 2 (2021): 790.
[42] "Worldwide Currency Usage and Trends," SWIFT, 8.
[43] Carol Bertaut, Bastian von Beschwitz, and Stephanie Curcuru, "The International Role of the U.S. Dollar," The Federal Reserve, October 6, 2021, https://www.federalreserve.gov/econres/notes/feds-notes/the-international-role-of-the-u-s-dollar-20211006.htm.
[44] Department of Federal Protection & Innovation, "The Dual Chartering System and the Benefits of the State Charter," Accessed October 6, 2022, https://dfpi.ca.gov/the-dual-chartering-system-and-the-benefits-of-the-state-charter/

nation's central banks and internationally, both directly to each other, through networks of connected central banks, and through networks of global banks. Broadly speaking, these form the correspondent banking system which dominates the current payment system.

A. Correspondent banking system

According to Boar et al. (2020), the "bulk of payments flows through correspondent banks that operate a vast network of bank relationships".[45] Under this structure, one bank, the correspondent, holds deposits owned by another bank, the respondent, and provides those banks with payments services. The idea of banks facilitating interjurisdictional transactions dates to at least 14th century Venice (Dunbar 1892).[46] An international network of correspondent banks began to emerge in the late 1800's, following greater globalization and communication ability, and expanded into the 20th century (Boar et al. 2020).[47] One study put the number of correspondent banking relationships in the 1930's at 2000, predominantly in New York and London (Merrett and Panza 2019).[48]

Many scholars have highlighted flaws and inefficiencies in this structure. For example, Abbadi (2011) pointed out exchange rate volatility, foreign government blockage of fund transfers, and the possibility of correspondent banks assigning low priority to certain respondents (606).[49] Likewise, there can also be time delays as a result of different operating hours, creating settlement risk and potential liquidity issues ("Extending and Aligning" 2022).[50] Finally, differences and complexities in international anti-money laundering (AML) and know-your-customer (KYC) laws can cause delays in payment settlements and add expense to transactions (Agudejo and Iken 2017).[51] There is evidence that correspondent banking relationship numbers have decreased recently (Boar et al. 2020),[52] and fintechs and decentralized instruments, like stablecoins, may

[45] Codruta Boar, Tara Rice, and Goetz von Peter, "On the Global Retreat of Correspondent Banks." *BIS Quarterly Review* (2020): 37.
[46] Charles Dunbar, "The bank of Venice," *Quarterly Journal of Economics*, vol. 6, no. 3 (1892): 308-35.
[47] Boar et al., "On the Global," 38.
[48] David Merrett and Laura Panza, "Hidden in plain sight: Correspondent banking in the 1930s," *Business History*, vol. 61, no. 8 (2019): 1300-1325.
[49] Sinan S. Abbadi, Abeer F.A. Al Abbadi, and Abdel Nasser T. Zyoud, "Assessment of Correspondent Banks Case Study," *American Journal of Economics and Business Administration*, vol. 3, no. 4 (2011): 606.
[50] "Extending and aligning payment system operating hours for cross-border payments," *Committee on Payments and Market Infrastructure Papers*, Bank for International Settlements, May 12, 2022, 12, https://www.bis.org/cpmi/publ/d203.pdf.
[51] Alejandro Agudejo and Jan-Gerrit Iken, "Managing correspondent banking ML/TF risks: Recent regulatory developments on the risk-based approach model," *Journal of Financial Compliance*, vol. 1, no. 3 (2017): 255-266.
[52] Boar et al., "On the Global."

also soon play a larger role in international settlements (Carstens 2020).[53] Thus, while correspondent banking is and has been the main global payment system for the present and recent past, there are new technologies and other pressures for alternative systems to potentially take root.

B. Cross-border payment technologies and services

There are several technologies and services commonly used in international settlements over which the United States holds influence:

SWIFT

SWIFT, or the Society for Worldwide Interbank Financial Telecommunication, is a messaging network which initiates international payments. Founded in 1973, it is connected to over 11,000 institutions in over 200 countries and territories worldwide ("About Us").[54] Of the about $140 trillion transmitted across borders in 2020, around 90% was transmitted through SWIFT ("The race to" 2021).[55] The service is overseen by a select group of central banks (of which the Federal Reserve is one), as well as the European Central Bank ("SWIFT and sanctions").[56] Despite that SWIFT is headquartered in Belgium, and that "U.S. banks are only minority shareholders in the organization" the United States holds substantial influence (Eichengreen 2022).[57] As SWIFT executives Gottfied Leibbrandt and Natasha de Teran stated in an interview:

> "The dollar plays a crucial role in payments, where it denominates close to half of all cross-border activity, as well as the lion's share of securities and derivatives settlements and foreign exchange trade… [N]o bank can afford to lose access to the U.S. payment system. If overseas banks do not comply with U.S. sanctions, the U.S. can simply forbid its banks to process dollar transactions for them" (Farrell 2021).[58]

[53] Agustín Carstens, "Shaping the Future of Payments," *BIS Quarterly Review* (2020): 17-20.
[54] "About Us," SWIFT, accessed August 16, 2022, https://www.swift.com/about-us.
[55] "The race to redefine cross-border finance," *The Economist*, October 21, 2021, https://www.economist.com/finance-and-economics/the-race-to-redefine-cross-border-finance/21805736.
[56] "SWIFT and sanctions," SWIFT, accessed August 16, 2022, https://www.swift.com/about-us/legal/compliance-0/swift-and-sanctions.
[57] Barry Eichengreen, "Sanctions, SWIFT, and China's Cross-Border Interbank Payments System," *The Marshall Papers*, Center for Strategic and International Studies, May 2022, 2 https://www.jstor.org/stable/pdf/resrep41418.pdf.
[58] Henry Farrell, "The dollar provides the U.S. with enormous power. Will new payment technologies change that?" *Washington Post,* September 3, 2021, https://www.washingtonpost.com/politics/2021/09/03/dollar-provides-us-with-enormous-power-will-new-payment-technologies-change-that/.

Fedwire

Fedwire is a real-time gross settlement system whereby institutions that hold an account with a Federal Reserve bank can initiate transfers of funds between each other ("Fedwire Funds Service").[59] The service is used by over 9,000 financial institutions and is directly administered by the Federal Reserve, an agency of the U.S. government (Park 2007).[60]

ACHi

The Federal Reserve also runs an automatic clearing house international (ACHi) as part of its broader ACH system. ACHi connects the Federal Reserve with a select set of other central banks, mostly major developed economies. Traditionally ACHi had a European and G-7 focus but expansion of the last decade plus has included Mexico given the large number of individual remittances sent between people in those countries.[61] [62] Networking central banks allows bank in both countries to more effectively transact with each other even absent direct bilateral correspondent relationships. As the Federal Reserve states, "The services are intended to encourage the use of the ACH system for international payments by accelerating the clearing time and reducing the cost associated with these payments."[63]

CHIPS

CHIPS, or the Clearing House Interbank Payment System, is a netting agent for payments in dollars between parties, which clears and settles around $1.8 trillion in payments throughout the world each day ("About CHIPS").[64] CHIPS is the private sector counterpart to Fedwire and together they are the "primary network for transferring and settling payments in US dollars" ("CHIPS").[65] It is privately governed by about 50 financial institutions including US banks and US branches of foreign banks (Eichengreen 2022).[66]

[59] "Fedwire Funds Services," Board of Governors of the Federal Reserve System, last updated May 7, 2021, https://www.federalreserve.gov/paymentsystems/fedfunds_about.htm.
[60] Yoon S. Park, "Innovations in International Payment Systems and Their Implications for Banks," George Washington University School of Business, August 2007, 18, https://home.gwu.edu/~yspark/Files/5.pdf.
[61] Bernanke, Ben S., "Remarks by Ben S. Bernanke," Federal Reserve Board, February 11, 2005, https://www.federalreserve.gov/boarddocs/speeches/2005/20050211/default.htm
[62] Suki, Lenora, "Competition and Remittances in Latin America: Lower Prices and More Efficient Markets," OECD, February 2007, https://www.oecd.org/daf/competition/prosecutionandlawenforcement/38821426.pdf
[63] Federal Reserve Global Services FAQ https://www.frbservices.org/resources/financial-services/ach/faq/fedglobal.html
[64] "About CHIPS," The Clearing House, accessed August 16, 2022, https://www.theclearinghouse.org/payment-systems/chips.
[65] "CHIPS," Modern Treasury, accessed August 16, 2022, https://www.moderntreasury.com/learn/chips.
[66] Eichengreen, "Sanctions, SWIFT, and China's," 3.

Given the ownership structure, the system would is subject to all US regulations and laws. Additionally, CHIPS has been designated as a systemically important financial market utility as detailed under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (12 USC § 5463),[67] giving the Federal Reserve heightened oversight and influence over CHIPS's operations.

American treatment of global payments

During its leadership of global payments, the United States endeavored for stability largely agnostic of geopolitical or sociopolitical objectives. For one, countries typically considered adversaries were permitted access to payment technologies and services. One example is the SWIFT messaging system, enabling access to the largest network for cross-border payments, which was kept open to countries that America was engaged in significant geopolitical tension and adversarial relations. Financial institutions in North Korea, a nation with whom the United States is still technically at war with, joined in 2001 (Haggard 2014).[68] [69] Banks in Iran, designated a state sponsor of terrorism since 1984 ("State Sponsors of Terrorism"),[70] were permitted to use SWIFT until 2012 (Milne 2022).[71] The SWIFT network still includes several banks in Cuba, a nation that the United States has placed under economic embargo since 1962, a few years after its revolution ("SWIFT Codes for").[72] Sanctions involving global payment systems like SWIFT were very rare. As the Congressional Research Service wrote in studying in studying America's decisions not to use the payment system as a tool for foreign policy, "policymakers had been reluctant to do so given potential economic disruptions" ("Russia's Invasion" 2022).[73]

In addition to providing a more open payment infrastructure, the United States didn't stop private American payment corporations from acting in adversarial nations. One example is credit cards in the Soviet Union. American Express first opened an office there in 1958, mostly to do business with foreign visitors to the USSR (Zubacheva 2020).[74] Visa and Mastercard, two of the largest payment corporations in the world, expanded into the

[67] Dodd-Frank Wall Street Reform and Consumer Protection Act, 12 USC § 5643 (2010).
[68] Blakemore, Erin, "The Korean War never technically ended. Here's why," National Geographic, June 24, 2020, https://www.nationalgeographic.com/history/article/why-korean-war-never-technically-ended
[69] Stephan Haggard, "North Korea in SWIFT," Peterson Institute for International Economics, June 21, 2014, https://www.piie.com/blogs/north-korea-witness-transformation/north-korea-swift.
[70] "State Sponsors of Terrorism," U.S. Department of State, accessed August 16, 2022, https://www.state.gov/state-sponsors-of-terrorism/.
[71] Alistair Milne, "Iran's experience signals banning SWIFT will not work as expected," *Financial Times*, March 1, 2022, https://www.ft.com/content/e8705d48-bfea-4f95-af3b-af13c1e4305d.
[72] "SWIFT Codes for all Banks in Cuba," *BankSwiftCode.org*, accessed August 16, 2022, https://www.bankswiftcode.org/cuba/.
[73] "Russia's Invasion of Ukraine: New Financial and Trade Sanctions," Congressional Research Service, updated March 4, 2022, https://crsreports.congress.gov/product/pdf/IN/IN11871.
[74] Ksenia Zubacheva, "How credit cards took over post-Soviet Russia, January 27, 2020, https://www.rbth.com/business/331600-first-credit-cards.

Soviet Union, and started issuing cards through Soviet banks in 1988 ("Soviet Official" 1988),[75] as part of the USSR's opening of increased economic activity with the west, but before its collapse. The United States government could have blocked these expansions through various means, including Treasury's Office of Foreign Assets Control's (OAFC) power to prohibit transactions with individuals and countries.[76] However, many economic sanctions during this time focused on restricting trade, such as a grain embargo implemented following the Soviet invasion of Afghanistan (Lescaze 1981),[77] as opposed to restricting access to the payment systems. At that time payment systems were not being used as an active tool of foreign policy, or if it was, it was part of an engagement strategy to bring adversarial nations into the U.S. dominated global payment system.

Finally, the United States government directly assists many foreign countries in storing gold reserves, once the bedrock of the payment system under the gold standard and still an important mechanism for stability. The basement of the Federal Reserve Bank of New York is the world's largest known depository of monetary gold, storing about 497,000 gold bars with a combined weight of almost 7,000 tons ("Gold Vault").[78] As of 2008, 48 central banks owned gold in the New York Fed (Mayerowitz 2008).[79] Much of the reserves arrived following World War II, just as the dollar was becoming the world reserve currency and the United States was beginning to hold more influence over global payments ("Gold Vault").[80] The Fed is private about who owns what and how much in its vault, as former Fed Chairman Alan Greenspan stated: "When you deposit your funds in a bank, should that bank make your account balances available to whomever asks?" (qtd. in Burne 2017).[81] However, this function of the New York Federal Reserve Bank and its widespread use serves as evidence that the United States early on sought stability in international financial and monetary systems, and by extension global payments.

[75] "Soviet Official First Holder of VISA Card Issued in USSR," Associated Press, July 31, 1988, https://apnews.com/article/20c718aec69a78e3d7c7a939d17aecd5.
[76] "Visa Rules and Policy," Visa, accessed 16 August 2022, https://usa.visa.com/support/consumer/visa-rules.html.
[77] Lescaze, Lee, "Reagan to Lift Grain Embargo Today," *The Washington Post*, April 24, 1981, https://www.washingtonpost.com/archive/politics/1981/04/24/reagan-to-lift-grain-embargo-today/08f513e8-317a-4739-8ae8-9ba77b90efa5/.
[78] "Gold Vault," Federal Reserve Bank of New York, accessed August 16, 2022, https://www.newyorkfed.org/aboutthefed/goldvault.html.
[79] Scott Mayerowitz, "Welcome to the World's Largest Gold Vault," ABC News, September 18, 2008, https://abcnews.go.com/Business/story?id=5835433.
[80] "Gold Vault," Federal Reserve Bank of New York.
[81] Katy Burne, "The Fed Has 6,200 Tons of Gold in a Manhattan Basement – Or Does It?" *The Wall Street Journal*, August 10, 2017, https://www.wsj.com/articles/the-fed-has-6-200-tons-of-gold-in-a-manhattan-basementor-does-it-1502382644.

III. Increased use of payments as a tool for social and foreign policy

The United States has incorporated payments into our foreign and social policy regimes with increasing frequency and effectiveness over time. This has been particularly the case with respect to foreign policy where America increasingly exerts its economic power in place of, or in combination with, its military engagement. Using access to financial markets and payment systems as a metaphor, it may be said that America is increasingly fighting its adversaries with bonds not bombs.

Foreign policy

Although usage has increased as will be documented below, America has flexed its global economic power in financial markets in the past. In 1956 Egypt nationalized the Suez Canal, formerly controlled by Britain and France, and those two countries sent troops. President Eisenhower, wanting to prevent broader war in the region, threatened the unloading of considerable holdings of pound-sterling bonds onto global exchanges, as well as directed the Treasury to bar the International Monetary Fund offering any relief to Britain to strengthen its currency (Echevarria 2017, 107).[82] The move would devalue Sterling and cause a shortage of its reserves in Britain, dramatically impacting the country's ability to conduct global payments. Ultimately Britain, as well as France, pulled out of Egypt (Bracken 2007).[83]

This power move was blunt, but effective. It was also aimed at allies and fellow NATO members, countries with which direct armed conflict would be highly unlikely. It was an economic response involving assets and currency valuations that would impact payment operations. It was not directed directly at payments infrastructure or access to. It was also a threat not an actual action. This underscores an important aspect of economic warfare, long acknowledged in monetary policy, that mouths can move markets.[84] Actions need not be taken that restrict access of impact payment systems in order to achieve intended geo-political objectives, if threats are credible. The credibility of a threat for payment systems can be markets and economic actors, not just national governments.

Direct use of the financial system for foreign policy was undertaken by the United States against Iran. After hostages were taken in the Tehran U.S. Embassy in 1979 during the

[82] Antulio J. Echevarria II, *Military Strategy: A Very Short Introduction* (Oxford: Oxford University Press, 2017), 107.
[83] Paul Bracken, "Financial Warfare," Foreign Policy Research Institute, September 13, 2007, https://www.fpri.org/article/2007/09/financial-warfare/.
[84] Kurov, Alexander and Raluca Stan, "Monetary policy uncertainty and the market reaction to macroeconomic news," *Journal of Banking and Finance* 86 (January 2018): 127-142. https://doi.org/10.1016/j.jbankfin.2017.09.005

Iranian Revolution, President Carter signed an executive order under the International Emergency Economic Powers Act which froze all Iranian government assets, including bank accounts, in the United States (Walsh and Goshko 1979).[85] The United States has periodically imposed sanctions since, including the Iran and Libya Sanctions Act of 1996, which, among other provisions, placed certain limitations on how much U.S. banks could issue loans or credit in these countries (50 U.S.C. ch. 35 § 1701).[86] In early decades, though, many sanctions were economic as opposed to financial, especially targeting the Iranian oil industry. In 2006, however, a "series of 'targeted financial measures' were introduced to stop foreign banks undertaking financial transactions with Iran" (Milne 2022).[87] This was part of a series of economic actions intended to impose American political objectives on the Iranian government. As then U.S. Senator Evan Bayh (D-ID) stated, "Iran is a menace they have to deal with, through economic, political and cultural steps. [But force] should not an option at this point."[88]

Several years later Congress sought again to create 'tougher economic sanctions' against Iran. The US Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 and the National Defense Authorization Act of 2011 banned all US-Iranian financial transactions, and given its immense global influence, "The EU, as a somewhat reluctant partner to US financial sanctions, froze the assets of Iran's central bank in January 2012. Other countries followed suit" (*Ibid.*).[89] The United States put pressure on large foreign banks – such as Credit Suisse and UBS of Switzerland – to stop doing business with Iranian banks, through both formal actions by the Treasury's Office of Foreign Assets Control and informal actions, given that banks face reputational risks in dealing with Iranian institutions (Bracken 2007).[90] By 2012, Iran was off the SWIFT messaging system. By denying Iran and its institutions access to the global banking system, the United States and allies have essentially restricted the ability to conduct cross-border payments with Iranian actors. The pressure for economic sanctions began in financial markets and moved into payment systems and infrastructure.

The United States and allies have similarly enacted financial warfare measures against North Korea. In 2017, the SWIFT messaging system removed North Korean financial institutions from its payments services due to increased provocations (Bergin and

[85] Edward Walsh and John M. Goshko, "The Freeze," *The Washington Post*, November 15, 1979, https://www.washingtonpost.com/archive/politics/1979/11/15/the-freeze/a2fbd1b3-d4ae-4931-838f-33dd75a0fe09/.
[86] Iran and Libya Sanctions Act of 1996, Pub. L. No. 104-172, 110 Stat. 1541 (1996).
[87] Milne, "Iran's experience."
[88] Knowlton, Brian, "Senators Voice Support for Sanctions Against Iran," *The New York Times*, January 15, 2006, https://www.nytimes.com/2006/01/15/politics/senators-voice-support-for-sanctions-against-iran.html.
[89] *Ibid.*
[90] Bracken, "Financial Warfare."

Wagstaff 2017).[91] Likewise, after the inhumane treatment of Otto Warmbier shined a spotlight on human rights abuses in the country, Congress passed the Otto Warmbier North Korea Sanctions Act of 2019. This law imposes punishment for any organization that conducts financial transactions, or payments, with them. In May 2022, OFAC issued sanctions against two banks, an individual, and a trading company under this law, officially for supporting the county's ballistic missiles program ("Treasury Sanctions Individual").[92] The United States is actively denying North Korean actors access to the global payments system.

The United States has long imposed economic sanctions on Cuba, following Fidel Castro's Cuban Revolution which triggered a trade embargo, but many of these sanctions have expanded to target the payments system. For example, no actor subject to US jurisdiction may engage in a financial transaction or payment with someone in the Cuban military, intelligency, or security service (31 CFR § 515.209).[93] Given that many of the global banks and services that facilitate payments are subject to US jurisdiction, this rule is wide reaching. Additionally, Cuban banks may not open correspondent accounts at US banks, limiting payments between Cuba and the rest of the world through US banks, though US banks can operate correspondent accounts at Cuban banks (*See* note to 31 CFR § 515.584(a)).[94]

Most recently the United States has cut Russia's access to payment systems as a first line of response to Russia's invasion of Ukraine. Following Russia's first invasion of Ukraine in Crimea, the US and Europe implemented sanctions that included asset freezes and restrictions on loans for various banks and individuals, but stopped short of removing Russian banks from SWIFT, though the idea was discussed at the time (Hutton and Wishart 2014).[95] After the broader 2022 invasion, though, SWIFT, with the backing of the US, voted to remove seven major Russian banks from its system, and US sanctions also restrict banks from doing most businesses with Russian entities, while freezing US treasury securities and bank notes held by the Central Bank of Russia (Eichengreen 2022, 1).[96] This move is significant and represents a major escalation of tactics:

[91] Tom Bergin and Jeremy Wagstaff, "SWIFT messaging system bans North Korean banks blacklisted by U.N.," Reuters, March 8, 2017, https://www.reuters.com/article/us-northkorea-banks-swift/swift-messaging-system-bans-north-korean-banks-blacklisted-by-u-n-idUSKBN16F0NI.
[92] "Treasury Sanctions Individual Banks and Trading Company for Supporting North Korea's WMD and Ballistic Missiles Programs," U.S. Department of Treasury, May 27, 2022, https://home.treasury.gov/news/press-releases/jy0801.
[93] Restrictions on direct financial transactions with certain entities and subentities, 31 CFR § 515.209.
[94] *See* note to Certain financial transactions involving Cuba, 31 CFR § 515.584(a).
[95] Robert Hutton and Ian Wishart, "U.K. Wants EU to Block Russia from SWIFT Banking System," Bloomberg, August 29, 2014, https://www.bloomberg.com/news/articles/2014-08-29/u-k-wants-eu-to-block-russia-from-swift-banking-network#xj4y7vzkg.
[96] Eichengreen, "Sanctions, SWIFT, and China's," 1.

> "The exclusion of banks from SWIFT as part of Western economic sanctions also is not new… However, never before have banks of a comparable size and degree of connectedness with the global financial system such as Sberbank been banned from SWIFT" (Nolke 2022, 2).[97]

However, it's worth not overstating the policy action. SWIFT did not ban all Russian banks, and given that the banks were already subject to sanctions, some like Kolhatkar (2022) doubt that the move will have a crippling effect. [98]

Social policy

The United States has used access to the payment system for domestic social policy objectives. A An early example is the Interstate Wire Act of 1961 (18 U.S.C. § 1084).[99] The law prohibits the use of wire communication in interstate commerce to facilitate gambling. Wire communication (as evident in terms like Fedwire) is a common mechanism through which payments are initiated. The law was the embodiment of a campaign in the United States, championed particularly by Robert F. Kennedy (*Kennedy* 1961),[100] against gambling and organized crime. Gambling was targeted both because of social views on its moral nature and because it was a source of significant income for organized crime at the time.[101]

Another expansion is the Bank Secrecy Act (31 USC § 5311),[102] establishing the basis for modern anti-money laundering enforcement. The purpose of the BSA has evolved from its inception to root out organized crime in the 1960s to focusing on drug trafficking in the 1980s and 1990s and then to terrorism after the attacks of September 11, 2001 (Klein and Readling 2015).[103] The original BSA law greatly increased the government's

[97] Andreas Nolke, "The weaponization of global payment infrastructures: A strategic dilemma," *SAFE White Paper*, Leibniz Institute for Financial Research, no. 89 (2022): 2, https://www.econstor.eu/bitstream/10419/261001/1/180803919X.pdf.
[98] Sheelah Kolhatkar, "How Significant is Russia's Partial Ban from SWIFT?" *The New Yorker*, March 8, 2022, https://www.newyorker.com/business/currency/how-significant-is-russias-partial-ban-from-swift.
[99] Interstate Wire Act of 1961, 18 U.S.C. § 1084 (1961).
[100] *STATEMENT OF THE HONORABLE ROBERT F. KENNEDY, ATTORNEY GENERAL OF THE UNITED STATES, BEFORE SUBCOMMITTEE NO. 5 OF THE HOUSE COMMITTEE ON THE JUDICIARY, IN SUPPORT OF LEGISLATION TO CURB ORGANIZED CRIME AND RACKETEERING*, 87th Cong., 1-32 (May 17, 1961), https://www.justice.gov/sites/default/files/ag/legacy/2011/01/20/05-17-1961.pdf.
[101] Ferentzy, Peter and Nigel Turner, "Gambling and organized crime — A review of the literature," *Journal of Gambling Issues* 23, (2009), https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1045.959&rep=rep1&type=pdf
[102] Bank Secrecy Act, 31 USC § 5311 (1970).
[103] Klein, Aaron and Kristofer Readling, "Acceleration in Suspicious Activity Reporting Warrants Another Look," Bipartisan Policy Center, September 15, 2015, https://bipartisanpolicy.org/blog/acceleration-in-suspicious-activity-reporting-warrants-another-look/

ability to conduct oversight over banks, so much so that a case challenging it under the First, Fourth, and Fifth Amendments made it all the way to the Supreme Court. In a 6-3 opinion, the Supreme Court upheld the law's Constitutionality (*California Bankers Assn. v. Schultz*, 416 U.S. 21 (1974)).[104]

Another example is the prohibition of on-line poker enacted by Congress through the Unlawful Internet Gambling Enforcement Act (UIGEA) of 2006. UIGEA prohibits any person or business from knowingly accepting payments in participation of another person engaged in unlawful Internet gambling.[105] Congress chose to use the payment system, including banks, in order to capture entities subject to American regulation given the global nature of on-line poker. Financial regulators, including the Federal Reserve promulgated rules that effectively covered banks serving possible gamblers, gambling companies, and payment intermediaries facilitating transactions between those two parties. This included "system operator, merchant acquirer, third-party process, or card issuers in a card system (including credit cards, debit cards, pre-paid cards, and stored value cards."[106] The onus was placed on the banks to "establish and implement written policies and procedures that are reasonably designed to identify and block or otherwise prevent or prohibit payments related to unlawful Internet gambling that are restricted by UIEGA"[107].

The structure of UIGEA is unique among criminal enforcement mechanisms in the United States. Banks have a series of obligations under BSA and AML regimes to identify and report suspicious or illegal activity to law enforcement. However, only for the type of unlawful internet gambling mentioned under UIGEA (on-line poker) are banks required to pro-actively block, prevent, and prohibit payment systems that fund these wagering systems. The law requires the Treasury Secretary and Governors of the Federal Reserve Board, in conjunction with the Attorney General to establish a regulatory mechanisms that identifies and blocks financial transactions to unlawful internet gambling (CRS 2014).[108]

While UIEGA is an example of Congress legislating social policy through the payment system there are other examples depicting the growing use of payments in policy through non-legislative actions by the government. Take the case of WikiLeaks, a site which publishes datasets and other official materials that are typically considered restricted and sensitive. In 2010, the State Department sent a letter to Wikileaks stating that its

[104] *California Bankers Assn. v. Schultz*, 416 U.S. 21 (1974).
[105] Federal Reserve Regulation GG Compliance Guide,
https://www.federalreserve.gov/supervisionreg/regggcg.htm
[106] Ibid
[107] Ibid
[108] Congressional Research Servic, Internet Gambling: An Abrided Overview of Federal Criminal Law, January 24, 2012, https://crsreports.congress.gov/product/pdf/RS/RS21984/6

operations were illegal in the United States, prompting PayPal, fearing its own legal exposure, to halt individuals from using its services to donate to the organization ("PayPal says" 2010).[109] Visa and Mastercard followed suit (Greenberg 2010).[110] Similar examples include recent attempts to combat prostitute and human trafficking through the ability of the internet company Backpages to receive payments.[111] Additional concerns regarding pornography, sexual abuse, and exploitation have been raised as it relates to websites Pornhub and OnlyFans.[112] Some of these decisions were later overturned (Shanley 2013),[113] but they still show the influence the US government can wield in halting payments services to organizations to which it objects.

Using the payment system to fight illicit activities domestically has two main outcomes. One is that by preventing these industries from using the financial system to transact payments it makes them more difficult to occur, raising costs and increasing barriers to conduct business.[114] The other is that the financial system can be used as a method to detect, tract, and eventually capture and convict criminals.[115] A metaphor helps explain this objective: criminals are like fish in the ocean. They swim deep to avoid detection. Crime produces profits in the form of money. This money needs to be transmitted or used. Much as air from fish at the bottom of the ocean rises to the top, so does the money required for criminal activity. Detecting and following the money can allow law enforcement to go back and find the criminals responsible.

A final element of the detection system is that the illegal usage of money is often easier to prove and merit convictions for than the underlying crime itself. For example, former U.S. Speaker of the House Dennis Hastert is in jail for anti-money laundering violations involving illegal payments to a person he was accused of sexually molesting, not any

[109] "PayPal says it stopped Wikileaks payments on US letter," BBC News, December 8, 2010, https://www.bbc.com/news/business-11945875.
[110] Andy Greenberg, "Visa, MasterCard Move to Choke Wikileaks," *Forbes*, December 7, 2010, https://www.forbes.com/sites/andygreenberg/2010/12/07/visa-mastercard-move-to-choke-wikileaks/?sh=495761092cad.
[111] Graff, E.J., "A prosecutor's fight against sex trafficking — and Backpage.com," Washington Post, April 8, 2022, https://www.washingtonpost.com/outlook/2022/04/08/prosecutors-fight-against-sex-trafficking-backpagecom/
[112]
[113] Mia Shanley, "WikiLeaks claims victory as credit card donations flow again," Reuters, July 3, 2013, https://www.reuters.com/article/us-iceland-wikileaks/wikileaks-claims-victory-as-credit-card-donations-flow-again-idUSBRE96214720130703.
[114] Bokat-Lindell, Spencer, "How OnlyFans Became the Latest Casualty of the War on Porn," New York Times, August 24, 2021, https://www.nytimes.com/2021/08/24/opinion/onlyfans-porn-sex-workers.html
[115] D'Antuono, Steven M, "Combating Money Laundering and Other Forms of Illicit Finance: Regulator and Law Enforcement Perspectives on Reform," FBI, November 29, 2018. https://www.fbi.gov/news/testimony/combating-money-laundering-and-other-forms-of-illicit-finance

crimes regarding sexual molestation.[116] And perhaps the most famous American example of law enforcement pursuing financial crimes as opposed to other crimes involves the gangster Al Capone, who was convicted of tax evasion not running the largest organized crime syndicate in the United States at the time.[117]

A core tension exists between the two objectives of the BSA of making crime more difficult and making criminals easier to detect, capture, and convict. The first pushes criminals out of the formalized banking system by discouraging financial institutions from providing services. The second relies on the provision of financial services by institutions subject to these laws to provide the data necessary for law enforcement to use these tools.[118] This tension helps explain why current American law allows banks to provide financial services to those suspected of engaging in criminal activity but requires them to report that activity.

Despite legal permission to provide services to criminals, many banks attempt to avoid doing so. Over the past decade plus a number of states have rebelled against federal criminalization of cannabis, establishing a series of state licensed cannabis growth, manufacturing, and sales operations.[119] These state-based cannabis markets have grown sharply to an estimated $10.8 billion market in 2021 (Grandview, 2022).[120] State and local governments have actively engaged and promoted these markets, earning substantial tax revenue directly from the cannabis industry which remains illegal under federal law.[121]

Cannabis companies require access to the payment system and have struggled at various levels with that access. A series of hodgepodge rulings from the U.S. government (Cole memorandum) and federal bank regulators (including differing rulings from various regional Federal Reserve Banks) have made access to the banking system expense and

[116] Tarm, Michael, "Dennis Hastert Sentenced To 15 Months In Prison," Associated Press, April 27, 2016, https://www.wbez.org/stories/dennis-hastert-sentenced-to-15-months-in-prison/62c95fc7-2dc9-4c5d-8a70-ef5131a2140a
[117] FBI, "Al Capone," Accessed October 6, 2022, https://www.fbi.gov/history/famous-cases/al-capone#:~:text=On%20June%2016%2C%201931%2C%20Al,his%20plea%20to%20not%20guilty.
[118] Barr, Michael, Karen Gifford and Aaron Klein, "How new technologies can enhance anti-money laundering efforts and provide financial access," The Brookings Institution, April 17, 2018, https://www.brookings.edu/research/how-new-technologies-can-enhance-anti-money-laundering-efforts-and-provide-financial-access/.
[119] Weisz, Barry and Michael Rosenblum, "Cannabis State-by-State Regulations," Thompson Coburn LLP, Updated August 2021, https://www.thompsoncoburn.com/docs/default-source/blog-documents/ranking-of-state-cannabis-regulations.pdf
[120] Granview, U.S. Cannabis Market Size https://www.grandviewresearch.com/industry-analysis/us-cannabis-market?utm_source=prnewswire&utm_medium=referral&utm_campaign=hc_15-june-22&utm_term=us-cannabis-market&utm_content=rd
[121] Klein, Aaron, "Cannabis: the new green that's filling state coffers," Brookings Institution, May 1, 2019, https://www.brookings.edu/opinions/cannabis-the-new-green-thats-filling-state-coffers/

difficult, but not impossible for cannabis companies.[122] American cannabis companies have even been able to access public capital markets, although they have had to go overseas, primarily to Canada for public offerings.[123]

IV. Ramifications of US Pulling the Payments Lever

The payment system is a powerful lever for policy makers to pull to achieve domestic and international objectives. The United States has particular power when it comes to payment systems given the dollar's role as the global reserve currency and to a degree, control over access to the global payments system. American leaders have been more willing to use this leverage as a tool for foreign and social policy objectives. What does this mean?

To start with, the payment tool is effective. While Russian sanctions did not stop its invasion of Ukraine, they were a particularly strong response among non-military counter measures available. Deemed the "among the most powerful in history" in punishing the Russian economy (Hufbauer and Hogan 2022).[124] Estimates are that these sanctions will cause/exacerbate a recession in Russia that could reach depression level.

Such financial sanctions can also be more precisely targeted as opposed to traditional economic warfare such as a trade embargo which can be more broad-reaching so less efficacious in targeting a country's political and economic elite (Bracken 2007).[125] In addition to targeting Russian banks and other financial facilitators, America has attempted to direct sanction Russian elites and policy makers. This has the explicit goal of economically targeting senior leaders and supporters of the Russian government and economy, whether or not they are government officials.[126]

[122] Hudak, John and Aaron Klein, "Banks don't want to work with marijuana companies. It's time for that to change," Brookings Institution, March 28, 2019, https://www.brookings.edu/opinions/banks-dont-want-to-work-with-marijuana-companies-its-time-for-that-to-change/

[123] Khan, Shariq, "Cannabis producer Ascend Wellness jumps 22% in Canadian market debut," Reuters, May 4, 2021, https://www.reuters.com/article/ascend-wellness-ipo/cannabis-producer-ascend-wellness-jumps-22-in-canadian-market-debut-idUSL4N2MR37Y

[124] Gary Clyde Hufbauer and Megan Hogan, "How effective are sanctions against Russia," Peterson Institute for International Economics, March 16, 2022, https://www.piie.com/blogs/realtime-economic-issues-watch/how-effective-are-sanctions-against-russia.

[125] Bracken, "Financial Warfare."

[126] Eisen, Norman, Lilly Blumenthal, and Robin J. Lewis, "We must reinforce Putin's military losses with economic ones," Brookings Institution, September 14, 2022, https://www.brookings.edu/blog/up-front/2022/09/14/we-must-reinforce-putins-military-losses-with-economic-ones/

It is worth noting, though, that some doubt the purported power of financial warfare. For example, despite all our actions against Iran, it still earned about $30 billion in payments for oil exports in 2019 (EIA, 2021).[127]

However, sanctions involving finance and payments are also more politically expedient than alternatives. According to a *Washington Post* poll, 67% of Americans supported increasing economic sanctions on Russia, while at the same time 72% opposed direct US military action (Clement et al. 2022).[128] According to Bracken (2007), "Most people think of financial action as a substitute for military action."[129] Whether this is true or not may not really matter. If people want to take substantive and punitive action, without traditional methods of conflict that potentially put troops in harm's way, sanctioning a country's banks to inhibit the ability to transmit payments may be an attractive option.

This all serves as an indication the US may continue on its current trajectory toward greater utilization of payments in policy. As Weiss (2022) recent paper analyzing the impact of U.S. sanctions against Russia for Ukraine concluded, "the threat to the U.S. dollar's reserve currency status is relatively limited."[130] However, there are reasons for pause.

First, excessive policy actions could undermine the dominion of the dollar in foreign exchange markets. As Krugman (1984) wrote, "Here there is again a situation where the dollar is used because it is used, and its place could be taken by the mark or yen".[131] In other words, the dollar's reserve currency status is not an absolute given, so if less countries are settling payments in dollars because of US sanctions, the dollar may become less stored worldwide, opening the door for other currencies, or possibly even financial technologies or digital assets, to take its place. This would reduce the leverage the US wields over global payments, while also reducing the strength of the dollar worldwide. While this may not preclude the US from targeting payments in sanctions packages in the future, it may lead to more caution or more of a desire to use this power sparingly.

The targeting of existing settlement services may also trigger the proliferation of new ones. CIPS, or the Cross-Border Interbank Payment System, was established in 2015 in

[127] "Country Analysis Executive Summary: Iran," U.S. Energy Information Administration, last updated July 16, 2021, 2, https://www.eia.gov/international/content/analysis/countries_long/Iran/pdf/iran_exe.pdf.
[128] Scott Clement, Emily Guskin, and Ashley Parker, "Big majority of Americans back sanctions on Russia, aid to Ukraine, poll finds," *The Washington Post*, May 2, 2022, https://www.washingtonpost.com/politics/2022/05/02/poll-ukraine-support-biden/.
[129] Bracken, "Financial Warfare."
[130] Weiss, Colin, "Geopolitics and the U.S. Dollar's Future as a Reserve Currency," Federal Reserve Bank, October 2022, https://www.federalreserve.gov/econres/ifdp/files/ifdp1359.pdf.
[131] Krugman, "The International Role," 272.

China to clear and settle payments in renminbi, utilizing a network of around 1,300 institutions around the globe (Eichengreen 2022).[132] The service is surely growing rapidly, possibly by 75% of transaction value in 2021 alone (*Ibid*).[133] However, it is still fairly new and not yet extensively used, and "China's government is astute enough not to challenge SWIFT until the CIPS has matured, but no doubt one day the challenge will come" (Prasad 2017).[134] If alternatives like CIPS develop over which the US has minimal involvement, it would reason that it might be harder for the US to effectively sanction the payment systems of countries that use them. There is even thought that Russia received renminbi for coal and oil exports to China in 2022 after many of its banks left SWIFT, and was likely using CIPS (Eichengreen 2022).[135] If this is true, the US may be less inclined to push for the removal of banks from services like SWIFT in the future.

In the next several years and decades, the US will need to critically evaluate how it should utilize its influence over the payment system for policy objectives, particularly in the foreign policy arena where such control is most delicate.

V. U.S. Centrality in Global Payment System

While the current financial payment system relies on U.S. dollars and a correspondent banking system that largely requires access to America's financial system at some level, the future global payment system may not. Future alternative systems are actively being promoted by other nation-states, such as China. The introduction and global interest in non-governmental issues cryptocurrency is another potential threat to America's hegemonic state in the global payment system. A close examination of each illustrates the potential for replacements systems and the difficulty each faces in dislodging the status quo.

The Peoples Bank of China launched its Cross-Border Interbank Payments System (CIPS) in 2015.[136] The PBOC supervises CIPS, a similar structure to the Federal Reserve and CHIPS. CIPS is a real-time gross settlement system as opposed to a netting system as CHIPS (Eichengreen 2022), making it move faster and have several structural advantages as is common with newer real-time payment systems.[137] By 2022,

[132] Eichengreen, "Sanctions, SWIFT, and China's," 4.
[133] *Ibid.*
[134] Eswar Prasad, *Gaining Currency: The Rise of the Renminbi* (Oxford: Oxford University Press, 2017), 116.
[135] Eichengreen, "Sanctions, SWIFT, and China's," 5.
[136] Reuters, "Factbox: What is China's onshore yuan clearing and settlement system CIPS?" February 28, 2022, https://www.reuters.com/markets/europe/what-is-chinas-onshore-yuan-clearing-settlement-system-cips-2022-02-28/#:~:text=WHAT%20IS%20CIPS%3F,banks%20in%20offshore%20yuan%20hubs..
[137] Eichengreen, Barry, "Sanctions, SWIFT, and China's Cross-Border Interbank Payments System," *Center for Strategic and International Studies*, May 2, 2022, https://www.csis.org/analysis/sanctions-swift-and-chinas-cross-border-interbank-payments-system.

CIPS expanded to 1,280 participating institutions in 103 countries, which while impressive is still far from SWIFT's 11,000+ institutions in 200 countries (Jin, 2022).[138] CIPS serves as both a messaging and settlement system as opposed to SWIFT which is only a messaging system (Jin 2022). CIPS settles in Chinese renminbi not in US Dollars.

China promoted its counterpart CIPS system in response to America's decision to remove Russian actors from the SWIFT system. Chinese media proposed greater integration between CIPS and Russia's internal payment system in direct response to America's sanctioning of Russia (Guar, 2022).[139] This position was echoed by Russian state-owned media (US-China Economic and Security Review Commission, 2022).[140] Evidence of greater usage of Chinese payments by Russian companies has been found, as by "July 2022 Russia was responsible for 3.9 percent of all payments using RMB outside of China, compared to less than 1 percent in January 2022. Russian businesses and financial institutions may be exploring opportunities to use RMB in their international transactions after international sanctions curtailed Russian banks' access to U.S. dollars and euros." (*Ibid*).

As Eichengreen states, "China is making strides in fostering cross-border use of the renminbi and building a renminbi-based interbank payments system that can serve as an alternative to SWIFT and Western clearinghouses. However, these remain somewhat limited alternatives—for the moment." Major limiting factors include the requirement for settlement in renminbi and limited global adoption of the system. Global adoption of the CIPS system could grow to reduce this problem, although it is not clear whether G7 nations would actively encourage their financial institutions to join or withhold membership. Regardless of CIPS participation, national banks are still subject to their own country's sanctions regimes and could not use CIPS to evade sanctions. Further, to the extent that CIPS is promoted as a method to more deeply engage with Russian actors as a means to avoid sanctions, banks in G7 countries and their national regulators may be more hesitant to engage the CIPS system.

Settlement in renminbi requires either pricing the transaction in renminbi or the creation of exchange rate risk between buyer and seller. This exchange rate risk comes from the potential for fluctuations between the value in the currency of settlement and the RMB

[138] Jin, Emily, "Why China's CIPS Matters (and Not for the Reasons You Think)," *Lawfare*, April 5, 2022, https://www.lawfareblog.com/why-chinas-cips-matters-and-not-reasons-you-think.
[139] Gaur, Viraj, "Russia-Ukraine: Can China's CIPS Be a Good Alternative to SWIFT?" *The Quint World*, March 4, 2022, https://www.thequint.com/tech-and-auto/tech-news/russia-ukraine-can-chinas-cips-be-a-good-alternative-to-swift-bank-messaging-payment-system#read-more#read-more.
[140] U.S.-China Economic and Security Review Commission, "China's Position on Russia's Invasion of Ukraine," September 28, 2022, https://www.uscc.gov/research/chinas-position-russias-invasion-ukraine.

between settlement and payment. While the RMB remains loosely tied to the value of the dollar the currency does float somewhat again the dollar. The PBOC actively manages the RMB value against the dollar, allowing for fluctuations of up to 2 percent on a daily basis.[141] This highlights the inherent difficulty in having a global payment system that does not transact in the global world reserve currency.

Cryptocurrency

The publication of Bitcoin: A Peer-to-Peer Electronic Cash System on October 31, 2008 under the pseudonym Satoshi Nakamoto has led to the creation of a slate of non-governmental backed cryptocurrency.[142] These forms of digital currency have exploded in usage and value. In less that fifteen years since creation, the two largest cryptocurrencies, Bitcoin and Ethereum carry market capitalizations of over $500 billion jointly with transaction volumes in the tens of billions daily.[143]

In addition to cryptocurrencies whose valuation is meant to fluctuate, another form of non-governmental backed cryptocurrency are stablecoins. Stablecoins are meant to keep their value constant, usually pegged to the U.S. dollar at parity. The largest stablecoins currently are Tether and US Dollar Coin with a combined market value greater than $100 billion.[144] Stablecoins are used primarily for facilitating trades between cryptocurrencies and other government backed currencies, or directly between cryptos. However, it is possible that stablecoins coin be used for broader sets of payments given their greater levels of value stability compared to other forms of crypto.

Cryptocurrencies have their own payment systems, ranging from direct exchange electronically (or even physically in passing of thumb drives) to digital wallets, trading platforms, and exchanges. Cryptocurrencies have challenged existing regulatory structures by not naturally falling into any of the prior categories established by existing legal frameworks.[145]

Cryptocurrencies challenge an assumption, often unstated, that money needs to be issued and/or backed by a nation state. As described earlier, a key property of money is

[141] Cheng, Evelyn, “China rushes to pull back the yuan from a three-year high,” CNBC, June 2, 2021, https://www.cnbc.com/2021/06/03/china-sets-yuan-rmb-weaker-vs-us-dollar-for-first-time-in-a-week.html.
[142] Nakamoto, Satoshi, “Bitcoin: A Peer-to-Peer Electronic Cash System,” Bitcoin.com, October 31, 2008, https://bitcoin.org/bitcoin.pdf.
[143] Valuations of cryptocurrencies are volatile. This data is from October, 2022: CoinMarketCap, “Today's Cryptocurrency Prices by Market Cap,” Accessed October 19, 2022, https://coinmarketcap.com/.
[144] Ibid.
[145] Masad, Timothy G. and Howell E. Jackson, “How to Improve Regulation of Crypto Today—Without Congressional Action—and Make the Industry Pay For It,” The Brookings Institution, October 3, 2022, https://www.brookings.edu/wp-content/uploads/2022/10/WP79-Massad-Jackson-updated-2.pdf.

that it can be accepted by third parties without prior party consent (Martin 2015).[146] Cyrpto's reliance on a distributed ledge for electronic record keeping, built on blockchains that are purported to be immutable and transparent could give it the ability to achieve this status without the need for a national government to stand behind the asset.

However, there are several challenges that cryptocurrency face to be viable alternative payment systems. Blockchain systems, particularly open permissible ones are significantly slower than existing payment rails. Bitcoin, running on such a blockchain, can handle seven transactions per second. For comparison traditional payment network Mastercard can handle 5,000 while Visa can handle 24,000.[147] Attempts to handle payment speed by altering aspects of the settlement process are on-going, with movement on both a Lightening Network for Bitcoin and a more fundamental change on the Ethereum block chain from so-called proof of work to proof of stake.[148] [149]

Tax treatment is another core problem cryptocurrencies face in wider scale adoption. National currency used for payment purposes is typically exempt from capital gains taxation. When a national currency appreciates, it typically does not require its citizens to consider that increase in wealth for tax purposes (capital gains specifically, but other types of wealth taxes). There are exceptions to this when the currency is used as a financial asset (e.g., trading in foreign exchange markets) although very few retail investors trade currency.

The introduction of cryptocurrency begged the question of whether national governments would treat this as a form of money for payment and be exempt from taxation, or as a financial asset. Most nations, notable the United States, Japan, and most European nations consider all forms of crypto as financial assets subject to capital gains taxation.[150] [151] The level of taxation varies between countries and presents its own impediment to adoption of crypto for payments. A second problem involves the cost

[146] Martin, *Money: The Unauthorized Biography*.
[147] Rodrigues, Francisco, "Bitcoin Lightning Network vs Visa and Mastercard: How do they stack up?" Cointelegraph, August 24, 2022, https://cointelegraph.com/news/bitcoin-lightning-network-vs-visa-and-mastercard-how-do-they-stack-up.
[148] *Ibid.*
[149] Akintade, Temitope, "Merge will improve Ethereum's transaction speed by 769,000%. Here is how," Technext, July 2022, https://technext.ng/2022/07/25/ethereum-merge-all-you-need-to-know/#:~:text=Benefits%20of%20Ethereum%20Merge&text=The%20new%20ETH%202.0%20proof,in%20the%20network's%20transaction%20speed.
[150] Internal Revenue Service, *Notice 2014-21*, Accessed October 19, 2022, https://www.irs.gov/pub/irs-drop/n-14-21.pdf.
[151] Partz, Helen, "Which countries are the worst for crypto taxation? New study lists top five," Cointelegraph, September 8, 2022, https://cointelegraph.com/news/which-countries-are-the-worst-for-crypto-taxation-new-study-lists-top-five.

of record keeping for merchants who chose to accept crypto. In order to track their profit or loss from the change in value of the crypto they received, they have to keep clear records on the time of the transaction and the valuation of the crypto they received in terms of their home currency. To the extent merchants then use that crypto to fund their own business operations (whether directly or by converting it to fiat currency) they have to again record the change in valuation and are subject to applicable taxation.

A notable exception to this system is in El Salvador, which legally declared Bitcoin to be legal tender and required all merchants to accept it (Quirk 2021).[152] El Salvador had previously abandoned its own national currency in 2001 and adopted the U.S. dollar as its official currency (IMF 2011)[153]. The lack of having its own national currency may have played a role in El Salvador's decision to adopt Bitcoin as legal currency as there was no national competition for that privileged position. In addition, El Salvador relies heavily on international remittances, its proportion of GDP reliant on remittances I the highest in the western hemisphere (Quirk 2021). Advocates of Bitcoin adoption argue that crypto could be an alternative to the expensive international remittance options available to retail consumers, particularly those sending from the United States.[154] [155] Unless and until other nations change their taxation treatment and/or deem Bitcoin or any other crypto legal tender, the taxation issues work against adoption of cryptocurrencies for mass payment purposes.

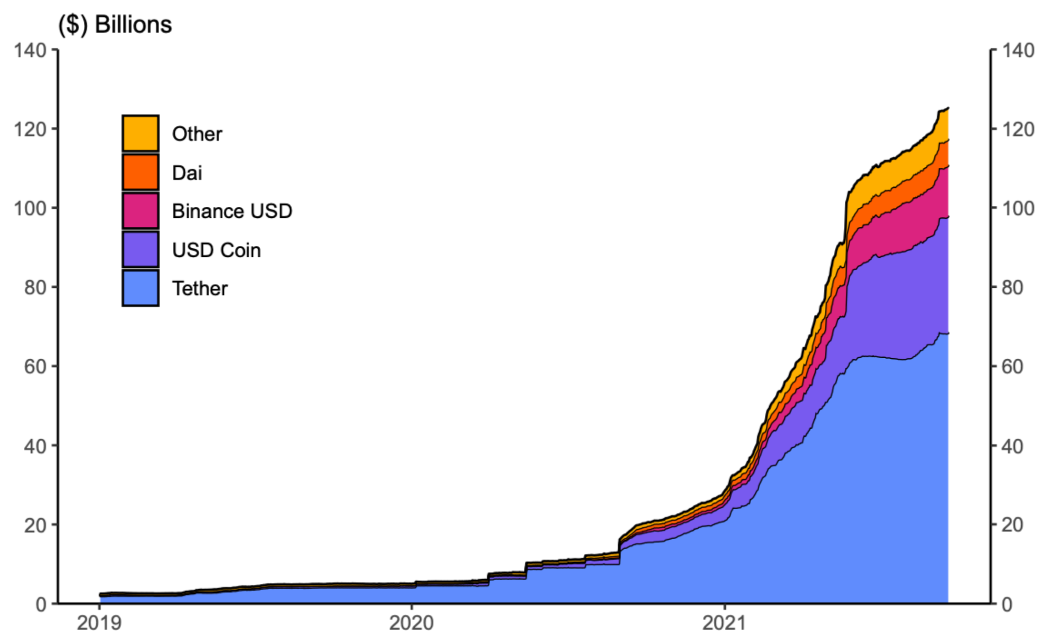
Variable in value is a final problem facing crypto adoption as a payment rail. Stability in valuation is highly desirable in a payment system, as instability creates settlement and value risk between parties. Price has a component of time; two parties agree on both a price and time for a transaction. If the valuation of the payment changes during any delay in settlement than one party can lose value. Given variance neither party may know whether it is the one who could lose value and hence both may be more cautious in the face of settlement risk. This type of risk increases uncertainty, which creates a series of other problems and frictions.

[152] Quirk, Cecilia, "El Salvador's Bitcoin Law: Contemporary Implications of Forced Tender Legislation," *Princeton Legal Journal*, 2021, https://legaljournal.princeton.edu/el-salvadors-bitcoin-law-contemporary-implications-of-forced-tender-legislation/#:~:text=Article%207%20of%20El%20Salvador's%20Bitcoin%20Law&text=According%20to%20Article%207%2C%20%E2%80%9CEvery,acceptance%20as%20payment%20is%20compulsory.
[153] Swiston, Andrew, "Official Dollarization as a Monetary Regime: Its Effects on El Salvador," International Monetary Fund, 2011, https://www.imf.org/external/pubs/ft/wp/2011/wp11129.pdf.
[154] Quirk, "El Salvador's Bitcoin Law."
[155] Orozco, Manuel, "Understanding the continuing effect of the economic crisis on remittances," Inter-American Development Bank, August 2009, https://publications.iadb.org/en/publication/understanding-continuing-effect-economic-crisis-remittances.

Cryptocurrencies instability of value makes it less desirable as a payment mechanism (IMF 2022).[156] Major crypto currencies have experienced sharp swings in value, with Bitcoin prices moving more than 57% over a 3 month period starting March 29, 2022, and Ethereum prices moving more than 67% over the same period.[157] Additionally, Bitcoin's price has, at times, changed as much as 7.6% over the course of a day, with an average daily fluctuation of 4% in 2021.[158] [159] By contrast national fiat currencies rarely move more than one percent per day, particularly for developed nations.

Crypto stablecoins have been created to address this risk. As mentioned above, stablecoins have exploded in size recently with the two largest stablecoin entities being within the top five market capitalizations of all crypto. Stablecoins grew by 530 percent from September 2020 to 2021 (Liao 2022).[160]

Figure 1: Circulating supply of USD-pegged public stablecoins



[156] Wellisz, Chris, "The Currency Revolution," International Monetary Fund, March 2022, https://www.imf.org/en/Publications/fandd/issues/2022/03/Currency-revolution-Prasad.
[157] Author's own calculations from: Coindesk, "Bitcoin," Accessed October 19, 2022, https://www.coindesk.com/price/bitcoin/; Coindesk, "Ethereum," Accessed October 19, 2022, https://www.coindesk.com/price/ethereum/.
[158] Armstrong, Martin, "The Varying Volatility of Cryptocurrencies," Statista, June 7, 2022, https://www.statista.com/chart/27577/cryptocurrency-volatility-dmo/.
[159] Godbole, Omkar, "Bitcoin Price Posts Biggest Daily Gain Since Early March, What Next?" Forbes, May 31, 2022, https://www.forbes.com/sites/omkargodbole/2022/05/31/bitcoin-price-posts-biggest-daily-gain-since-early-march-what-next/?sh=5cbc152f4b56.
[160] Liao, Gordon Y. and John Caramichael, "Stablecoins: Growth Potential and Impact on Banking," Federal Reserve Bank, January 2022, https://www.federalreserve.gov/econres/ifdp/files/ifdp1334.pdf.

Stablecoins offer several solutions to the problems discussed above. Fixing value solves both the risks created by price instability and concerns regarding taxation. Stablecoins pegged to the US Dollar seem particularly useful for global commerce in dollar denominated assets. Thus, the dollar's position as the global reserve currency is one reason why stablecoins choose to peg to the U.S. dollar.

Stablecoins come with their own sets of problems. There are concerns regarding the asset match of what stablecoin issuers are doing with the fiat money they receive in exchange for the crypto money they create. Concerns regarding assets have been particularly acute for Tether, while some stablecoins, notably Terra, have collapsed altogether leaving holders with substantial losses.[161] [162] Concerns regarding run risk whereby in the face of trouble (real or perceived) stablecoin holders are incentivized to be the first to redeem at par before any asset valuation or liquidity problems are realized (Quarles 2021).[163] Other concerns exist regarding the impact of stablecoins on the broader banking system (Liao 2022).

Some have proposed improved regulation of stablecoins as a method to solve these problems (Massad, Jackson, Awry 2022).[164] Questions remain over national and international regulation of stablecoins, what their optimal relationship is to the banking system, and the overall stability of the structure of the asset (BIS 2019).[165] Whether stablecoins should be privately issued or publicly, potentially in the former of a central bank digital currency (CBDC) add another layer to this debate. Digital currency is regularly issued by banks (credit and debit cards), but most nations have so far only offered physical currency that is a direct liability of the central bank, what is commonly called cash. Over 100 nations are exploring issuing a CBDC, representing 95 percent of global GDP (Atlantic Council).[166] China in particular has leaned in to a CBDC piloting such a currency in circulation. Some have speculated that China's movement toward a

[161] Sigalos, MacKenzie, "Some investors got rich before a popular stablecoin imploded, erasing $60 billion in value," CNBC, May 29, 2022, https://www.cnbc.com/2022/05/29/who-got-rich-before-terra-stablecoin-collapsed.html#:~:text=In%20May%2C%20the%20collapse%20of,up%20before%20it%20all%20collapsed.
[162] Gibson, Liam, "After Terra, Luna crashes, regulators count cost of crypto," Aljazeera, May 20, 2022, https://www.aljazeera.com/economy/2022/5/20/after-terra-crash-investors-and-regulators-count-cost-of-crypto.
[163] Quarles, Randal K., "Parachute Pants and Central Bank Money," Federal Reserve Bank, June 28, 2021, https://www.federalreserve.gov/newsevents/speech/quarles20210628a.htm.
[164] Jackson, Howell E., Timothy G. Massad and Dan Awrey, "How We Can Regulate Stablecoins Now—Without Congressional Action," *The Brookings Institution*, August 2022, https://www.brookings.edu/wp-content/uploads/2022/08/WP76-Massad-et-al_v4.pdf.
[165] G7 Working Group on Stablecoins, "Investigating the impact of global stablecoins," Bank for International Settlements, October 2019, https://www.bis.org/cpmi/publ/d187.pdf.
[166] Atlantic Council, "Central Bank Digital Currency Tracker," Accessed October 19, 2022, https://www.atlanticcouncil.org/cbdctracker/.

CBDC is part of a broader push to replace the dollar.[167] Others have argued that China is responding more to internal pressure to bring payments back under government control after the unplanned migration from the banking system to Chinese tech firms AliPay and WeChat (Klein).[168]

Conclusion

The payment system has becoming an increasing policy tool for the United States government. The balance between using a payment system to promote economic growth and commerce and using the payment system as a tool to project political power is shifting toward the later. This is true both domestically and internationally for the United States.

The dollar's position as the world reserve currency and the U.S.'s unique position within the payment and settlement system provide America unique ability to project foreign policy through the payment system. That policy has increasingly been to use access to the payment system as a weapon, placing greater restrictions on unfriendly nations as a consequence for the policies. It has been more stick than carrot, although that may be a result of the current political climate.

Russia's invasion of Ukraine is a major escalation in how America responds with payments as a tool for foreign policy. As former White House National Security Advisor for Russia, Fiona Hill recently stated, "In the 21st century, these are economic and financial wars. We're all-in on the financial and economic side."[169] Greater international coordination among America, the European Union member states, Japan, and other allies has amplified the power of payments as a tool to inflict economic harm in response to military action.

In the longer run, China's alternative payment network and cryptocurrencies are both alternatives to the existing bank-centric, dollar denominated payment system. If either were to take off, they would reduce the ability of the United States to exercise political power through the payment system. However, both have substantial structural and

[167] Brainard, Leal, "Preparing for the Financial System of the Future," Federal Reserve Bank, February 18, 2022, https://www.federalreserve.gov/newsevents/speech/brainard20220218a.htm.
[168] Klein, Aaron, "China's payments u-turn: Government over technology," The Brookings Institution, November 29, 2022, https://www.brookings.edu/research/chinas-payments-u-turn-government-over-technology/.
[169] Reynolds, Maura, "Fiona Hill: 'Elon Musk Is Transmitting a Message for Putin,'" Politico, October 17, 2022, https://www.politico.com/news/magazine/2022/10/17/fiona-hill-putin-war-00061894.

operational issues that could preclude either or both from being a legitimate alternative to the current system. It is too soon to tell.

The more that America uses the payment lever for policy, the greater the incentives to develop alternative systems. This is true both domestically and internationally. Significant legal, economic, technological, and other challenges confront alternative systems. Payments are inherently economies of scale, displaying significant network effects. This can deter new entrants and make alternative systems more difficult. In addition, nations have incentives to keep their own currency with favorable status, including the value of seigniorage for state issued currency and the economic value and stability of their financial system.