

**THE DOLLAR DILEMMA: HEGEMONY, CONTROL,  
AND THE DOLLAR’S INTERNATIONAL ROLE**

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**ABSTRACT**

*The U.S. dollar serves both as the domestic currency of the United States and as the dominant international currency for trade, settlement, and reserve purposes. The dollar’s international status provides significant benefits for the United States, but one aspect of the global dollar system as it currently operates is inherently destabilizing: offshore entities, outside the ambit of U.S. supervision and regulation, routinely issue short-term dollar-denominated liabilities—“money claims”—in ways that make them vulnerable to runs and panics. I argue in this article that there are compelling reasons for U.S. monetary authorities to try to reassert control over this activity, but that there are practical limits to their ability to do so if the dollar is to maintain its role as the dominant international currency. The trade-offs involved in balancing dollar dominance against control and stability can be managed but not entirely resolved, creating a dilemma for U.S. monetary policy. This article provides a comprehensive analysis of this dilemma and assesses possible policy reforms in light of the tensions it creates.*

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## INTRODUCTION

THE U.S. dollar serves both as the domestic currency of the United States and as the dominant international currency for trade, settlement, and reserve purposes. The dollar’s international status provides significant benefits for the United States, but one aspect of the global dollar system as it currently operates is inherently destabilizing: offshore entities, outside the ambit of U.S. supervision and regulation, routinely issue short-term dollar-denominated

liabilities—“money-claims”<sup>1</sup>—in ways that make them vulnerable to runs and panics. I argue in this article that there are compelling reasons for U.S. monetary authorities to try to reassert control over this activity, but that there are practical limits to their ability to do so if the dollar is to maintain its role as the dominant international currency. The trade-offs involved in balancing dollar dominance against control and stability can be managed but not entirely resolved, creating a dilemma for U.S. monetary policy. This article provides a comprehensive analysis of this dilemma and assesses possible policy reforms in light of the tensions it creates.

Panics, defined as sudden, widespread withdrawals of deposits and functionally similar money claims from financial institutions, are incredibly economically damaging and socially corrosive events.<sup>2</sup> Preventing panics must be a top priority for U.S. policymakers. The principal way to prevent panics is to provide a government safety net through deposit guaranties and emergency lending facilities.<sup>3</sup> Ideally, the safety net should provide *ex ante* protection to all money claimants while requiring issuers of money claims to pay risk-adjusted deposit insurance premia and submit to extensive prudential regulation and supervision.<sup>4</sup> This approach maps fairly well onto the current system for U.S. banks.<sup>5</sup> A number of non-bank financial institutions, however, issue oceans of short-term debt that serves as a close functional substitute for bank deposits, but without automatic access to the government safety net, without paying deposit insurance fees, and without submitting to the same degree of prudential regulation and oversight that banks do.<sup>6</sup> This arrangement is unstable and lay

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<sup>1</sup> See *infra* note 34 and accompanying text.

<sup>2</sup> See *infra* Section II.A; see also Ben S. Bernanke, Remarks at the Federal Reserve Bank of Kansas City’s Annual Economic Symposium in Jackson Hole, Wyo.: Reflections on a Year of Crisis (Aug. 21, 2009) (defining panics as “a generalized run by providers of short-term funding to a set of financial institutions”).

<sup>3</sup> See *id.*

<sup>4</sup> See *id.*

<sup>5</sup> See *id.* As the ad hoc protection of uninsured depositors following the failure of Silicon Valley Bank demonstrates, it does not map perfectly onto the current system. See Press Release, Joint Statement by Treasury, Federal Reserve, and FDIC (Mar. 12, 2023), <https://www.federalreserve.gov/newsevents/pressreleases/monetary20230312b.htm>. In the current system, there is a positive, and perhaps high, probability that uninsured depositors will be bailed out, which not only vitiates any supposed “discipline” uninsured depositors could provide, but may also weaken efforts to mitigate moral hazard by other means. As I argue elsewhere, the preferred approach would be to remove the deposit insurance cap and to tighten regulation to address the moral hazard issues. See John Crawford, *Safe Money*, 104 MARQ.L. REV. 411, 439-48 (2020) (proposing the removal of the deposit insurance cap as one way to make money safe and addressing various moral hazard objections).

<sup>6</sup> See *infra* Section II.A.

at the core of the great financial crisis (GFC) of 2008. At the domestic level, the optimal reform approach seems clear: to restrict the issuance of short-term debt that serves the same *functional* role as bank deposits, and which creates the risk of runs and panics, to licensed banks.<sup>7</sup> With a stronger *ex ante* safety net,<sup>8</sup> as well as stronger *ex ante* risk constraints for regulated banks,<sup>9</sup> this approach would both address the risk of panics and ensure that deposit-issuing entities do not abuse the privilege by taking on imprudent levels of risk in their investments in the hope of greater profits, confident that they can push any excess losses onto the government. An optimal policy approach should combine government backstops and safety and soundness regulation with entry restrictions into dollar creation.

The situation takes on added complexity, however, in the international sphere. An essential part of the global financial system in its current form involves both the widespread *use* of the dollar by non-U.S. persons and entities, and the widespread *creation* of dollars by non-U.S. financial institutions.<sup>10</sup> These dollar-issuing entities are prone to runs and panics in ways that can affect the U.S. financial system just as much as domestic panics. It should be a policy priority to apply the same combination of public backstop, prudential regulation, and entry restrictions to the dollar in its international role as in its domestic role. There are a number of challenges to doing this, however, *particularly* if U.S. policymakers do not want to surrender the dollar's dominant position in the global financial system. This in turn prompts two questions: (i) whether U.S. policymakers *should* prioritize dollar dominance, and (ii) what effect different reform approaches focused on bolstering stability would have on dollar dominance.

On the first question, I evaluate a stream of scholarship from the realm of international economics on the role of the dollar as a hegemonic currency. The issues involved in understanding and assessing dollar hegemony are varied and complex, and a full treatment of them is sorely lacking in the legal literature. Preventing an erosion in dollar dominance creates tradeoffs not only in the pursuit of greater monetary control and stability, but for multiple other U.S. policy priorities,<sup>11</sup> and a more nuanced engagement with dollar hegemony—its

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<sup>7</sup> See *id.* Another way of stating the point is that we should treat entities issuing the functional equivalent of deposits the same way we treat entities legally entitled to issue deposits.

<sup>8</sup> See Crawford, *Safe Money*, *supra* note 5, at 442.

<sup>9</sup> *Id.*

<sup>10</sup> See *infra* Section II.B.

<sup>11</sup> Other areas where U.S. policy priorities and actions depend on and could potentially erode dollar dominance include efforts to monitor and enforce laws against money laundering and terrorist financing; the use of financial sanctions to punish or coerce foreign persons, organizations or countries; and efforts to persuade foreign authorities to conform to U.S.

causes, costs, benefits, and plausible alternatives—would enrich financial regulatory scholarship across a number of areas of inquiry. A key contribution of this article consists of providing a broad review and evaluation of the literature on dollar hegemony, albeit in a way that may raise as many questions as it answers for future legal scholarship.<sup>12</sup> I ultimately conclude that while dollar hegemony should not be given lexicographical priority by U.S. policymakers, neither should it be cast aside lightly: there should be a presumption in favor of maintaining the dollar's role.

The second question—what effect different reforms would have on the dollar's status—leads to the crux of the dilemma. I argue that the long-term viability of the dollar as the dominant international currency is likely to be inconsistent with complete U.S. control over dollar creation.<sup>13</sup> The issuance of dollar-denominated money claims by non-U.S. entities is likely a prerequisite for a strong international dollar system.<sup>14</sup> In addition, ensuring a supply of dollars adequate to lubricate the global financial system likely requires that private entities issuing dollars hold in their portfolios a significant quantity of foreign financial assets.<sup>15</sup> U.S. regulators are not well-placed to apply effective prudential regulation and supervision in the context of these offshore assets.<sup>16</sup> To be effective, they must rely on the cooperation of foreign regulators.<sup>17</sup> In short, U.S. authorities cannot recapture full monetary control over the dollar without undermining its status as the dominant international currency.

The optimal approach from a stability perspective would also *prevent* entities that are *not* licensed and supervised by either U.S. or comparable, cooperating regulators, from issuing dollar liabilities.<sup>18</sup> This will require the use of the same tools the U.S. currently employs in implementing sanctions against foreign individuals, entities, or nations for falling afoul of U.S. foreign policy or law enforcement priorities.<sup>19</sup> Heavy use of these tools, however, can irritate allies and motivate foes to take steps that ultimately undermine the dominance

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expectations and standards, including, for example, establishing uniform regulations for crypto assets and stablecoin payment arrangements. I am grateful to Howell Jackson for highlighting the degree to which the tensions highlighted in this paper are present in a host of other policy areas for the United States.

<sup>12</sup> It is hard to review the literature in this area without feeling a degree of ambivalence; the issues are difficult and important, and my own views are provisional.

<sup>13</sup> See *infra* Section III.

<sup>14</sup> See *id.*

<sup>15</sup> See *infra* notes 261-283 (discussing the “New Triffin Dilemma”).

<sup>16</sup> See *infra* Section III. U.S. banks have long been able to hold foreign assets, of course, but as the scale increases for such asset holdings, monetary control becomes more difficult.

<sup>17</sup> See *id.*

<sup>18</sup> See *id.*

<sup>19</sup> See *infra* Sections II.B. & III.

of the dollar.<sup>20</sup> Again, it is important to enlist the cooperation of foreign regulators to help suppress unlicensed dollar creation in their jurisdictions as much as possible, lessening the need for the United States to employ its punitive sanctions tools.<sup>21</sup>

This article proceeds as follows. Section I provides a brief description of the monetary concepts necessary to grasp the article's arguments. Although these will be familiar to experts in the field, they are not always intuitive to those who have not spent time pondering these issues. They include the "credit" nature of most money; the notion of money as the set of assets that make up one's transaction reserve; the private creation of money; public support for private money; the rise of so-called "shadow" money; the hierarchy of money claims; and the fiat nature of modern money.

Section II provides an account of the two monetary priorities that are the focus of this Article—financial stability and maintaining the dollar's international status. The arguments regarding financial stability have been articulated in detail in the post-GFC literature, and I try to summarize those arguments with clarity and concision. The dollar's international status is, as noted, understudied in the legal literature, and considerably less amenable to straightforward analysis and unambiguous policy prescriptions. While this article's focus is on stability, there are a variety of financial regulatory issues in the international sphere that interact in complex ways with the dollar's hegemonic status.<sup>22</sup> Not only in assessing reforms aimed at bolstering stability, but as a more general matter, too, it is worthwhile for legal scholars to drill down on different aspects of the dollar's international status, and to explore with more nuance the tradeoffs that are involved in pursuing various policy priorities. These aspects of the dollar's status include an understanding of the roles that the dollar plays internationally, the sources of its hegemonic status, the various costs and benefits (from a variety of different perspectives) of this status, and the plausibility and potential advantages and disadvantages of possible alternatives to dollar dominance. Section II provides a full treatment of all of these topics.

Section III evaluates potential reforms to bolster U.S. monetary control and financial stability in the context of the tradeoffs required to maintain the dollar's status. It argues that reform efforts must include both enabling and disabling elements, and that for both elements, approaches that emphasize cooperation with financial authorities from other advanced economies will

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<sup>20</sup> See *id.*

<sup>21</sup> See *infra* Section III.

<sup>22</sup> See *supra* note 11.

likely strike a better balance than plausible alternatives in managing those tradeoffs successfully. Section IV concludes.

## I. BACKGROUND: THE NATURE OF MONEY

This section provides a brief treatment of the background monetary concepts necessary to understand the Article's arguments about the tensions inherent in the current international dollar system, and to evaluate the proposed approaches to strengthening the current system. Readers familiar with these background concepts may wish to jump ahead to Section II.

### A. Money as Debt

Many people likely have an intuitive notion of money as a circulating physical token.<sup>23</sup> Physical currency—coins and bills—more or less jibes with this intuition.<sup>24</sup> The vast majority of money in our economy, however, consists of intangible debt claims on private financial institutions.<sup>25</sup>

The most obvious example of this is a bank checking account. In one sense, my checking account represents money the bank owes me—I can withdraw the money in my account in the form of physical cash if I desire. In another sense, however, the balance in my checking account just *is* money—I can use it directly to satisfy my obligations, through electronic transfers or checks. The system works *as if* others are willing to accept the bank's IOU in payment of my private obligations. If my friend owes me \$100, I cannot go into the grocery store and try to pay for my food by offering to transfer my friend's IOU to the store; I can, however, pay by “transferring” the *bank's* IOU (with a check or debit card) to the store.<sup>26</sup> This fact was likely more obvious in the nineteenth

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<sup>23</sup> This may be changing, of course, with younger generations of “digital natives.”

<sup>24</sup> Paper currency technically represents a liability of the Federal Reserve, but cannot be redeemed for anything else. See Bd. of Governors of the Fed. Rsr. Sys., *Credit and Liquidity Programs and the Balance Sheet* (Nov. 15, 2021), [https://www.federalreserve.gov/monetarypolicy/bst\\_frlabilities.htm](https://www.federalreserve.gov/monetarypolicy/bst_frlabilities.htm) (“The major items on the liability side of the Federal Reserve balance sheet [include] Federal Reserve notes (U.S. paper currency).”); see also *infra* Section I.G.

<sup>25</sup> See *infra* Section I.B. As explained in Section I.B, immediately below, while most money in our financial system is debt, it is *not* the case that all, or even most, debt is money. Only a particular type of debt issued by a particular type of institution constitutes “money” as the term is used in this Article.

<sup>26</sup> The actual financial plumbing is slightly more complex: bank deposits themselves are (likely) unassignable, and payments instead involve a series of sequential bilateral contractual adjustments. The end result can be understood as having the same effect, however,

century, before there was a national paper currency, when banks made loans by issuing paper notes promising to pay a certain amount of specie upon demand, and those notes circulated as money.<sup>27</sup>

## B. Money as Transaction Reserves

The checking account described above meets the classic textbook definition of money as something that serves as (i) a medium of exchange, (ii) a store of value, and (iii) a unit of account.<sup>28</sup> For purposes of analyzing financial stability, however, the best functional definition of money is the set of assets that people and businesses set aside to engage in near-term transactions and meet near-term obligations.<sup>29</sup> For individuals, these obligations may include rent or mortgage payments, grocery bills, and car payments. For businesses, they might include paying employees, suppliers, landlords, and so on. Media of exchange form a key part of this “transaction reserve” for most businesses and individuals—one can satisfy one’s payment obligations by transferring money directly from one’s checking account to a designated supplier of goods or services. In analyzing stability, however, the essential feature of transaction reserve assets is *not* that they can serve directly as a medium of exchange. Instead, two other features of bank deposits and functionally similar assets make them good candidates for transaction reserves, and lead businesses and accounting professionals to categorize them as “cash” or “cash equivalents.”<sup>30</sup>

First, transaction reserve assets must be liquid, which means that they must either be accepted for payment directly, or capable of being turned into the medium of exchange at negligible cost when payments are due. The most familiar example of a transaction reserve asset in the second category is the bank deposit account *without* check-writing privileges; rather than allowing depositors to transfer money directly to payees, the depositor has to withdraw

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particularly if the account-holders share the same bank: the bank used to owe the payor \$X; now it owes the payee \$X. I am grateful to Joseph Sommer for his insights on this point.

<sup>27</sup> See, e.g., GARY B. GORTON, MISUNDERSTANDING FINANCIAL CRISES 11-16 (2012) (describing the circulating bank notes of the Free Banking Era).

<sup>28</sup> See, e.g., N. GREGORY MANKIW, MACROECONOMICS 80-81 (7th ed. 2010).

<sup>29</sup> This maps fairly well onto the Federal Reserve’s one-time “M3” measure of the money supply, which it stopped reporting in 2006. See, e.g., Crawford, *Safe Money*, *supra* note 5, at 415 n.11. See also MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION 31-32 (2016) (providing a functional definition of money in terms of transaction reserves).

<sup>30</sup> See RICKS, *supra* note 29, at 29-49.



the money first. Nevertheless, those with a savings account are likely to think (correctly) of their balance not as an “investment” but as *money*.<sup>31</sup>

Second, the assets must be extremely stable in terms of the unit of account in which transactions are denominated—in the United States, the dollar. Obligations such as rent or payroll are usually fixed in nominal terms in the near future; people and businesses will typically set aside enough money to meet these near-term obligations and want to be sure that the money they set aside is adequate to do so.<sup>32</sup> Because virtually all transaction reserve assets other than physical currency represent a *debt* claim on a financial institution, in order for these debt claims to achieve nominal price stability there must be minimal risk of default. Furthermore, the debt claims must have short maturity, because rising interest rates can erode the value of long-term debt even if there is no risk of default.<sup>33</sup> Assets that meet all these criteria can be grouped together under the label “money-claim.”<sup>34</sup>

### C. Money Creation by Private Entities

Because most money in our economy consists of the credit, or debt, of private financial institutions, it is also the case that most money is *created* by private financial institutions.<sup>35</sup> When a bank makes a loan to a customer, it credits the customer’s account.<sup>36</sup> In doing so, it creates *new* money, with the

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<sup>31</sup> See *id.* at 45 (“Holders of cash equivalents usually think of these instruments, together with currency and checkable deposits, as precisely the resources they are *not* investing.”).

<sup>32</sup> See *id.* at 43 (“[I]n a world of sticky prices, agents should be expected to allocate transaction reserves to stable-price assets.”). Businesses, moreover, typically wish simultaneously to (i) ensure they have enough in their transaction reserves to meet their obligations, and (ii) minimize the resources diverted from productive investments into transaction reserves.

<sup>33</sup> See e.g., John Crawford, *Shining a Light on Shadow Money*, 69 VAND. L. REV. EN BANC 185, 193-94 (2016) (explaining why market interest rate moves have a large impact on the value of long-term debt claims but not short-term debt claims).

<sup>34</sup> See RICKS, *supra* note 29, at 17.

<sup>35</sup> See MONEY STOCK MEASURES, FED. RSRV. BANK OF ST. LOUIS (2023), <https://fred.stlouisfed.org/release/tables?rid=21&eid=1217588#snid=1217590> (showing that the money supply is several times larger than government-issued money, or the “monetary base”). This is a fact of modern money that likely has been true at least since bank accounts became common for the general public. See, e.g., JOHN MAYNARD KEYNES, *A Treatise on Money*, in THE COLLECTED WRITINGS OF JOHN MAYNARD KEYNES: VOL. V 27 (Austin Robinson & Donald Moggridge eds., 2012) (arguing that “current money is predominantly bank money”).

<sup>36</sup> See, e.g., Matt Levine, *The Crypto Story*, BLOOMBERG (Oct. 25, 2022), <https://www.bloomberg.com/features/2022-the-crypto-story/> (“If you have dollars, what you have is an entry in your bank’s database saying how many dollars you have. This entry is the dollars. The bank doesn’t have sacks of gold or a big box of paper currency that the database refers to. It just has the database.”).

stroke of a computer key.<sup>37</sup> This is in stark contrast to other types of loans or investments; for example, when a venture capital fund puts money into a start-up company, it can only lend or invest *pre-existing* dollars. To put it in accounting terms, when other entities and individuals make loans, it involves both a credit (of the borrower's account) and a debit (of the lender's account). When a bank makes a loan, it need not debit anything; instead, it credits the borrower's account on the liability side of its (the bank's) balance sheet, and simultaneously enters a credit on the asset side of its balance sheet, since the loan to the customer represents future (positive) cashflow for the bank. Indeed, modern capitalist economies rely on private entities—banks and shadow banks—to *create* the vast majority of their money.

#### D. Public-Private Hybridity

Despite the fact that most money in the economy is privately issued, there are two ways in which there is a public element to the creation and circulation of even privately issued money in the United States. First, the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC) underwrite much if not all of this private money. The FDIC insures bank deposit accounts in sums of up to \$250,000 per account, effectively giving them a public imprimatur.<sup>38</sup> The Federal Reserve provides public support by standing ready to lend to banks (and shadow banks) that face withdrawal requests in excess of their liquid reserves, and which are otherwise unable to borrow in the interbank or money markets.<sup>39</sup>

Second, public money typically underlies the *payment* system. Dollars sitting in a bank account represent a promise by the bank to pay the money on demand—either in cash or, more typically, by electronic transfer to the

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<sup>37</sup> It is common to claim (as this author has done in the past) that banks create money *ex nihilo*. Some observers have objected to this formulation, pointing out that what banks actually do is to “transform[] an illiquid asset (the borrower’s future ability to repay) into a liquid one (bank deposits); they would quickly be insolvent otherwise.” Pontus Rendahl & Lukas B. Freund, *Banks Do Not Create Money Out of Thin Air*, VOX (Dec. 14, 2019), <https://cepr.org/voxeu/columns/banks-do-not-create-money-out-thin-air>. This objection centers our attention on the fact that while banks do, indeed, create money, their power to do so is constrained by their need to remain solvent—indeed, ensuring they can meet this constraint is essential to monetary and financial stability, and lies at the core of bank regulation in the form of capital requirements and portfolio and activity restrictions.

<sup>38</sup> 12 U.S.C. § 1821(a)(1)(E) (2012). Again, in the current system, uninsured deposits may be seen as quasi-public, with a high probability, but no legal guarantee, of government support. *See supra* note 5.

<sup>39</sup> *See, e.g., The Discount Window*, FED. RSRV. BANK OF N.Y., <https://www.newyorkfed.org/aboutthefed/fedpoint/fed18.html>.

designated payee's account. In the latter case, the entire operation simply involves bookkeeping entries. If the payor and payee use the same bank, the transactions are straightforward: the bank will credit the payee's account and simultaneously debit the payor's account. If the payor and payee hold accounts at different banks, the payment between the banks then has to be "cleared": after netting out what may be a large number of gross payments being made in both directions between two banks, one bank will have to transfer funds to the other.<sup>40</sup> The interbank transfers typically occur by the crediting and debiting of the banks' reserve accounts at the Federal Reserve. Banks' reserve accounts constitute liabilities of the Federal Reserve, and are thus non-defaultable *public* money.<sup>41</sup> Indeed, Braun, Krampf, and Murau have described these central bank reserve accounts as "settlement money for commercial banks," and note that "[w]hile most of the monetary instruments used in economic transactions are the liabilities of *private* financial institutions, payment settlement between them . . . requires *public* money."<sup>42</sup>

Our monetary system can thus be understood as a hybrid between public and private money: money is overwhelmingly created by private financial institutions, but the government underwrites most of this money, and clearing payments between private firms ultimately relies on public money.<sup>43</sup>

### E. The Rise of Shadow Money

As noted above, most money in the economy is not physical currency, but short-term debt of financial institutions, with bank checking and deposit accounts as the paradigmatic examples. Towards the end of the twentieth century and the beginning of the twenty-first century, more and more of these money claims began to be issued by institutions outside the traditional banking system, and, therefore, outside the regulatory system that applies to commercial banks.<sup>44</sup> This is the so-called shadow banking system. Money claims in the shadow banking system comprise instruments that function like bank deposits, but that are treated differently for legal and regulatory purposes. Shadow banking instruments have been explored at great length in the literature since

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<sup>40</sup> For a superb account of the payments clearing process, see Nadav Orian Peer, *Money Creation and Bank Clearing*, 28 FORDHAM J. CORP. & FIN. L. 35 (2023).

<sup>41</sup> *Id.*; see also Benjamin Braun et al., *Financial Globalization as Positive Integration: Monetary Technocrats and the Eurodollar Market in the 1970s*, 28 REV. INT'L POL. ECON. 794 (2021).

<sup>42</sup> Braun et al., *supra* note 41.

<sup>43</sup> *Id.*

<sup>44</sup> This regulatory system is described at *infra* Section II.A.

the GFC, so I will not explore them in detail here.<sup>45</sup> The key point is that each type of shadow banking money claim—most prominently money market fund shares, “repo” loans, and certain types of commercial paper—involves a short-term debt liability issued not by a commercial bank, but by another type of financial institution not subject to bank regulation; and the claimants on the debt treat it as a transaction reserve asset.<sup>46</sup>

## F. The Hierarchy of Money Claims

While our money supply consists primarily of short-term debt, it is important to note that not all money claims are equal—particularly in times of stress. At least as far back as Keynes, economists have observed that there is a *hierarchy* of money claims.<sup>47</sup> At the top is “base money” —non-defaultable money issued directly by the Federal Reserve.<sup>48</sup> Right now, private citizens and businesses can hold this type of money in the form of physical currency. Only certain institutions—principally banks—can hold base money digitally, in the form of reserve accounts.<sup>49</sup> Base money sits at the top of the money hierarchy. Below that, in the U.S., lie bank deposits—much of it explicitly insured by the FDIC, and the rest with a high expectation of support from the Fed and FDIC if the bank faces a liquidity crisis or insolvency. Below that lie the various forms

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<sup>45</sup> See, e.g., RICKS, *supra* note 29, at 29-49.

<sup>46</sup> *Id.* at 39.

<sup>47</sup> See, e.g., STEFAN EICH, *THE CURRENCY OF POLITICS* 6 (2022) (“Even where the state has become entwined with private capital markets, the state’s money sits at the very top of the hierarchy of money, both domestically and internationally.”); *id.* at 152 (“Keynes turned next to ‘Bank Money’ in order to elaborate on the role of private credit in his theory of money. The result was a hierarchical pyramid of monies.”); see also Perry Mehrling, *The Inherent Hierarchy of Money*, in *SOCIAL FAIRNESS AND ECONOMICS: ECONOMIC ESSAYS IN THE SPIRIT OF DUNCAN FOLEY* (Lance Taylor et al. eds., 2012).

<sup>48</sup> As Steffen Murau explains,

At the top of the monetary pyramid . . . is a unit of account, e.g., . . . [the] dollar . . . Below this are a range of institutions issuing debt claims as inside money. In today’s world, the IOUs issued by the central bank are usually ranked higher than those of the commercial banking system, which in turn are ranked higher than those of the shadow banking system. Thus we can see the hierarchy with the various IOUs imply a promise to pay the higher-ranking form of money. The money form situated at the top is the final means of settling payment.

Steffen Murau, *Offshore Dollar Creation and the Emergence of the post-2008 International Monetary System* 13 (Inst. for Advanced Sustainability Stud., Potsdam, & Weatherhead Ctr. for Int’l Affs., Harv. Univ., Discussion Paper, 2018).

<sup>49</sup> See, e.g., Morgan Ricks et al., *FedAccounts: Digital Dollars*, 89 *GEO. WASH. L. REV.* 113, 116 n.10 (2021).

of “shadow money.”<sup>50</sup> In times of instability, those who hold claims lower down in the hierarchy desire to exchange them for claims higher up in the hierarchy, with direct claims on the Federal Reserve sitting at the top.<sup>51</sup>

As economist Perry Mehrling has explained, this means that a problem at one “layer” of the hierarchy can be “solved” by the layer immediately above it—but that only the central bank can address a full-blown systemic crisis:

In liquidity crises, everyone wants money and no one wants credit. Fortunately, what counts as money at one level in the system is merely credit for the level above. This means that higher levels of the system can generally solve the crisis of levels below them. Small crises can be solved by monetary expansion at the immediately higher level; large crises however may require involvement of the very highest levels. Just so, in the [GFC], the banking system initially tried to absorb the brunt of the crisis, but when the crisis proved too big the central banking system had to get involved.<sup>52</sup>

It will be important to remember this point about hierarchy when we explore the offshore dollar market, below.

### G. Fiat Money

As noted, at the top of the hierarchy described above sits base money—direct claims on the Federal Reserve. Base money is carried as a liability on the Fed’s balance sheet. But if base money is the debt of the Federal Reserve, what can the Fed use to satisfy that debt? At one time, the answer was gold.<sup>53</sup> Today, there is nothing more basic into which one can convert these Fed liabilities. This comes as a “vertiginous realization” to many; Adam Tooze notes that he’s “shocked year after year of smart college students by forcing them to face that reality.”<sup>54</sup> Indeed, Steffen Murau argues that “until the [twentieth] century, the majority of monetary theorists . . . believed it was not possible to decouple

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<sup>50</sup> See Murau, Offshore Dollar Creation, *supra* note 48, at 14.

<sup>51</sup> *Id.* at 15.

<sup>52</sup> Mehrling, *Inherent Hierarchy of Money*, *supra* note 47, at 11-12.

<sup>53</sup> See, e.g., Gary Richardson et al., *Roosevelt’s Gold Program*, FED. RSRV. HIST. (Nov. 22, 2013), <https://www.federalreservehistory.org/essays/roosevelts-gold-program> (“In 1913 the gold standard was built into the framework of the Federal Reserve. The law required the Federal Reserve to hold gold equal to [forty] percent of the value of the currency it issued (technically termed the Federal Reserve Note but colloquially called the dollar) and to convert those dollars into gold at a fixed price of \$20.67 per ounce of pure gold.”).

<sup>54</sup> Adam Tooze, *Chartbook #74: Crypto and the Politics of Money*, CHARTBOOK (Jan. 22, 2022), <https://adamtooze.com/2022/01/22/chartbook-74-crypto-and-the-politics-of-money/>.

monetary systems from a scarce commodity such as gold.”<sup>55</sup> At the same time, Murau points to a counterargument made as early as 1914 by Alfred Mitchell-Innes, who

postulates that we only need the highest money as an ‘idea’— as a ‘unit of account.’ ‘The eye,’ he argues, ‘has never seen, nor the hand touched a dollar. All that we can see or touch is a promise to pay or satisfy a debt due for an amount called a dollar.’<sup>56</sup>

Tooze, in his turn, claims that he is usually able to “reverse the flood of nihilism and skepticism” that follows on the realization that money is not “backed” by anything by persuading his students that while

[m]oney is not backed by ‘any one thing’[, i]t is far better than that. It is backed by ‘everything.’ What backs money is the entire gigantic apparatus of macrofinance. It is backed not just by ‘everything’ but by ‘everybody,’ or perhaps one should put it more precisely, by ‘everyone who is anyone.’ [One] can add that what really matters is that it is ‘backed by the one power that matters,’ i.e. the people with coercive power.<sup>57</sup>

The dollar has value because people have confidence they will be able to use it to purchase goods and services at a future date. Part of the reason for this confidence is that everyone *else* seems to have the same confidence. By itself, however, this “good” equilibrium is unstable; it can with great suddenness shift to a “bad” equilibrium in which there is a cascading loss of confidence. Something like this occurred, for example, in vast swaths of the “cryptocurrency” world in 2022.<sup>58</sup> The dollar, however, is fundamentally different from the cryptoworld’s attempts to create private fiat currencies, in that it has a *fiscal* anchor that is backed by the coercive power of the government. In line with this observation, Markus Brunnermeier and his coauthors write,

[e]conomists often attribute the failure of unbacked private currencies to the lack of a fiscal anchor. An unbacked, privately issued currency faces a dynamic instability problem: it may suddenly lose its transaction value if people believe that in the future, others will not accept it in exchange. This

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<sup>55</sup> Murau, Offshore Dollar Creation, *supra* note 48, at 9.

<sup>56</sup> *Id.* (citations omitted).

<sup>57</sup> Tooze, *Chartbook* #74, *supra* note 54.

<sup>58</sup> See, e.g., Levine, *supra* note 36 (describing the unraveling of the stablecoin TerraUSD, which was “backed by algorithmic conversion into \$1 worth of [a token with a floating value called] Luna,” until both went into a death spiral).

fundamental instability can lead to hyperinflations in which the currency unravels. A government, on the other hand, can guarantee the value of the currency through its ability to tax . . . [A] government can raise real resources through taxation and offer to purchase (even a small amount of) currency using those resources, putting a hard cap on the price level.<sup>59</sup>

Creating a stable and sustainable fiat currency, therefore, is likely something only the government is able to do.

## II. MONETARY POLICY PRIORITIES

Monetary authorities may legitimately pursue multiple goals, some of which may interact in complex ways, or even come into conflict with each other. Most famously, the Federal Reserve has a dual statutory mandate to pursue both full employment and stable prices.<sup>60</sup> Other things may also be important, however, both as stand-alone goals and as subsidiary goals to help achieve this statutory mandate. I focus on two: financial stability and maintaining the dollar's international role. There has been a rich treatment of the importance of stability among legal academics since the GFC; dollar hegemony, on the other hand, has received much less attention in the legal literature. In this section, I provide a brief account of the importance of and conditions required for stability, and then draw on a parallel stream of scholarship from the realm of international economics in order to analyze the dollar's hegemonic role. It is worth noting again here that a deeper exploration of the international roles of the dollar, the sources of its hegemonic status, and the costs and benefits of dollar dominance for different constituencies is vital not just for assessing various reform proposals to bolster stability, but for properly assessing a variety of other U.S. policy efforts, as well.<sup>61</sup> In short, while the focus here is on stability, a deeper engagement with the dollar's international status can enrich legal scholarship in a number of areas where the international dimension of the dollar system interacts with other policy goals.

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<sup>59</sup> Markus K. Brunnermeier et al., *The Digitalization of Money* 24 (Nat'l Bureau of Econ. Rsch., Working Paper No. 26300, 2019).

<sup>60</sup> 12 U.S.C. § 225a (2018).

<sup>61</sup> *See supra* note 11.

## A. Financial Stability

In terms of stability, relying on the short-term debt of private financial institutions for our money supply has an obvious drawback: these institutions are vulnerable to runs and panics. A bank must satisfy withdrawal or payment requests with its reserves, defined as either physical currency or balances in its account at the Federal Reserve. If withdrawal demands outstrip the banks' reserves, and the bank has trouble accessing other sources of funding, it can, in a "self-fulfilling prophecy," spark a run as everyone tries to get their money out of the bank.<sup>62</sup> This can lead to all sorts of profoundly damaging knock-on effects for the financial system as well as the real economy, for reasons explored at length in the post-GFC literature.<sup>63</sup>

Happily, there is a solution to this problem: as implied by Perry Mehrling's insights about money's hierarchical aspects, quoted above,<sup>64</sup> the government can provide a safety net for private banks. As noted, this safety net takes two principal forms in the U.S.: first, the FDIC insures deposits in amounts up to \$250,000 per account, limiting the incentive to run even for people who fear their bank may be insolvent. Second, the Federal Reserve can provide emergency loans to banks that are facing a liquidity squeeze and having trouble borrowing the necessary funds in the interbank market.

Unhappily, however, this safety net can create problems of its own, in the form of moral hazard. Banks, enjoying the considerable benefits of government backing, and free from much of the sort of discipline creditors exercise on

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<sup>62</sup> See RICKS, *supra* note 29, at 62 (describing how Robert Merton, who invented the term "self-fulfilling prophecy," used the bank run as his paradigmatic example).

<sup>63</sup> See, e.g., Crawford, *Safe Money*, *supra* note 5, at 425-31. It is noteworthy that throughout U.S. history, the most severe economic contractions tend to follow on financial panics, and major panics are usually followed by severe economic contractions. See, e.g., Gary Richardson & Tim Sablik, *Banking Panics of the Gilded Age*, FED. RSRV. HIST. (2015), <https://www.federalreservehistory.org/essays/banking-panics-of-the-gilded-age> ("The Panic of 1873 was blamed for setting off the economic depression that lasted from 1873 to 1879. This period was called the Great Depression, until the even greater depression of 1893"—which followed on the Panic of 1893, "one of the most severe financial crises in the history of the United States"—"received that label, which it held until the even greater contraction in the 1930s—now known as the Great Depression."); Jon R. Moen & Ellis W. Tallman, *The Panic of 1907*, FED. RSRV. HIST. (Dec. 4, 2015), <https://www.federalreservehistory.org/essays/panic-of-1907> ("The Panic of 1907 was the first worldwide financial crisis of the twentieth century. It transformed a recession into a contraction surpassed in severity only by the Great Depression."); MILTON FRIEDMAN & ANNA J. SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867-1960* (1963) (attributing the Great Depression of the 1930s to the contraction in the money supply that resulted from widespread runs on the banking system).

<sup>64</sup> *Supra* note 52 and accompanying text.



normal businesses, may have an incentive to “gamble with house money,” particularly in scenarios where the bank’s equity cushion is depleted.<sup>65</sup> This can increase the likelihood of losses, which would be borne by the government—a situation that Joseph Stiglitz and others have described as the “privatizing of gains and the socializing of losses.”<sup>66</sup> In the traditional banking sector, these problems are mitigated by prudential regulation. Among other things, banks must pay (somewhat) risk-adjusted deposit insurance premia,<sup>67</sup> as well as submit to capital requirements,<sup>68</sup> portfolio and activity restrictions,<sup>69</sup> and intrusive supervision,<sup>70</sup> in order to protect the government from excessive bailout costs, and society from the negative economic consequences that may follow if banks throw good money after bad projects in a “chase for yield.”<sup>71</sup>

Shadow banks create the same fundamental risk of runs and panics, but do not enjoy automatic access to the safety net like banks do. The current *de facto* approach to dealing with the shadow banking system’s threat to stability, however, is for the Fed, at its discretion, to step in as lender of last resort to the entire financial system—not just to traditional banks.<sup>72</sup> When “depositors” at shadow banks—such as those who lend in overnight repo transactions—“run” on the bank by refusing to roll over their loans, the Fed may lend to the illiquid shadow banks, allowing them to cash out their private “depositors” and replace the lost funding with loans from the Fed. Alternatively, the Fed may

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<sup>65</sup> See, e.g., John Crawford, *Resolution Triggers for Systemically Important Financial Institutions*, 97 NEB. L. REV. 65, 87-93 (2018) (describing the theory of “gambling for resurrection” and the savings and loan crisis of the 1980s as an example of this dynamic).

<sup>66</sup> Joseph E. Stiglitz, *Obama’s Ersatz Capitalism*, N.Y. TIMES (Mar. 31, 2009), <https://www.nytimes.com/2009/04/01/opinion/01stiglitz.html>.

<sup>67</sup> See, e.g., MICHAEL S. BARR ET AL., FINANCIAL REGULATION: LAW AND POLICY 258-67 (3d ed. 2021).

<sup>68</sup> *Id.* At 329-44.

<sup>69</sup> *Id.* At 193-249.

<sup>70</sup> *Id.* At 936-60; see also Lev Menand, *Why Supervise Banks? The Foundations of the American Monetary Settlement*, 74 VAND. L. REV. 951 (2021) (providing a historical account and conceptual justification for the discretionary authority of bank supervisors).

<sup>71</sup> See Crawford, *Resolution Triggers*, *supra* note 65, at 87-93.

<sup>72</sup> See, e.g., Lev Menand, *The Federal Reserve and the 2020 Economic and Financial Crisis*, 26 STAN. J.L. BUS. & FIN. 295, 298 (2021) (describing how the Fed, in response to the market disruptions that accompanied the onset of the COVID-19 pandemic in early 2020, “lent over \$1 trillion to nonbank financial institutions in less than a month”). See also Sriya Anbil et al., *What Happened in Money Markets in September 2019?*, FEDS NOTES (Feb. 27, 2020), <https://www.federalreserve.gov/econres/notes/feds-notes/what-happened-in-money-markets-in-september-2019-20200227.html> (describing the Fed’s emergency lending operations in September 2019 to calm overnight repo operations).

simply buy outright the assets that had served as collateral for the overnight repo positions.<sup>73</sup>

Shadow banks, however, do *not* submit to the same set of prudential rules and oversight that commercial banks do. The shadow banking system thus operates with most of the advantages that money creation underwritten by a government backstop creates, but without all of the mitigants to moral hazard that apply to the traditional banking sector.

This arrangement does not represent an optimal policy equilibrium. Weaker rules and oversight increase the likelihood, *ceteris paribus*, that shadow banks will require support. The manifest injustice of the resulting privatization of gains and socialization of losses can, in turn, lead to popular pressure on policymakers *not* to intervene in a widespread run on shadow banks.<sup>74</sup> Because such interventions—unlike deposit insurance—are discretionary, it is possible to imagine the Fed under certain scenarios yielding to such political pressure, and allowing a panic to run its course, or at least to hesitate to act before there is blood on the tracks.<sup>75</sup> For reasons that have been explored at length in the post-GFC literature, this could lead to an economic catastrophe and prolonged depression along the lines of what the United States and the world underwent in the 1930s.<sup>76</sup> On the other hand, the status quo of shadow bank bailouts invites further inefficient allocation of resources; creates opaque, unjustifiable government subsidies for shadow banks; and can undermine popular trust in key social and governmental institutions.<sup>77</sup>

A far better approach to this problem would be to restrict entry into the money-creating business to those entities that are licensed by the government, with terms substantially similar to what comes with a commercial bank license: automatic access to the safety net; full prudential regulation and supervision;

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<sup>73</sup> See, e.g., Menand, *The Federal Reserve*, *supra* note 72, at 297 (noting that when the Fed “went to ‘war’” in 2020, it went beyond lending and “purchased more than \$2 trillion of financial assets”).

<sup>74</sup> Popular pressure against bailouts was an important part of the dynamics that led to the bankruptcy declaration of Lehman Brothers in September 2008. See, e.g., James B. Stewart, *Eight Days: The Battle To Save the American Financial System*, *NEW YORKER*, Sept. 21, 2009, at 60 (Leading up to the “Lehman weekend,” “[p]ublic criticism of [Secretary of the Treasury Hank] Paulson and [Chairman of the Federal Reserve Ben] Bernanke was scathing. The bailouts [of Fannie Mae and Freddie Mac] had brought into rare alignment the Republican right wing, averse to any tampering with the free market, and the Democratic left, outraged by the government rescue of Wall Street’s overpaid elite.”).

<sup>75</sup> *Id.*

<sup>76</sup> See *supra* note 63.

<sup>77</sup> See, e.g., Crawford, *Safe Money*, *supra* note 5, at 429-31.

premiums for deposit insurance; and a special resolution process in the event of failure.<sup>78</sup>

There are several possible approaches to achieving this that may be practicable at the national level. Issuing money claims without a bank charter could be prohibited.<sup>79</sup> Alternatively (if equivalently), short-term debt claims issued by non-banks could be taxed at a rate that would make their issuance economically unattractive.<sup>80</sup> To the degree that it is too hard politically to eliminate certain types of non-bank money claims, a second-best approach would apply tighter prudential regulation to these instruments, placing them on a more equal footing with banks.<sup>81</sup> As a final, second-best approach to suppressing shadow banking, some scholars have proposed regulatory moves or reforms that may, as a side effect, “crowd out” the money claims issued by shadow banks.<sup>82</sup> For example, if not just banks, but individuals and other businesses could bank directly with the Fed, enjoying the non-defaultability of base money and the same interest the Fed pays on bank reserve accounts, it could make shadow-banking alternatives unattractive by comparison, and naturally shrink the market without any direct prohibition or tax.<sup>83</sup>

A key motivation of this article is that while these are all plausible solutions in the national context, applying them in the international context would likely not be as straightforward, and reform efforts are likelier to bring with them negative unintended consequences.

## B. Maintaining the Dollar’s International Status

This section argues that another policy priority for U.S. monetary authorities should be to avoid steps that undermine the dollar’s status as the

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<sup>78</sup> See *supra* notes 67-70.

<sup>79</sup> See, e.g., RICKS, *supra* note 29, at 243-45 (proposing a statute prohibiting “unauthorized banking”).

<sup>80</sup> See, e.g., John H. Cochrane, *Toward a Run-free Financial System*, in *ACROSS THE GREAT DIVIDE: NEW PERSPECTIVES ON THE FINANCIAL CRISIS* 197, 217 (Martin Neil Baily & John B. Taylor eds., 2014) (proposing a five percent tax on all non-deposit, short-term debt issued by financial institutions).

<sup>81</sup> For example, some have proposed more stringent capital requirements for money market mutual funds. See, e.g., Samuel G. Hanson et al., *An Evaluation of Money Market Fund Reform Proposals*, 63 *IMF ECON. REV.* 984, 986 (2015) (“For a well-diversified portfolio, we estimate that MMFs should hold a capital buffer of 3% to 4% against unsecured paper issued by global financial institutions, the primary asset held by MMFs. For more concentrated portfolios, we estimate that the amount of capital should be considerably higher.”).

<sup>82</sup> See Robin Greenwood et al., *A Comparative-Advantage Approach to Government Debt Maturity*, 70 *J. FIN.* 1683, 1709 (2015).

<sup>83</sup> See generally Ricks et al., *supra* note 49.

dominant international currency. The arguments that there are net benefits to maintaining this role are more complex and, in my view, less compelling than in the case of panic prevention. I nevertheless conclude that there *are* net benefits to the dollar's role that should not be taken for granted nor carelessly surrendered. The complexity of the issues and the fact that it has largely been neglected in the legal literature demand a more detailed analysis, which this section aims to provide. It provides an account of the dollar's international roles; considers possible explanations for why it maintains hegemony; assesses potential costs and benefits of dollar dominance; and evaluates the plausibility, advantages, and disadvantages of possible alternatives to dollar dominance in the international monetary system.

*1. The Dollar as an International Currency: Functions, Fed Support, and Offshore Shadows*

The dollar serves as money not just in the United States but around the world. As a medium of exchange, it is the most broadly used settlement currency for foreign trade in the world.<sup>84</sup> It is widely used as the unit of account in which commodities such as oil are quoted, as well as for transnational contracts of various sorts.<sup>85</sup> And as a store of value, it predominates as the foreign currency of choice for investments and transaction reserve assets among international businesses and central banks.<sup>86</sup>

For purposes of stability however, our concern is with one aspect of the offshore dollar market: private foreign financial institutions that *issue* dollar-denominated money claims and are thereby vulnerable to runs on those claims. (This is also commonly called the “eurodollar” market.)<sup>87</sup> These entities lie outside the *legal* jurisdiction of the United States but nevertheless *create* dollars by (for example) crediting borrowers' accounts when they make loans.<sup>88</sup> In

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<sup>84</sup> See, e.g., Carol Bertaut et al., *The International Role of the U.S. Dollar*, FEDS NOTES (Oct. 6, 2021), <https://www.federalreserve.gov/econres/notes/feds-notes/the-international-role-of-the-u-s-dollar-20211006.html>.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> For a good history of the eurodollar market, see GARY BURN, *THE RE-EMERGENCE OF GLOBAL FINANCE* (2006); see also Menand, *The Federal Reserve*, *supra* note 72, at 312 (“Eurodollars—which have nothing to do with euros, the currency—are short-term debt denominated in dollars.”).

<sup>88</sup> There was good deal of debate in earlier decades of the eurodollar market over whether it involved simply the recirculation of dollars, without expanding the overall quantity of dollars, or if it acted just as American banks do in augmenting the dollar supply. Milton Friedman was among the earliest to see that eurodollar issuers were just like U.S. banks,

short, our primary concern is not with dollar *usage*, but with dollar *issuance* and *creation* by offshore entities.

How did this state of affairs arise? The offshore dollar market grew up in a regulatory lacuna.<sup>89</sup> As Benjamin Braun and his co-authors argue, foreign central banks and regulators in the 1960s and 1970s both declined to impose regulations on eurodollars equivalent to regulations of their domestic money markets and actively *supported* the eurodollar market.<sup>90</sup> Among other measures, central banks made it clear that they stood ready to provide liquidity support to eurodollar-issuing banks in their jurisdiction in the event those banks faced a dollar liquidity squeeze.<sup>91</sup> To understand the nature and the limits of this liquidity support in today's global financial system, it is important to refer back to the hierarchy of dollar issuers described above in Section I.F. When people “run” out of one type of money claim due to concerns about the solvency of its issuer, they generally try to “climb” the hierarchy to a safer type of dollar claim, with “base money,” issued by the Federal Reserve itself, sitting at the top. So while private banks outside the United States can engage in fractional reserve banking, augmenting the world supply of dollars, their ability to do so rests on a promise to redeem dollar deposits for a debt instrument higher up in the hierarchy—and the whole structure depends on ultimate convertibility into *base* money.<sup>92</sup> Foreign central banks can manufacture base money in their *own* domestic currency, but only the Federal Reserve can manufacture dollar-denominated base money. Foreign central banks, then, in order to lend to banks in their jurisdiction facing a dollar squeeze, traditionally either loaned pre-existing dollar reserves, or tried to purchase dollars in world currency markets. By the time of the GFC, however, offshore dollar markets were too large by an order of magnitude or more for the relevant foreign central banks to be able rely on these approaches in order to serve as lenders of last resort to the dollar issuers in their jurisdiction in the event of a full-blown panic.<sup>93</sup>

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engaged in fractional reserve banking and augmenting the dollar supply. Milton Friedman, *The Eurodollar Market: Some First Principles*, FED. RSRV. BANK OF ST. LOUIS REV. 16, 18 (1971).

<sup>89</sup> The eurodollar market famously began in the United Kingdom in the 1950s and grew in the 1960s as New York banks saw it as a way to avoid the more stringent bank regulations of the United States, and opened branches in London. *Id.* At 18-29. The eurodollars issued in London during this era fell into a sort of regulatory gap, avoiding regulations that applied to UK banks as well as U.S. banks.

<sup>90</sup> Braun et al., *supra* note 41, at 1-3, 8-12.

<sup>91</sup> *Id.* At 5-10 (noting that in addition to liquidity support, central banks in this era also placed large amounts of their own dollar reserves in their domestic banks rather than in U.S. Treasuries).

<sup>92</sup> See *supra* notes 48-49 and accompanying text.

<sup>93</sup> For context, as Adam Tooze explained in his opus *Crashed*,

Runs on offshore dollar issuers are not just a problem for the respective foreign monetary authorities, however; they are a huge problem for the United States. If offshore dollar issuers face runs, they can be forced to engage in fire sales of their dollar-denominated assets, which would have the same vicious knock-on effects on the U.S. financial system and economy as fire sales by domestic U.S. banks.<sup>94</sup> In a sense, the system that had evolved by the time of the GFC inverted the famous line by John Connally, Nixon's Secretary of the

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In 2007 Germany's exporters earned a trade surplus with the United States of roughly \$5 billion per month. According to calculations by economists at Bank of International Settlements, what the European banks needed was not \$5 billion, or even \$10 billion. Prior to the crisis they had funded their dollar operations with c. \$1 trillion in commitments from [U.S.] money market funds. On top of that they had borrowed \$432 billion in the interbank market, \$315 billion on the foreign exchange swap markets and \$386 billion in short-term funding from those monetary authorities that were managing dollar cash pools. In total this added to more than \$2 trillion. The precise figure depended on how much of Europe's gigantic bank balance sheet needed to be refinanced and how quickly.

ADAM TOOZE, *CRASHED: HOW A DECADE OF FINANCIAL CRISES CHANGED THE WORLD* 204 (2018) [hereinafter *TOOZE, CRASHED*].

Meanwhile, the value of *all* central bank reserves in the euro system—including but not limited to dollar-denominated reserves—was less than € 400 billion in 2008. See Livia Chitu et al., *Trends in Central Banks' Foreign Currency Reserves and the Case of the ECB*, *EUR. CENT. BANK ECON. BULL.* (July 2019), [https://www.ecb.europa.eu/pub/economic-bulletin/articles/2019/html/ecb.ebart201907\\_01~c2ae75e217.en.html](https://www.ecb.europa.eu/pub/economic-bulletin/articles/2019/html/ecb.ebart201907_01~c2ae75e217.en.html) (providing historical statistics on official reserve assets of the ECB and Eurosystem in Chart 2); *Euro Dollar Exchange Rate (EUR USD) – Historical Chart*, *MACROTRENDS*, <https://www.macrotrends.net/2548/euro-dollar-exchange-rate-historical-chart> (providing month-by-month data on the euro-dollar exchange rate for the past twenty-five years).

As a final point, even if foreign central banks wanted to liquidate their dollar holdings in order to support the dollar-claim issuers in their jurisdiction, doing so would likely be self-defeating as a way to calm a full-fledged panic in the offshore dollar markets. Much of the official dollar reserves are held in the form of U.S. Treasuries; as we saw with the onset of the COVID-19 pandemic, widespread liquidation of Treasuries by central banks can exacerbate market disruptions. See, e.g., Jordan Barone et al., *The Global Dash for Cash in March 2020*, *LIBERTY ST. ECONS., FED. RSRV. BANK OF N.Y.* (July 12, 2022), <https://libertystreeteconomics.newyorkfed.org/2022/07/the-global-dash-for-cash-in-march-2020/>.

<sup>94</sup> For an account of these negative effects, see, e.g., Anil K. Kashyap et al., *Rethinking Capital Regulation*, *FED. RSRV. BANK OF KAN. CITY*, 431, 440-42 (2008) <https://scholar.harvard.edu/files/stein/files/frb-kansas-2008.pdf> (describing the negative externalities of financial institution “fire sales”). See also Ben S. Bernanke, *The Real Effects of Disrupted Credit: Evidence from the Global Financial Crisis*, *BROOKINGS PAPERS ON ECON. ACTIVITY* 255, 256-78 (Sept. 13, 2018) (describing the devastating effects on the real economy that follow on a spike in interest rates from a “panic crunch” in funding).

Treasury, who told European finance ministers in 1971 that the dollar was “our currency, but your problem.”<sup>95</sup> Now, from the U.S. perspective, the dollar is “your currency, but our problem.”

Adam Tooze describes both the risk of offshore dollar runs on the United States during the GFC and the Fed’s response to it:

If the Fed did not act, what threatened was a transatlantic balance sheet avalanche, with the Europeans running down their lending in the United States and selling off their dollar portfolios in a dangerous fire sale. It was to hold those portfolios of dollar-denominated assets in place that from the end of 2007 the Fed began to provide dollar liquidity in unprecedented abundance not only to the American but to the entire global financial system, and above all to Europe. In 2008 that flow of dollars grew to such proportions that it rendered any effort to write a separate history of the American and European crises anachronistic and profoundly misleading.<sup>96</sup>

The Fed thus stepped in to become the global lender of last resort in both onshore and offshore dollar markets. Some offshore dollar issuers had U.S. affiliates that could borrow in one of the Fed’s emergency liquidity facilities for private shadow banks that it set up in 2007 and 2008.<sup>97</sup> Eventually, however, the Fed revived a tool that had first been established and used in the 1960s, but for (mostly) different purposes and in much more modest quantities: central bank swap lines.<sup>98</sup>

*Central Bank Swap Lines.* Economists at the Federal Reserve Bank of New York explain that the central bank swap lines

involved two transactions. At initiation, when a foreign central bank drew on its swap line, it sold a specified quantity of its

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<sup>95</sup> Clive Crook, *When the Buck Stops*, ATLANTIC (Apr. 8, 2008), <https://www.theatlantic.com/business/archive/2008/04/when-the-buck-stops/8526/>.

<sup>96</sup> TOOZE, CRASHED, *supra* note 93, at 206.

<sup>97</sup> For a good account of the Fed’s expanded lending programs—and the legal bases for such programs—during the GFC, see DAVIS POLK & WARDWELL LLP, FINANCIAL CRISIS MANUAL: A GUIDE TO THE LAWS, REGULATIONS AND CONTRACTS OF THE FINANCIAL CRISIS 18-41 (2009).

<sup>98</sup> See, e.g., Colleen Baker, *The Federal Reserve’s Use of International Swap Lines*, 55 ARIZ. L. REV. 603, 618-35 (2013) (describing the currency swap lines and their legal bases). See also Robert McCauley & Catherine Schenk, *Central Bank Swaps Then and Now: Swaps and Dollar Liquidity in the 1960s*, (BIS Working Paper No. 851, 2020), <https://www.bis.org/publ/work851.pdf> (describing how the usage of swap lines going back to the 1960s was more varied than conventional wisdom had held).

currency to the Fed in exchange for dollars at the prevailing market exchange rate. At the same time, the Fed and the foreign central bank entered into an agreement that obligated the foreign central bank to buy back its currency at a future date at the same exchange rate.<sup>99</sup>

The foreign central bank would lend the dollars to financial institutions in its jurisdiction that were facing runs on their dollar liabilities, preventing institutional failure and default, as well as dollar-denominated asset fire sales, with all their vicious knock-on effects.<sup>100</sup> At the end of the swap, the Fed would return the foreign currency without interest, while the foreign central bank would repay the dollar loan in addition to “an amount of interest on the dollars borrowed that was equal to the amount the central bank earned on its dollar lending operations.”<sup>101</sup> Though it did not attract nearly as much popular attention in the United States as the bailouts of Bear Stearns, Fannie Mae, or AIG, these swap lines were among the central tools the Fed employed in fighting the crisis, with usage peaking in late 2008 at almost \$600 billion.<sup>102</sup> After several years of low or no usage, the swap lines again took center stage in the Fed’s response to the COVID-related market disruptions in 2020, with usage peaking at almost \$450 billion in May and June of that year.<sup>103</sup> The Fed has standing swap arrangements set up with the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, and the Swiss National Bank.<sup>104</sup>

Through these swap lines, the Fed is effectively providing a safety net for the entire global dollar financial system.<sup>105</sup> Vast amounts of offshore dollar creation benefit from the Fed’s extension of this key safety-net tool, but the same challenges apply here as in the context of domestic shadow banking: moral hazard, the risk of inefficient capital allocation, and the potential equity

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<sup>99</sup> Michael J. Fleming & Nicholas J. Klagge, *The Federal Reserve’s Foreign Exchange Swap Lines*, 16 FED. RSRV. BANK OF N.Y. CURRENT ISSUES IN ECONS. & FIN., at 2 (2010), [https://www.newyorkfed.org/medialibrary/media/research/current\\_issues/ci16-4.pdf](https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci16-4.pdf).

<sup>100</sup> See Kashyap et al., *supra* note 94.

<sup>101</sup> Fleming & Klagge, *supra* note 99.

<sup>102</sup> See *Assets: Central Bank Liquidity Swaps: Central Bank Liquidity Swaps: Week Average*, FED. RSRV. ECON. DATA, Chart, [https://fred.stlouisfed.org/series/WCBLSA\\_](https://fred.stlouisfed.org/series/WCBLSA_).

<sup>103</sup> See *id.*

<sup>104</sup> See *Central Bank Swap Arrangements*, FED. RSRV. BANK OF N.Y., <https://www.newyorkfed.org/markets/international-market-operations/central-bank-swap-arrangements>.

<sup>105</sup> Steffen Murau has argued persuasively that the current international monetary system is organized around private dollar creation, onshore and offshore, combined with the public backstop provided by the Fed’s swap lines with other central banks. Murau, *Offshore Dollar Creation*, *supra* note 48, at 6-34.



and legitimacy issues that arise from the privatization of gains and socialization of losses.

*Offshore shadows.* There is one other aspect of the world dollar system that mirrors the domestic landscape described above. Bank deposits are not the only dollar-denominated money claims issued by offshore entities; the offshore dollar market has a shadow banking element, as well. Indeed, many of the shadow banking entities at the heart of the GFC were part of the offshore dollar market: the first widespread runs occurred in 2007 on asset-backed commercial paper (ABCP) issued by special purpose vehicles organized for the most part in offshore locales such as the Cayman Islands.<sup>106</sup> Similarly, offshore entities can issue dollar-denominated money claims in the form of repo or money market fund shares.<sup>107</sup>

Perhaps the most important “shadow” instrument in the offshore dollar market, however, is the foreign exchange swap (“FX swap”).<sup>108</sup> It is worth pausing to explore the mechanics of this instrument, as it is of enormous importance, and its “moneyiness” may not be immediately obvious.<sup>109</sup>

In an FX swap, parties exchange a fixed sum of one currency for an equivalent sum of a different currency, with an agreement to trade back at a fixed future date.<sup>110</sup> (These are structurally like the central bank swap lines discussed above but between private parties.) FX and currency swaps are perhaps best known as a way for companies engaged in cross-border operations

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<sup>106</sup> See Daniel M. Covitz et al., *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market* 2-28 (Fed. Rsrv. Fin. & Econ. Discussion Series, Working Paper No. 2009-36, 2009), <https://www.federalreserve.gov/pubs/feds/2009/200936/200936pap.pdf>; Daniel Haberly & Dariusz Wójcik, *Culprits or Bystanders? Offshore Jurisdiction and the Global Financial Crisis*, 3 J. FIN. REG. 233, 233-36 (2017) (finding that the vast majority of ABCP issuance at the outset of the GFC occurred in the Cayman Islands).

<sup>107</sup> See, e.g., Marco Cipriani & Gabriele La Spada, *Preemptive Runs and the Offshore U.S. Dollar Money Market Funds Industry*, FED. RSRV. BANK OF N.Y. (Nov. 22, 2021), <https://libertystreeteconomics.newyorkfed.org/2021/11/preemptive-runs-and-the-offshore-u-s-dollar-money-market-funds-industry/> (“Offshore USD MMFs are open-end funds that invest in USD-denominated money market instruments and are domiciled in the European Union, mostly in Ireland and Luxembourg.”).

<sup>108</sup> The foreign exchange swap is distinguished from the currency exchange swap by maturity; the foreign exchange swap matures within a year, and the currency swap has a longer maturity. The shorter-term instrument provides money-market funding; the longer-term instrument provides capital-market funding. See Claudio Borio et al., *FX Swaps and Forwards: Missing Global Debt?*, BIS Q. REV. 37, 38 (2017).

<sup>109</sup> See generally *id.*; Perry Mehrling, *Essential Hybridity: A Money View of FX*, 41 J. COMP. ECON. 355, 356 (2013).

<sup>110</sup> See Borio et al., *supra* note 108, at 38.

to manage currency risk.<sup>111</sup> How, then, could an entity borrowing dollars in an FX swap be understood as a shadow bank? It is perhaps easiest to understand by comparing the FX swap to a repo loan. Repo involves a “depositor”—say, a money market fund—parking its money for a short period of time with a large financial institution, and receiving collateral in the form of a “safe” long-term asset, such as a Treasury bond.<sup>112</sup> If the repo is overnight, the transaction can be unwound the next day, with the “depositor” receiving its money back, along with a bit of interest. The transactions are often “rolled over” from day to day, though. Notice how closely this approximates a bank deposit. The depositor “parks” her money at the bank, and each day can choose to “unwind” the transaction (by withdrawing) or allow it to roll over. The financial institution that “borrows” in the repo transaction is the equivalent of a bank, and it augments the (shadow) money supply when it engages in these transactions.<sup>113</sup>

<sup>111</sup> See, e.g., Troy Segal, *Hedging Risk with Currency Swaps*, INVESTOPEDIA, <https://www.investopedia.com/articles/forex/11/hedging-with-currency-swaps.asp> (last updated Dec. 31, 2021).

<sup>112</sup> For a description of repo loans, see Tobias Adrian & Hyun Song Shin, *The Shadow Banking System: Implications for Financial Regulation*, FED. RSRV. BANK OF N.Y., Staff Report No. 382, at 8 (2009), [http://www.newyorkfed.org/research/staff\\_reports/sr382.pdf](http://www.newyorkfed.org/research/staff_reports/sr382.pdf).

<sup>113</sup> In order to understand why this augments the money supply, it is useful to recall that repo is, for the “lender” (i.e., the “depositor”), a close substitute for the bank deposit. The traditional parable told in introductory economics classes for how banks create money via fractional reserve lending involves something like a farmer bringing \$100 to deposit at the bank, and the bank lending out, say, \$90 of that deposit to a factory owner. The factory owner now has \$90, but the farmer still has \$100 in her account: what used to be \$100 worth of money is now \$190 worth of money. (This works so long as the factory owner can repay his loan.) See, e.g., *Banking 3: Fractional Reserve Banking*, KHAN ACADEMY (instructional video), <https://www.khanacademy.org/economics-finance-domain/core-finance/money-and-banking/banking-and-money/v/banking-3-fractional-reserve-banking>.

Christine Desan explains the concept in the modern institutional setting:

[T]he debt instruments at [shadow banking’s] core are legally engineered to produce liquidity. Note, first, how those instruments expand available liquidity. As for cash investors, they are holding contracts — the short-term, routinely renewed liabilities — that are almost as good as cash. After all, those contracts are ‘pay-on-demand’ instruments, returning a contracted amount if not rolled over; those holding them appropriately book them as ‘cash equivalents.’ As for the shadow banks, they have the borrowed cash and are using that cash at the same time. The cash and the cash-like credit (the overnight contract, for example) function together to expand the money supply de facto.

Christine Desan, *Money’s Design Elements: Debt, Liquidity, and the Pledge of Value from Medieval Coin to Modern ‘Repo’*, 38 BANKING & FIN. L. REV. 331, 336 (2022).

Now imagine for illustrative purposes that a Japanese insurance company wants to fund a portfolio of long-term U.S. dollar-denominated assets, and is considering two possible approaches. First, the insurer could use the dollar-denominated assets in its portfolio as collateral in repo agreements. Second, the insurer could raise yen (say, through a straightforward bond issuance, or through accumulated premium payments on its policies), and then enter into an FX swap for dollars. In the latter scenario, the insurer would transfer yen to a counterparty in exchange for dollars, and then undo the transaction at an agreed-upon later date. Just like every other kind of money claim, FX swaps can be rolled over, and many foreign institutions will invest in long-term dollar-denominated assets, but fund these investments via short-term FX swaps.<sup>114</sup>

The FX swap from the point of view of the insurance company's counterparty is deposit-like in that it provides short-term parking for its dollars, just like a demand savings account; indeed, it can be understood as functionally identical to a repo transaction, but with the collateral comprising foreign currency rather than long-term bonds.<sup>115</sup> In turn, if entered into at scale, FX swaps such as the one described here transform the insurer into a shadow bank, funding long-term investments with short-term liabilities that function for the counterparty as a money claim. The insurer relies on its ability to roll over the FX swaps when they expire and is vulnerable to run-like dynamics if it cannot.<sup>116</sup>

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<sup>114</sup> See generally Claudio Borio et al., *Dollar Debt in FX Swaps and Forwards: Huge, Missing, and Growing*, BIS Q. REV. 67 (2022).

<sup>115</sup> *Id.* at 67-68 (“[A]n FX swap . . . resembles a repurchase agreement, or repo, with a currency rather than a security as ‘collateral.’”). A potentially important distinction between FX swaps and repo from a regulatory standpoint is that the gross value of a repo transaction appears on the financial institution’s balance sheet, whereas the gross liabilities of an FX swap do not.

<sup>116</sup> See:

FX swap markets are vulnerable to funding squeezes. This was evident during the Great Financial Crisis (GFC) and again in March 2020 when the C[OVID]-19 pandemic wrought havoc. For all the differences between 2008 and 2020, swaps emerged in both episodes as flash points, with dollar borrowers forced to pay high rates if they could borrow at all. To restore market functioning, central bank swap lines funneled dollars to non-US banks offshore, which on-lent to those scrambling for dollars.

*Id.*

## 2. Dollar Hegemony

Any proposed regulatory reform project for the offshore dollar market should take account of the potential effects of such reforms on the dollar's status as the dominant international currency. Evaluating these potential effects, in turn, requires an understanding of the sources of dollar dominance, its costs and benefits, policy priorities that may come into conflict with it, and possible alternatives if the dollar ceded its dominant position. This section explores these issues.

### a. Dollar Dominance: The Facts

In a recent Federal Reserve research note, Carol Bertaut and her coauthors provide empirical support for the claim that “the use of the dollar globally over the last two decades suggests a dominant and relatively stable role.”<sup>117</sup> They note that in 2021, 60% of official foreign reserves were held in dollars, compared to 21% held in euros, six percent in the Japanese yen, five percent in the British pound, and two percent in the Chinese renminbi.<sup>118</sup> The dollar's role in central bank reserves is only one of its functions as an international currency; it also predominates as a settlement currency and in global capital and foreign exchange markets. The authors observe that

[t]he U.S. dollar is overwhelmingly the world's most frequently used currency in global trade . . . Over the period 1999-2019, the dollar accounted for 96[%] of trade invoicing in the Americas, 74[%] in the Asia-Pacific region, and 79[%] in the rest of the world. The only exception is Europe, where the euro is dominant. In part because of its dominant role as a medium of exchange, the U.S. dollar is also the dominant currency in international banking. [A]bout 60[%] of international and foreign currency liabilities (primarily deposits) and claims (primarily loans) are denominated in U.S. dollars. This share has remained relatively stable since 2000 and is well above that for the euro (about 20[%]) . . . The percentage of foreign currency debt denominated in U.S. dollars has remained around 60[%] since 2010 . . . The many sources of demand for U.S. dollars are also reflected in the high U.S. dollar share of foreign exchange (FX) transactions. The most recent Triennial Central Bank Survey for 2019 from

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<sup>117</sup> See Bertaut et al., *supra* note 84.

<sup>118</sup> *Id.*

the Bank for International Settlements indicated that the U.S. dollar was bought or sold in about 88[%] of global FX transactions in April 2019.<sup>119</sup>

The upshot of all this is, as economist Pierre Gourinchas recently observed, “[w]e live in a dollar world.”<sup>120</sup>

*b. Sources of Hegemonic Status*

One cannot assess the impacts of regulatory reforms on the dollar’s international status without understanding *why* the dollar predominates. Among the most cited factors in explaining the persistence of dollar dominance are the network externalities that a common currency creates.<sup>121</sup> Network externalities exist when the benefits of using something flow not only from the intrinsic qualities of the thing itself but from the fact that a large number of *other* persons or entities are also using it.<sup>122</sup> Many observers believe this dynamic applies in the international monetary realm, with language often cited as a common analogue. As Sebastian Mallaby writes,

Savers all over the world want dollars for the same reason that schoolchildren all over the world learn English: a currency or a language is useful to the extent that others choose it . . . The converse is also true: because savers are accustomed to transacting in dollars, issuers of securities find it attractive to sell equities or bonds into the dollar market.<sup>123</sup>

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<sup>119</sup> *Id.*

<sup>120</sup> Pierre-Olivier Gourinchas, *The Dollar Hegemon? Evidence and Implications for Policy Makers*, ASIAN MONETARY POL’Y F., 264 (2021) [hereinafter Gourinchas, *The Dollar Hegemon?*].

<sup>121</sup> *See, e.g.*, Mark Carney, Governor of the Bank of Eng., Speech at the Federal Reserve Bank of Kansas City’s Annual Economic Symposium in Jackson Hole, Wyo.: The Growing Challenges for Monetary Policy in the Current International Monetary and Financial System (Aug. 23, 2019) (“Huge network effects mean the dollar has remained dominant in the IMFS despite the transformation of the global economy”).

<sup>122</sup> *See, e.g.*,

Certain products become more valuable as their use, or the use of compatible products, becomes more widespread. For example, a telephone would have no value if only one person owned one. As more people join a telephone network, however, their presence in the network, in combination with the inherent qualities of the telephone, makes each unit more useful and hence more valuable.

Michael Klausner, *Corporations, Corporate Law, and Networks of Contracts*, 81 VA. L. REV. 757, 772 (1995).

<sup>123</sup> Sebastian Mallaby, *The Age of Magic Money*, 99 FOREIGN AFFS., 65, 72 (2020). The analogy between money and language goes back at least as far as Aristotle. *See, e.g.*, EICH, *supra* note 47, at 168-74.

Just as having a lingua franca can facilitate communication and trade in a polyglot world, so having a common (second) currency may, by limiting the number and cost of transactions required to settle international trade, facilitate commerce and reduce the confusion of dealing with myriad currencies in a globalized world.<sup>124</sup> Because everyone is trading into and out of dollar markets—rather than from one currency into multiple other currencies reflecting all of a country’s trading partners—foreign exchange and capital markets in the dollar are thicker, and transaction costs are lower.<sup>125</sup> The benefits that arise from having such a “vehicle” currency are thus driven in large part by the fact that so many other persons and entities also use it—they add depth and liquidity to the market.<sup>126</sup>

The dollar’s dominance across different functions thus becomes self-reinforcing, and can result in “asymmetric entrenchment.”<sup>127</sup> As Mark Carney, former governor of the Bank of England, has observed,

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<sup>124</sup> See, e.g., Kindleberger, *infra* note 234. The analogy to a lingua franca is especially useful because it emphasizes that the focus here is not on a single world currency, but on a common currency for international purposes—a sort of *second* currency for countries, entities, and persons that do not use the dollar as their domestic currency. For this reason, critiques based on “optimal currency areas” are not on-point here. See, e.g., Dan Awrey, *Brother, Can You Spare a Dollar? Designing an Effective Framework for Foreign Currency Liquidity Assistance*, 3 COLUM. BUS. L. REV. 934, 994-95 (2017).

<sup>125</sup> As Barry Eichengreen explains,

If a financial instrument is not readily convertible into cash, then it is not readily used in market operations. It therefore matters greatly that the market in U.S. treasury bonds and bills has unrivaled liquidity whether measured by turnover or transactions costs. The U.S. treasury market is, quite simply, the most liquid financial market in the world. This reflects the scale of the U.S. economy and its financial development. But the status quo is self-reinforcing. Because the U.S. market is so liquid, foreign investors undertake transactions and concentrate their holdings there. The fact that they undertake their transactions and concentrate their holdings there in turn lends it additional liquidity.

BARRY EICHENGREEN, EXORBITANT PRIVILEGE: THE RISE AND FALL OF THE DOLLAR AND THE FUTURE OF THE INTERNATIONAL MONETARY SYSTEM 126 (2011).

<sup>126</sup> See, e.g., Awrey, *supra* note 124, at 997 (“We might expect these network effects to be particularly pronounced in the case of an international currency given that one of the most frequently cited intrinsic benefits—relatively low exchange rate volatility—is itself partly a function of the depth and volume of the market for the currency itself.”).

<sup>127</sup> As Gita Gopinath and Jeremy Stein observe,

Going in one direction, a large volume of dollar invoicing in international trade creates an increased demand for safe dollar deposits, thereby conferring an exorbitant privilege on the dollar in terms of reduced borrowing costs. Going in the other direction, these low dollar-denominated borrowing costs make it attractive for non-U.S. exporters to invoice their sales in dollars, so they can more easily tap the cheap dollar funding. The end result of this two-way feedback can be an asymmetric

With large volumes of trade being invoiced and paid for in dollars, it makes sense to hold dollar-denominated assets. Increased demand for dollar assets lowers their return, creating an incentive for firms to borrow in dollars. The liquidity and safety properties encourage this further. In turn, companies with dollar-denominated liabilities have an incentive to invoice in dollars, to reduce the currency mismatch between their revenues and liabilities. More dollar-issuance by non-financial companies and more dollar funding for local banks makes it wise for central banks to accumulate some dollar reserves.<sup>128</sup>

A number of commentators have made similar points.<sup>129</sup> But if the argument about network externalities is persuasive on a conceptual level, it is worth flagging here an empirical point of debate: If network externalities indicate that the world should converge on a common international currency, how common has it been historically that there *is* such a currency? The conventional wisdom among economists appears to be that it is quite

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entrenchment of the dollar as the global currency of choice, even when other countries are roughly similar to the United States in terms of economic fundamentals such as their share of overall worldwide imports.

Gita Gopinath & Jeremy C. Stein, *Banking, Trade, and the Making of a Dominant Currency*, 136 Q.J.ECON. 783, 827 (2021).

<sup>128</sup> Carney, *supra* note 121.

<sup>129</sup> See, e.g., Gourinchas, *The Dollar Hegemon?*, *supra* note 120, at 15 (noting that private investors are “more likely to use dollars if this is the currency in which transactions are invoiced in the first place: currency of settlement and currency of invoicing are often closely tied”); Sally Davies & Christopher Kent, *US Dollar Funding: An International Perspective 3* (Bank for Int’l Settlements, CGFS Papers, Working Paper No. 65, 2020) (arguing that the dollar’s “function as the foremost funding currency is reinforced by its use as a vehicle currency for foreign exchange transactions, invoicing currency for global trade and reserve currency for reserve managers.”); Alexander K. Swoboda, *The Euro-Dollar Market: An Interpretation*, in 64 ESSAYS IN INT’L FIN. 1, 11 (1968) (“An interesting feature of the use of a vehicle currency is its tendency to reinforce itself.”); Paul Krugman, *The International Role of the Dollar: Theory and Prospect*, in EXCH. RATE THEORY & PRAC. 261, 274 (John F. O. Bilson & Richard C. Marston eds., 1984) (“[T]he use of a currency as an international money itself reinforces that currency’s usefulness, so that there is an element of circular causation.”).

common.<sup>130</sup> There are, however, some notable dissenting voices.<sup>131</sup> Without trying to resolve this issue, it will be worth bearing this debate in mind as we consider possible alternatives to dollar dominance below.<sup>132</sup>

If network effects and deep, liquid markets were all there was to dollar hegemony, it would be easier to imagine a tipping point in the near future where the equilibrium would shift to another currency—say, as the Chinese government promoted the use of the renminbi in its vast network of trading relationships, and fostered renminbi-denominated capital and money markets at home.

Network externalities are not, however, the only explanation for the persistence of dollar hegemony. Indeed, there are compelling arguments that most prophecies of dollar decline misconstrue the principal source of its hegemony, and underestimate the degree to which the U.S., for all its profound challenges, maintains decisive comparative institutional advantages over potential competitors. Those making this argument emphasize the quality of American institutions, including the rule of law, respect for property rights, a strong and independent judiciary, relatively competent economic management, and a politically independent central bank committed to supporting the global financial system.<sup>133</sup>

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<sup>130</sup> See, e.g., Paul Krugman, *Vehicle Currencies and the Structure of International Exchange*, 12 J. MONEY, CREDIT, & BANKING 513, 513 (1980) (noting that at least since the late 19<sup>th</sup> century, “some one national currency has had a special role as international money. First the pound sterling and then the U.S. dollar have played at an international level the roles that national monies play in domestic economies”); Interview by Masahiro Okoshi, Nikkei Asia Staff Writer, with Kenneth Rogoff, Econ. Professor at Harv. Univ., in Bos., Mass., *China’s Yuan Likely to Become Asia’s Central Currency* (Aug. 10, 2021), <https://asia.nikkei.com/Editor-s-Picks/Interview/China-s-yuan-likely-to-become-Asia-s-central-currency-Kenneth-Rogoff> (The global monetary system has usually been unipolar, and “[m]ultipolar[ity] is usually transitional. It’s not a stable equilibrium, because there are networking effects that are very powerful, and that tends to prevail.”); BENN STEIL & MANUEL HINDS, *MONEY, MARKETS, & SOVEREIGNTY* 101-02 (2009) (“Throughout history, the currencies of the dominant powers have succeeded one another as international monies: the Roman-Byzantine monetary order, which lasted 12 centuries; the Venetian ducat of the late Middle Ages; Spanish domination in the early Renaissance, later challenged by the Dutch; and sterling three centuries later.”) (quoting FILIPPO CESARANO, *MONETARY THEORY AND BRETTON WOODS* 195 (2009)).

<sup>131</sup> See, e.g., EICHENGREEN, *supra* note 125, at 8 (“Aside from the very peculiar second half of the twentieth century, there has always been more than one international currency.”).

<sup>132</sup> See *infra* Section II.B.3.b.

<sup>133</sup> See, e.g., Stephen Kirchner, *The ‘Reserve Currency’ Myth: The US Dollar’s Current and Future Role in the World Economy*, U.S. STUD. CENTRE (Nov. 11, 2019), <https://www.ussc.edu.au/the-reserve-currency-myth-the-us-dollars-current-and-future-role-in-the-world-economy> (“The role of the [U.S.] dollar in the world economy is a symptom rather than a cause of



Economist Eswar Prasad, for example, observes that

The institutions that engender and maintain the trust of both domestic and foreign investors in U.S. financial markets and dollar assets include an open and transparent system of democratic government, along with an institutionalized system of checks and balances. This framework needs to be underpinned by trusted public institutions, especially a central bank free from direct political interference with the rule of law administered by an independent judiciary.<sup>134</sup>

Consistent with this line of argument, it is worth noting that in times of uncertainty and turmoil in global markets—including turmoil originating in the U.S.—the dollar seems to grow stronger, as its *relative* position as a safe port in the storm strengthens vis-à-vis other currencies.<sup>135</sup>

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the fundamental strength of its political and economic institutions, as well as its internationally unrivalled capital markets.”). As explained by Randal Quarles,

The dollar’s role in the global economy rests on a number of foundations, including the strength and size of the U.S. economy; extensive trade linkages between the United States and the rest of the world; deep financial markets, including for U.S. Treasury securities; the stable value of the dollar over time; the ease of converting U.S. dollars into foreign currencies; the rule of law and strong property rights in the United States; and last but not least, credible U.S. monetary policy.

Randal K. Quarles, Vice Chair for Supervision of the Bd. of Governors of the Fed. Rsrv. Sys., Speech at the 113th Annual Utah Bankers Ass’n Convention: Parachute Pants and Central Bank Money (June 28, 2021), in BIS CENT. BANKERS’ SPEECHES (July 5, 2021), <https://www.bis.org/review/r210705c.htm>.

<sup>134</sup> Eswar Prasad, *Has the Dollar Lost Ground as the Dominant International Currency?*, BROOKINGS INST., at 19 (Sept. 2019), [https://www.brookings.edu/wp-content/uploads/2019/09/DollarInGlobalFinance.final\\_9.20.pdf](https://www.brookings.edu/wp-content/uploads/2019/09/DollarInGlobalFinance.final_9.20.pdf).

<sup>135</sup> See, e.g., Mallaby, *supra* note 123, at 72 (“The dollar continues to rally in times of uncertainty, even when erratic U.S. policies add to that uncertainty—hence the appreciation of the dollar since the start of the [COVID-19] pandemic.”); Kirchner, *supra* note 133, at 6 (“[E]ven in the financial crisis of 2008, which was centred on the United States, the [U.S.] dollar appreciated against other currencies as investors sought relative safety in [U.S.] assets. When the [U.S.] economy seemed most at risk, the [U.S.] dollar was still favoured by investors relative to other currencies.”); Adam Tooze, *As Good as Gold: How the Dollar Has Ruled the Global Economy No Matter the Crisis at Home*, NEW STATESMAN (Oct. 13, 2022), <https://www.newstatesman.com/ideas/2022/10/gold-bank-of-england-dollar> (describing the effects of the GFC and the Covid-19 pandemic, and asserting that “[a]s ever, instead of overturning dollar hegemony a crisis reinforced the central role of the American currency”).

### 3. Assessing Dollar Hegemony

If network effects and the various advantages of U.S. political, legal, economic, and monetary institutions help explain the persistence of dollar dominance, they do not, on their own, answer the question of whether dollar dominance is good or bad.

As a threshold matter, assuming dollar hegemony provides first-order benefits, it is worth asking what other values or policy objectives might sometimes conflict with dollar hegemony. There are several possibilities. First, there is the primary focus of this piece: stability. To the degree dollar hegemony relies on the offshore *creation* of run-prone dollar liabilities, it *may* conflict with the goal of financial stability. Even if the net first-order effects of dollar dominance are positive, it might be worth sacrificing them to some degree if the result were greater stability—particularly since unchecked financial panics are among the most pernicious social, political, and economic events a society can experience.<sup>136</sup>

A second policy objective that *may* conflict in certain circumstances with dollar hegemony is equality, but the implications of dollar hegemony for equality along various dimensions are quite complex. I touch briefly on this issue below,<sup>137</sup> but hope to wrestle with these issues more thoroughly in later work. Since this Article is primarily focused on the interplay between hegemony and *stability*, however, it is worth noting that a number of thoughtful economists and policymakers have recently highlighted ways in which monetary *instability* exacerbates inequality.<sup>138</sup>

Finally, some degree of political independence for monetary policymakers is important, if no guarantee of good policy.<sup>139</sup> Reforms that could undermine this independence are, *ceteris paribus*, less desirable. Asking the Fed to do too much can compromise its independence.<sup>140</sup>

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<sup>136</sup> See *supra* note 63.

<sup>137</sup> See *infra* notes 162-172 and accompanying text.

<sup>138</sup> See, e.g., John Crawford, *Radicalism and Democracy in Monetary System Reform*, 75 VAND. L. REV. EN BANC 55, 79-80 (2022).

<sup>139</sup> See, e.g., *id.* at 77-81.

<sup>140</sup> See, e.g., *id.* at 81-84; see also Sebastian Mallaby, *Biden's Fed Choice Is Wrong About Climate Policy*, WASH. POST (Feb. 17, 2022), <https://www.washingtonpost.com/opinions/2022/02/17/biden-banking-cop-sarah-bloom-raskin-wrong-on-climate/> (arguing that precisely because there is not a political consensus on climate change policy in the United States, attempting an end run around the political process by adding climate change policy to the Fed's remit would result in the Fed's becoming "political and ineffective"); Jerome H. Powell, Chair of the Bd. of Governors of the Fed. Rsrv. Sys., Remarks at the Symp. on Cent. Bank Indep. in Sveriges Riksbank, Stockholm, Swed.: Panel on Central Bank Independence and the Mandate—Evolving

To return to the question at hand, however, what (first-order) benefits does dollar hegemony yield? And at what cost? The rest of this section explores various arguments about these costs and benefits.

*a. Costs and Benefits*

Drilling down on the question of whether dollar hegemony is good, there are at least two possible ways to frame the question in a more pointed way: first, how good (or bad) is dollar hegemony *compared to plausible alternatives*? Several possible alternatives to the current dollar system are considered below. Second, *for whom* is dollar hegemony good, and *for whom* is it bad? Here I take an approach focused mostly on U.S. national interests, but with some discussion of the effects on and interests of other countries. This is not the only way to frame this second question, however: several recent critics of dollar hegemony argue that the system is good for financial elites in both the United States and other countries, and is bad for the working class in both the United States and other countries. I discuss these claims below in Section II.B.3.b.i.

*i. Network Efficiencies and Cost of Funding*

As a 2020 report by the Bank for International Settlements (BIS) observed, the “widespread use of the U.S. dollar gives rise to a complex and geographically dispersed network of funding relationships. These interconnections generate significant benefits, in terms of lower costs for the international flow of capital and the distribution of risk.”<sup>141</sup> This notion of the benefits of dollar hegemony is implied to some degree by the arguments that hegemony is grounded in network externalities, with (some) benefits “shared by both center and outer countries” in the dollar system.<sup>142</sup> Other benefits of

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Views (Jan. 10, 2023) (arguing that “[i]n a well-functioning democracy, important public policy decisions should be made, in almost all cases, by the elected branches of government,” and that central banks going beyond their statutory mandates will undermine their independence).

<sup>141</sup> *U.S. Dollar Funding*, *supra* note 129. As noted below, the report immediately goes on to highlight potential drawbacks to widespread dollar usage, as well. *See infra* note 174 and accompanying text.

<sup>142</sup> Swoboda, *supra* note 129, at 11 (“The gains which are shared by both center and outer countries . . . reside in lower asset-exchange and hence transactions costs, a higher interest income on working balances, smaller risk of capital loss on assets denominated in the vehicle currency, and the possibility of wealth accumulation in instruments of fairly universal purchasing power.”).

this system, however, “accrue exclusively to the country issuing the vehicle currency.”<sup>143</sup> Some of these additional gains accrue broadly to persons and businesses for whom the dollar serves as the domestic currency. As Barry Eichengreen explains in his book *Exorbitant Privilege*,

The widespread international use of the dollar is . . . an advantage for American banks and firms . . . Unlike firms in other countries, the U.S. producer receives payment in the same currency, dollars, that it uses to pay its workers, suppliers, and shareholders.<sup>144</sup>

These entities can avoid the transaction fees of foreign currency exchange, as well as costs related to mitigating foreign exchange rate risk.

Perhaps more importantly, the dollar’s status provides an enormous *funding* advantage to the U.S. government and American businesses. As the Congressional Research Service recently explained,

Because many central banks and financial institutions around the world want to hold U.S. dollars and dollar-backed securities like U.S. Treasury bonds, there is strong demand for U.S. dollars. That demand, in turn, allows the United States to borrow more cheaply . . . than it would otherwise.<sup>145</sup>

Although the funding advantage extends even to long-term Treasury bonds,<sup>146</sup> it is driven largely by the demand for dollar-denominated *money* claims around the world. On a net basis, the U.S. government and U.S. institutions issue money claims—short-term and “safe” liabilities—to non-U.S. individuals and entities, while U.S. individuals and entities invest in long-term assets issued by non-U.S. entities.<sup>147</sup> Writing in 2010, Barry Eichengreen observed that “the interest that the United States must pay on its foreign liabilities is two to three percentage points less than the rate of return on its foreign investments.”<sup>148</sup> This gap enables the United States to “run an external deficit in the amount of

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<sup>143</sup> *Id.*

<sup>144</sup> EICHENGREEN, *supra* note 125, at 3.

<sup>145</sup> *The U.S. Dollar as the World’s Dominant Reserve Currency*, CONG. RSCH. SERV. (Sept. 15, 2022), <https://crsreports.congress.gov/product/pdf/IF/IF11707>.

<sup>146</sup> *Id.*

<sup>147</sup> See Pierre-Olivier Gourinchas & Hélène Rey, *From World Banker to World Venture Capitalist: U.S. External Adjustment and the Exorbitant Privilege*, in G7 CURRENT ACCOUNT IMBALANCES: SUSTAINABILITY AND ADJUSTMENT 11, 21 (Richard H. Clarida ed., 2007) (“The United States has succeeded the United Kingdom as the ‘Banker of the World’ and the issuer of the main international currency. This means, in particular, being able to borrow short (foreigners are willing to purchase liquid dollar assets) and lend long (the United States supplies long-term loans and investment funds to foreign enterprises).”).

<sup>148</sup> EICHENGREEN, *supra* note 125, at 4.

this difference, importing more than it exports and consuming more than it produces year after year without becoming more indebted to the rest of the world.”<sup>149</sup>

This gap and the advantage the United States derives from it can be understood in several different ways. Perhaps most obviously, it can be understood “as a monopoly rent that the United States can extract as the sole issuer of the international currency.”<sup>150</sup> There are, however, at least two ways of understanding the aggregate profits the United States earns in this way as compensation for valuable services.

First, the United States can be understood as “Banker of the World.”<sup>151</sup> The United States as a whole provides to some degree the same function vis-à-vis the world financial system that, say, a community bank provides for the small town in which it operates.<sup>152</sup> The bank invests in long-term assets, such as business loans and mortgages, and issues money-claim liabilities. Similarly, the United States invests in long-term loans and equity issued by foreign entities and issues money claims such as Treasury bills, deposits, and deposit substitutes.<sup>153</sup>

As many banking scholars have observed in recent years, the traditional model of bank profitability is built in large part on “seigniorage.”<sup>154</sup> Seigniorage refers to profits made by the issuer of money: it takes less than a dollar’s worth of metal to mint a coin worth a dollar. The difference can be pocketed by the mint (traditionally owned by the government).<sup>155</sup> The spread between what

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<sup>149</sup> *Id.*; see also Michael D. Bordo & Robert N. McCauley, Triffin: Dilemma or Myth? 19 (Nat’l Bureau of Econ. Rsch., Working Paper No. 24195, 2018) (observing that despite the fact that the United States had a net international liability position of \$7.3 trillion at the end of 2015, the United States was “still earning net investment income from the rest of the world despite its net international liabilities. The BEA estimates [U.S.] net international investment income in 2015 was \$193 billion, a credit. In other words, the official data show the U.S. economy earning a net 1.1% of GDP based on a -41% of GDP position”).

<sup>150</sup> Pierre-Olivier Gourinchas et al., The International Monetary and Financial System 32, (Nat’l Bureau of Econ. Rsch., Working Paper No. 25782, 2019) (citing Emmanuel Farhi & Matteo Maggiori, *A Model of the International Monetary System*, 133 Q. J. ECON 295 (2018)).

<sup>151</sup> Gourinchas & Rey, *From World Banker to World Venture Capitalist*, *supra* note 147, at 21.

<sup>152</sup> *Id.*

<sup>153</sup> Note that Treasury bills, unlike Treasury notes and bonds, are *short-term*, and thus exhibit minimal interest rate risk; this, combined with a high degree of liquidity and minimal default risk, makes them excellent transaction reserve assets. See *supra* note 33 and accompanying text.

<sup>154</sup> See, e.g., Swoboda, *supra* note 129, at 11-13.

<sup>155</sup> See, e.g., Christine Desan, How To Spend a Trillion Dollars: Our Monetary Hardwiring, Why It Matters, and What To Do About It 22 (Harv. Pub. L. Working Paper No. 22-04, 2022) (“[T]he government . . . reap[s] the rewards that accompany creating the medium that

banks pay depositors and what they charge borrowers represents, at least in part, the private capture of seigniorage. This is because debt instruments that serve as money have an instrumental value for their holders, and the holders therefore demand a lower rate of interest.<sup>156</sup> The interest on safe debt instruments that will mature in the short-term is lower than what an extrapolation of the yield curve would suggest.<sup>157</sup> Issuing deposits is an incredibly “cheap” source of funding for banks precisely because the deposits are money for their claimants. The extra spread between the interest paid and the interest charged that results from the “moneyness” of deposits can thus be understood to represent seigniorage profits for the bank.<sup>158</sup>

Similarly, the U.S., in this view, by providing money to the world, enjoys seigniorage profits from the spread between the interest paid on U.S. short-term liabilities and the interest paid on long-term assets issued by foreign entities.

A second way to understand this spread is that it represents compensation for what Pierre-Olivier Gourinchas and coauthors call an “exorbitant duty.”<sup>159</sup> During periods of turmoil in global financial markets, the value of most financial assets, including foreign assets held by U.S. entities, falls; but the safe assets issued by the U.S. government and U.S. entities rise in value.<sup>160</sup> One can understand this as a sort of insurance payout from the United States to the rest of the world, mitigating foreign losses in the face of financial downturns.<sup>161</sup> From this perspective, one can understand the extra yield the United States earns on its foreign holdings in normal times as a sort of insurance premium.

As insurer to the world or as banker to the world, it is possible to view the United States as providing a valuable service, and benefiting in its turn from providing this service.

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provides cash services. ‘Seigniorage’ refers to the profit that the government claims when it creates and injects money into circulation.”); *see also* Ricks et al., *supra* note 49, at 140-41.

<sup>156</sup> *See* Ricks et al., *supra* note 49, at 141.

<sup>157</sup> *See* Greenwood et al., *A Comparative-Advantage Approach*, *supra* note 82, at 1709.

<sup>158</sup> *Id.*

<sup>159</sup> Gourinchas et al., *The International Monetary and Financial System*, *supra* note 150, at 3. This notion serves as a counterpoint to the “exorbitant privilege” the United States derives from the dollar’s reserve currency status, as described in the 1960s by French Minister of Finance Valéry Giscard d’Estaing.

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

*ii. Class-based Drawbacks?*

Some critics observe that the dollar's status as the most reliable safe asset leads to high dollar demand, which leads to a "strong" dollar—that is, a high dollar exchange rate vis-à-vis other currencies. A high dollar exchange rate means that American manufactured goods are, *ceteris paribus*, less competitive in world markets.<sup>162</sup> Fewer American goods are sold, the argument goes, leading to manufacturing job loss. While a strong dollar serves the interests of the financial elite in the U.S., manufacturing job loss has been economically and socially disastrous for affected persons, families, and communities.<sup>163</sup> It has also played a significant causal role, some commentators believe, in the rise of populism in the United States and the deterioration of social ties and trust in institutions.<sup>164</sup>

Others, however, question how effective a policy of weakening the dollar would be in reversing this trend. Many economists believe that technology is a far bigger driver than globalization in eroding employment in America's manufacturing sector.<sup>165</sup> Even aside from the contributing role of technology to blue-collar job losses, some doubt the degree to which these job losses could be reversed with a "weak dollar" policy:

An exchange rate 30[%] lower is not going to be of much help to an unskilled or semiskilled worker in the United States competing head to head with Chinese labor . . . Ramping up U.S. exports is desirable on any number of grounds. But it will benefit mainly capital and skilled labor, since they and not the unskilled workers whose jobs have migrated to developing countries are the factors used intensively in the production of those exports. Changes in exchange rates cannot solve all problems. If Americans are concerned, as they should be, with

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<sup>162</sup> See, e.g., Simon Tilford & Hans Kundnani, *It Is Time To Abandon Dollar Hegemony*, FOREIGN AFFS. (July 28, 2020), <https://www.foreignaffairs.com/articles/americas/2020-07-28/it-time-abandon-dollar-hegemony> ("Demand for the dollar pushes up its value, which makes U.S. exports more expensive and curtails demand for them abroad, thus leading to earnings and job losses in manufacturing.").

<sup>163</sup> See *id.*

<sup>164</sup> See *id.* ("The costs have been borne disproportionately by swing states in regions such as the Rust Belt—a consequence that in turn has deepened socioeconomic divisions and fueled political polarization.").

<sup>165</sup> See, e.g., Federica Cocco, *Most US Manufacturing Jobs Lost to Technology, Not Trade*, FIN. TIMES (Dec. 2, 2016), <https://www.ft.com/content/dec677c0-b7e6-11e6-ba85-95d1533d9a62> ("The [United States] did indeed lose about 5.6m manufacturing jobs between 2000 and 2010. But according to a [recent] study, 85[%] of these jobs losses are actually attributable to technological change—largely automation—rather than international trade.").

income inequality, they will need to address it through other means, be they changes in the tax code and caps on bankers' bonuses, or more investment in education and training.<sup>166</sup>

To the degree that this view is correct and that redistribution and public investment are better suited to addressing equity problems in the United States, it is also worth noting that the “exorbitant privilege” described above enables the United States to run a far larger fiscal deficit on a sustainable basis than other countries—deficits that can, in some cases, facilitate public investment and redistributive policies.

Stefan Eich has made a distinct but overlapping argument with those who believe dollar hegemony is bad for workers, stating that

[t]he Fed's commitment to shoring up global dollar liquidity for investors simultaneously skews its domestic commitments away from seriously striving for full employment. When push comes to shove, workers' wage demands are without hesitation sacrificed on the altar of investor confidence in the dollar.<sup>167</sup>

The implication seems to be that if looser monetary policy would increase employment (at least in the short-term) but also push inflation beyond the Fed's target level, the Fed will tighten policy in order to dampen inflation and maintain investor confidence in the value of the dollar. A compelling response to this view is that it misconstrues the long-term relationship between inflation and unemployment; former Treasury Secretary Larry Summers, for example, after stressing that he “yield[s] to no one in [his] hatred for unemployment,” argues that

[t]he question is not some trade-off of inflation against unemployment. The question is what policy path would minimise the total amount of unemployment distress over

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<sup>166</sup> EICHENGREEN, *supra* note 125, at 175. A recent report in *The Economist* reached a similar conclusion:

It is far from clear [that well-paid manufacturing] jobs can be brought back—no matter how much governments spend. For a start, the manufacturing wage premium has fallen sharply. Production workers' wages in America now lag behind those of similar service-sector workers by 5%. Moreover, the sort of high-tech factories that America and Europe are attempting to attract are highly automated, meaning they are no longer a significant source of employment for people with few qualifications.

*The World Is in the Grip of a Manufacturing Delusion*, ECONOMIST (July 13, 2023), <https://www.economist.com/finance-and-economics/2023/07/13/the-world-is-in-the-grip-of-a-manufacturing-delusion>.

<sup>167</sup> Daniel Steinmetz-Jenks, *Cash Is Never Neutral: A Conversation on the Politics of Money*, NATION (Oct. 10, 2022), <https://www.thenation.com/article/economy/stefan-eich-interview/>.



time. And just as the patient who doesn't complete her regimen of medicines does herself no favour, or the oncologist who prescribes too few courses of chemotherapy does their patient no favours, I believe the prospects for robust American and global growth will be greater if we do not allow inflation expectations to become fully entrenched.<sup>168</sup>

Critics focused on class rather than national divisions also argue that dollar dominance is good for elites and bad for the less well-off in developing countries.<sup>169</sup> The arguments they put forward on this point, however, tend to focus on capital mobility more generally, rather than the dollar specifically.<sup>170</sup> This raises the question of whether whatever wound up replacing the dollar would represent an improvement,<sup>171</sup> or if—in the case of a return of extensive capital controls—the medicine wouldn't be worse than the cure.<sup>172</sup>

At any rate, these are issues that touch on questions of equity and dollar hegemony that I hope to explore more deeply in later work. Here, it is worth noting that there are those who would reject the “Westphalian” approach that I adopt in this piece. I nonetheless adhere to the Westphalian approach in part because policy is made at the level of the nation-state, and in part because I am not entirely persuaded by the class-based critiques.

### iii. Spillovers

Section II.B.3.a.i, above, began with a passage from a BIS report on the benefits of widespread use of the dollar,<sup>173</sup> but the report immediately goes on

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<sup>168</sup> Larry Summers, *The Destabilisation Wrought by British Errors Will Not Be Confined to Britain*, FIN. TIMES (Oct. 5, 2022), <https://www.ft.com/content/20117143-2084-4ac1-98a5-5c48fae7fc23>.

<sup>169</sup> See, e.g., Yakov Feygin & Dominik Leusder, *The Class Politics of the Dollar System*, PHENOMENAL WORLD (May 1, 2020), <https://www.phenomenalworld.org/analysis/the-class-politics-of-the-dollar-system/> (“While the dollar system has undoubtedly had a disproportionately negative effect on developing countries, the main fault lines that emerge from the dollar system are along class, rather than national lines.”).

<sup>170</sup> See, e.g., *id.* (“In developing countries, the need to insure their economies against currency crises and debt deflation has meant the accumulation of dollars at the expense of necessary domestic investment. These policies are usually accompanied by a suppression of consumption and incomes to establish a permanent trade surplus vis-à-vis the dollar system.”).

<sup>171</sup> For an analysis of possible alternatives, see *infra* Section II.B.3.b.

<sup>172</sup> See, e.g., Kristin J. Forbes, *The Microeconomic Evidence on Capital Controls: No Free Lunch 4* (Nat'l Bureau of Econ. Rsch., Working Paper No. 11372, 2005) (arguing that capital controls can have pervasive distortive effects and “can generate substantial, unexpected costs”).

<sup>173</sup> See *supra* note 141 and accompanying text.

to note that such widespread use may “also give rise to vulnerabilities in terms of the transmission and amplification of shocks emanating from the United States or elsewhere, across the globe.”<sup>174</sup> Shifts in U.S. monetary policy and conditions reverberate beyond the borders of the United States. Thus, for example, when the Fed tightens policy, leading to an appreciation of the dollar, it can be a “boon” for “those with strong export sectors, selling goods not denominated in dollars . . . But those heavily reliant on key imports, which are denominated in dollars, or those who are heavily indebted in dollars, suffer an agonizing crunch.”<sup>175</sup> As Maurice Obstfeld and Haonan Zhou recently wrote in the midst of a series of rate hikes by the Fed, “[d]etermined disinflation by the Federal Reserve and continued dollar appreciation could lead to more intense debt troubles for a range of” emerging and developing economies.<sup>176</sup> One knock-on effect of this is to impel foreign central banks to try to stabilize their exchange rate vis-à-vis the dollar, as Pierre Gourinchas observes:

[i]n a world with dollar pricing, domestic monetary policy cannot affect the demand for exports (whose price in dollars is independent from the exchange rate). Instead, the monetary authority will aim to stabilize the price of domestic goods. With imported intermediate inputs also invoiced in dollars, this requires ‘leaning against the wind’ and stabilizing the dollar exchange rate.<sup>177</sup>

But in a damned-if-you-do, damned-if-you-don’t dilemma, this in turn can reduce the shock-absorbing properties of flexible exchange rates. Obstfeld and Zhou document that a number of negative effects in twenty-six emerging and developing economies are predicted by dollar appreciation shocks, including “declines in output, consumption, investment, and government spending,” along with “a decline in domestic credit . . . and a widening of the sovereign borrowing spread for foreign currency loans”—but that these negative effects were less pronounced for countries that (among other things) did not attempt to peg their currencies to the dollar.<sup>178</sup>

If dollar appreciation shocks have negative knock-on effects, those that follow from a sudden weakening of the dollar may be worse: because so many foreign entities hold dollar-denominated assets if the dollar falls in value vis-à-

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<sup>174</sup> U.S. Dollar Funding, *supra* note 129, at iii.

<sup>175</sup> Adam Tooze, *Chartbook #142: The Dollar System’s Resilience*, CHARTBOOK (Aug. 13, 2022), <https://adamtooze.substack.com/p/chartbook-142-the-dollar-systems>.

<sup>176</sup> Maurice Obstfeld & Haonan Zhou, *The Global Dollar Cycle*, 53 BROOKINGS PAPERS ON ECON. ACTIVITY 361, 364 (2022).

<sup>177</sup> Gourinchas, *The Dollar Hegemon?*, *supra* note 120, at 13.

<sup>178</sup> Obstfeld & Zhou, *supra* note 176, at 3.

vis their domestic currencies, it automatically weakens their balance sheets and erodes their capital cushions, creating vulnerabilities that can exacerbate the global financial cycle in pernicious ways.<sup>179</sup>

In any event, as with monetary policy and inequality, this all seems to point to the importance of a stable monetary policy.<sup>180</sup> And again, as we consider dollar dominance in this context, we should ask if alternative arrangements would better promote stability.<sup>181</sup>

#### *iv. Weaponized Interdependence*

One of the more controversial advantages that dollar hegemony confers on the United States is the ability to “weaponize” its position as the hub of the dollar system for national security and coercive diplomatic purposes.<sup>182</sup> Recognizing the dollar system as one of “interdependence,” Henry Farrell and Abraham Newman have referred to this practice as a prime example of “weaponized interdependence.”<sup>183</sup> They label the approaches the United States has adopted the “panopticon effect” and the “chokepoint effect.”<sup>184</sup> The panopticon effect allows states with “physical access to or jurisdiction over hub nodes [to] use this influence to obtain information passing through the hubs.”<sup>185</sup> For example, in the wake of 9/11, the U.S. government leveraged its influence over the SWIFT financial messaging system as a way to monitor potential flows of funds to terrorist organizations.<sup>186</sup> Economist Kenneth

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<sup>179</sup> Gourinchas, *The Dollar Hegemon?*, *supra* note 120, at 13 (“On the financial side, another strand of the literature emphasizes the spillovers of [U.S.] monetary policy via asset markets. Dollar dominance in banking and the dollarization of cross border claims imply that [U.S.] monetary policy impulses get transmitted beyond [U.S.] borders in international financial markets, contributing to a global financial cycle.”).

<sup>180</sup> *See supra* note 138 and accompanying text.

<sup>181</sup> *See infra* Section III.

<sup>182</sup> *See, e.g.*, Robert Lewis & Li Li, *Can De-coupling from the U.S. Dollar De-fang Secondary Sanctions?*, CHANCE BRIDGE L. FIRM (Aug. 24, 2021), <https://www.chancebridge.com/en/article/?id=231> (“[The United States] has weaponized the dominance of the [U.S.] dollar to enforce key elements of its geopolitical policy preferences on the rest of the world.”).

<sup>183</sup> Henry Farrell & Abraham L. Newman, *Weaponized Interdependence: How Global Economic Networks Shape State Coercion*, 44 INT’L SECURITY 42 (2019). The concept is broader than the dollar system. *See id.* At 44 (“Our account places networks such as financial communications, supply chains, and the internet, which have been largely neglected by international relations scholars, at the heart of a compelling new understanding of globalization and power.”).

<sup>184</sup> *Id.* At 54-58.

<sup>185</sup> *Id.* At 55.

<sup>186</sup> *Id.* At 66-67.

Rogoff has cited this sort of access to information as one of the key benefits the United States derives from dollar dominance.<sup>187</sup>

More controversial is the chokepoint effect, which involves a “privileged state[s] capacity to limit or penalize use of hubs by third parties.”<sup>188</sup> In the financial sphere, the chokepoint effect is more or less synonymous with the U.S. employment of sanctions. U.S. financial sanctions—against individuals, entities, or entire countries—typically leverage the fact that “[b]ecause payment transactions outside of the [United States] are predominantly denominated in [U.S.] dollars, the currency clearance will . . . typically be completed through correspondent banks in the [U.S.]”<sup>189</sup> The efficacy of these sanctions at preventing dollar usage is clearer if we recall both the hierarchical and the public-private hybrid nature of money<sup>190</sup>—ultimately, even if dollars are *issued* by a non-U.S. entity, these dollars must (ultimately) be redeemable for dollars issued by U.S. entities that themselves have access to reserve accounts at the Fed. Likewise, even if dollar transfers are cleared by non-U.S. entities, those entities must be able to clear *their* transactions with U.S. banks. By directing U.S. banks to deny dollar clearing to entities that themselves are the subject of sanctions, or that facilitate transfers by sanctioned parties, the United States can in large measure cut these parties off from the dollar system.<sup>191</sup>

While many critiques of U.S. sanctions arise from disagreements with U.S. policies,<sup>192</sup> even commentators sympathetic to U.S. priorities have questioned the U.S.’s increased reliance on sanctions. Daniel Drezner has argued that sanctions often fail to achieve their aims, and carry significant costs of their own; “[t]hey strain relations with allies, antagonize adversaries, and impose economic hardship on innocent civilians.”<sup>193</sup> Of course, sanctions are not invariably ineffective, and sometimes judging their effect is difficult. For example, with respect to the various sanctions on Russia following its 2022 invasion of Ukraine, Drezner notes that the threat of these measures failed to deter Russia from invading *ex ante*, and their implementation failed to coerce

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<sup>187</sup> Rogoff, *supra* note 130 (“The power of the dollar is not just that so much of the world uses it as a unit of account and for invoicing and for reserves, but the fact that, because of the power of the dollar, the [United States] has a lot of control over information.”).

<sup>188</sup> Farrell & Newman, *supra* note 183, at 55-56.

<sup>189</sup> Lewis & Li, *supra* note 182.

<sup>190</sup> See *supra* Sections I.D. and I.F.

<sup>191</sup> See generally Lewis & Li, *supra* note 182.

<sup>192</sup> *Id.*

<sup>193</sup> Daniel W. Drezner, *The United States of Sanctions: The Use and Abuse of Economic Coercion*, FOREIGN AFFS., Aug. 24, 2021.

Russia to withdraw *ex post*, but that they *may* nevertheless succeed “[a]s a means of hindering Russia’s warfighting capacity.”<sup>194</sup>

In any event, the biggest concern from Drezner’s perspective is that “financial sanctions could undercut the U.S. dollar’s standing as the world’s primary reserve currency . . . . After a generation of these sanctions . . . , targets are searching for alternatives to the dollar to protect themselves from coercion.”<sup>195</sup>

In line with this concern, Robert Lewis and Li Li observe that “governments and experts around the world are actively exploring a range of options to restore more balance to the current asymmetrical global financial system which currently works disproportionately to the unilateral advantage of the [United States].”<sup>196</sup>

Both China and Russia have tried in the past decade to create financial infrastructure that severs global finance and capital flows from SWIFT and from the U.S. banking system, with limited traction to date.<sup>197</sup> As discussed in the next section, there does not yet appear to be a robust alternative to the dollar as a global currency, and so these efforts to set up competing clearing and messaging systems might be expected to sputter. But overuse of sanctions by the United States may add straw to the proverbial camel’s back, hastening the day when the dollar loses its privileged position.

The upshot is that losing dollar hegemony would cost the United States a key tool, but that concern over this loss may be mitigated by several factors, including questions about the tool’s effectiveness and U.S. propensity to overuse it.

#### *b. What Is the Alternative?*

A common phenomenon in American politics is an incumbent elected official from one party polling behind a generic candidate from another party, but performing much better when matched against the other party’s actual candidates.<sup>198</sup> Similarly, if the drawbacks of dollar dominance cause us to

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<sup>194</sup> Daniel W. Drezner, *Is Russia an Example of How Not To Sanction?*, DREZNER’S WORLD (Sept. 26, 2022), <https://danieldrezner.substack.com/p/is-russia-an-example-of-how-not-to>.

<sup>195</sup> Drezner, *The United States of Sanctions*, *supra* note 193.

<sup>196</sup> Lewis & Li, *supra* note 182.

<sup>197</sup> *Id.*

<sup>198</sup> *See, e.g.*, Jeffrey M. Jones, “Generic” Republican Continues to Lead Obama in 2012 Vote, GALLUP (Oct. 14, 2011), <https://news.gallup.com/poll/150116/generic-republican-continues-lead-obama-vote.aspx> (documenting “Obama’s stronger performance versus actual Republican candidates than on the generic ballot” during the early phases of the 2012 presidential campaign).

question its desirability, the dollar may look better when matched against actual possible alternatives. This point has even more force when we consider that, if the United States surrenders its hegemonic role, there is no guarantee that the most desirable alternative will prevail in its wake. In short, how plausible are possible alternatives to the dollar, and how much could we expect these alternatives to improve on the dollar, rather than reproduce or even exacerbate its drawbacks? Are other models likely to bolster or undermine stability?

While there is, of course, deep uncertainty about how the global financial system might evolve,<sup>199</sup> it is possible to identify in broad strokes several possible alternatives.<sup>200</sup> At the most basic level, there is the question of whether a new system would be unipolar or multipolar—in other words, if it will have one hegemon or multiple power centers.<sup>201</sup> A second question is whether existing national currencies, or the euro, are the only potential international currencies, or if “synthetic” international currencies, such as so-called cryptocurrencies, could play a role.

#### *i. New Hegemon*

Perhaps the most obvious alternative to dollar hegemony is for the dollar to be replaced by a different national (or regional) currency. The transition from one currency hegemon to another has historical precedents: in the seventeenth and eighteenth centuries, the Dutch guilder predominated; after that, the British pound sterling bestrode the global financial system; and over the course of the first half of the twentieth century, the U.S. dollar overtook the pound sterling.<sup>202</sup>

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<sup>199</sup> See, e.g., Steinmetz-Jenks, *supra* note 167 (quoting an interview with Eich: “[w]e can tell that the ideas and narratives that hold the system together are no longer fit for the purpose, but we lack an alternative system and even the language in which to properly describe our ambitions”).

<sup>200</sup> See, e.g., Steffen Murau et al., *The Future of Offshore Dollar Creation: Four Scenarios for the International Monetary System by 2040*, INST. FOR ADVANCED SUSTAINABILITY STUD. 5, 5 (2018) (laying out possible future scenarios where the “goal is not to predict the future,” but to “develop scenarios to unveil the ‘possibility space’ for the future setup of the IMS,” where scenarios are defined as “feasible, internally consistent descriptions of a specific aspect of the future that help us imagine new states which could emerge after major shocks, by considering the outcome of changing several variables at the same time, and not holding other variables constant”).

<sup>201</sup> Another theoretical possibility, of course, is “anarchy,” though as Murau and his coauthors document, this has historically described short transition periods after major shocks, and is not a stable equilibrium. *Id.* At 29.

<sup>202</sup> See Michael B. Devereux & Shuoyong Shi, *Vehicle Currency*, 54 INT’L ECON. REV. 97, 97 (2013); but see *supra* note 131.

If a similar transition were to occur, then based on the size of the economies different currencies serve, the obvious candidates to replace the dollar are the euro and the renminbi.<sup>203</sup> Neither seems on the verge of replacing the dollar as the global currency hegemon in the near future.<sup>204</sup> China has made a number of efforts to promote broader use of the renminbi, but the project faces several significant challenges. The first is the difficulty of creating deep, liquid international markets in a currency.<sup>205</sup> On its own, this seems to be a challenge that China could overcome, given the size of its economy and the extent of its trading relationships.<sup>206</sup> But two other challenges complicate this picture. First, the Chinese government has various capital controls in place, limiting the free movement of renminbi into and out of the country, thus impeding the development of international markets that could support broader use of the renminbi.<sup>207</sup>

The more fundamental challenge, however, centers on concerns about the robustness of the rule of law; as Stephen Kirchner observes, “[renminbi]-denominated assets are seen as bearing significant macroeconomic and political risks and China’s underdeveloped capital markets limit the ability of investors to effectively manage those risks.”<sup>208</sup> Barry Eichengreen weighs in that “[i]nvestors worry, not unreasonably, about China abruptly changing the rules

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<sup>203</sup> See, e.g., Kirchner, *supra* note 133, at 4-5 (“Other currencies, most notably the euro and the Chinese renminbi (RMB), have the potential to rival the role of the [U.S.] dollar given the size of their economies.”).

<sup>204</sup> See, e.g., *id.* At 5 (“The prospect that either the euro or RMB significantly displace the dollar in the global economy in the medium-term is close to zero.”).

<sup>205</sup> See *id.* At 15 (“China’s capital markets remain under-developed and are not fully accessible to international investors. RMB-denominated assets are seen as bearing significant macroeconomic and political risks and China’s underdeveloped capital markets limit the ability of investors to effectively manage those risks.”).

<sup>206</sup> See, e.g., Alessandro Nicita & Carlos Razo, *China: The Rise of a Trade Titan*, U.N. CONF. ON TRADE & DEV. (Apr. 27, 2021), <https://unctad.org/news/china-rise-trade-titan> (China has a far larger share of global exports than any other country).

<sup>207</sup> See, e.g., Kirchner, *supra* note 133, at 15 (“China’s managed exchange rate and capital controls limit its international acceptability . . . For China to successfully internationalize the RMB, it would need to give-up much of the apparatus of state control over cross-border transactions and liberalize its financial markets.”); see also *Will the Dollar Stay Dominant?*, ECONOMIST (May 8, 2021), <https://www.economist.com/special-report/2021/05/06/will-the-dollar-stay-dominant> (“A third of economists . . . think capital controls are an insuperable obstacle to internationalization of the yuan. Yet it is clear that the Chinese authorities are desperate to keep them, even at the expense of the currency’s international role.”); Prasad, *supra* note 134, at 8 (describing a tightening of capital controls in China after an initial effort at liberalization, and concluding that the “reimposition of capital controls, persistent depreciation pressures on the currency, and the lack of financial market and other reforms seem to have taken the shine off the renminbi’s rise”).

<sup>208</sup> Kirchner, *supra* note 133, at 15.

of the game governing access to and use of its currency.”<sup>209</sup> Many believe this kind of political risk is having an increasingly pernicious effect even within China’s borders; Adam Posen recently argued that the response to the COVID pandemic “made visible and tangible the [Chinese Communist Party’s] arbitrary power over everyone’s commercial activities,” and that there is today “widespread fear not seen since the days of Mao—fear of losing one’s property or livelihood, whether temporarily or forever, without warning and without appeal.”<sup>210</sup> These are likely insuperable near-term obstacles to the complete replacement of the dollar by the renminbi.

As a final point, there are also increasing questions about the trajectory of China’s economy, which may counsel a slightly more bearish view of the renminbi’s long-term prospects.<sup>211</sup>

The other obvious potential successor to the dollar is the euro. Indeed, when the euro was introduced in 1999, many predicted that it would overtake the dollar.<sup>212</sup> For those who hoped this would be the case, the results have been disappointing:

[F]ar from being a source of economic strength, the single currency crippled many member economies by locking them

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<sup>209</sup> Bernadette Lee, *China’s Capital Controls: Here To Stay?*, CENT. BANKING (Jul. 30, 2021), <https://www.centralbanking.com/central-banks/currency/7860946/chinas-capital-controls-here-to-stay> (quoting Barry Eichengreen).

<sup>210</sup> Adam S. Posen, *The End of China’s Economic Miracle*, FOREIGN AFFS. (Aug. 2, 2023), <https://www.foreignaffairs.com/china/end-china-economic-miracle-beijing-washington>.

<sup>211</sup> As Larry Summers recently opined, there is an increasing chance that when historians look back at the views that prevailed of China in 2020, they will compare them to the views that prevailed of Japan in 1990 or the views that prevailed of Russia in 1960 and find them almost as bizarre. The pressure for capital flight, the dependence on real estate, the magnitude of the demographic challenge, the complexity of running an economy in a way that both enforces political loyalty and spurs innovation, all of this suggests to me that there are likely to be very challenging years ahead in China.

Summers, *supra* note 168. In line with this observation, it was reported in January 2023 that China’s population had declined for the first time in six decades. *See, e.g.*, Albee Zhang & Farah Master, *China’s First Population Drop in Six Decades Sounds Alarm on Demographic Crisis*, REUTERS (Jan. 17, 2023), <https://www.reuters.com/world/china/chinas-population-shrinks-first-time-since-1961-2023-01-17/>. *See also* Posen, *supra* note 210 (arguing that the post-COVID “[f]inancial markets, and probably even the Chinese government itself, have overlooked the severity of these weaknesses [relating to a lack of investor confidence], which will likely drag down growth for several years”).

<sup>212</sup> *See, e.g.*, Kirchner, *supra* note 133, at 14 (“The advent of the single European currency in 1999 was hailed by many as a boost to the status of European economies and it was widely expected that the euro would come to rival the [U.S.] dollar in ‘reserve’ currency status and its use in international trade and investment.”).



into a one-size-fits-all monetary policy . . . Europe's sovereign debt markets remain fragmented and euro-denominated assets are not seen as a safe-haven given the risks inherent in a monetary union not backed by a fiscal or banking sector union.<sup>213</sup>

Eswar Prasad argues that “given the ongoing economic difficulties and political tensions in the eurozone, it is difficult to envision the euro posing much of a challenge to the dollar's dominance as a reserve currency or even as an international payment currency.”<sup>214</sup> And Daniela Gabor opines in the *Financial Times* that future “monetary historians will marvel at that brief period when European politicians believed so much in the euro's potential to unseat the [U.S.] dollar.”<sup>215</sup>

The upshot is that few commentators see either the euro or the renminbi as an immediate threat to the dollar.<sup>216</sup> As Barry Eichengreen has argued, “the euro is a currency without a state,” while the renminbi “is a currency with too much state.”<sup>217</sup> Stephen Kirchner concludes that “both the euro zone and China are beset by chronically weak political and economic institutions that are also resistant to reform.”<sup>218</sup>

Lest dollar supporters grow smug, however, or dollar detractors despair, it is worth sounding a note of caution here. In discussing U.S. sanctions, I referred to the “proverbial camel's back”; if dollar dominance is the camel, it may yet be able to support lots more straw, but its capacity is not infinite. If U.S. policymakers take the dollar's status for granted in pursuing other policies, it may, over time, break the back of dollar dominance. Mark Carney strikes an appropriately cautionary tone when he cites Rudi Dornbusch's famous aperçu that “[i]n economics, things take longer to happen than you think they will, and then they happen faster than you thought they could,” and warns that “blithe acceptance of the status quo is misguided.”<sup>219</sup>

In any event, even if a new hegemon were plausible in the short term, there is no reason to think that it would avoid the drawbacks of the current system. For example, reforming the international financial system so that it bolsters

<sup>213</sup> *Id.*

<sup>214</sup> Prasad, *supra* note 134, at 18.

<sup>215</sup> Daniela Gabor, *Zugzwang Central Banking (ECB Edition)*, FIN. TIMES (Sept. 7, 2022), <https://www.ft.com/content/2d79d153-fffa-4441-b79f-0a808a51108f>.

<sup>216</sup> See, e.g., Tooze, *As Good as Gold*, *supra* note 135 (“Talk of alternatives to the dollar seems like an exercise in wishful or alarmist thinking, a sign of unease with an unbalanced world, rather than a realistic analysis of likely macroeconomic trends.”).

<sup>217</sup> EICHENGREEN, *supra* note 125, at 7.

<sup>218</sup> Kirchner, *supra* note 133.

<sup>219</sup> Carney, *supra* note 121.

stability without too large a sacrifice of the benefits of open trade and the free flow of capital will require both a strong and nimble monetary authority for the dominant international currency, along with institutional reforms to better regulate private issuance of the dominant currency. The same institutional weaknesses that play a role in preventing the euro and renminbi from competing on more equal terms with the dollar also suggest that if the dollar did stumble, there is little reason to hope that the risks to stability that are the central focus of this piece would be ameliorated.

*ii. Multipolarity with Cooperation*

One possibility oft explored by those who see a downside to dollar dominance, either because of concerns about the health of the global financial system,<sup>220</sup> or because of a belief that dollar dominance unfairly benefits the U.S.,<sup>221</sup> is the creation of a synthetic currency that serves the function of international currency. Mark Carney recently used the term Synthetic Hegemonic Currency (SHC), though the SHC's role would differ from the dollar (as well as the euro) in that it would not serve as a *domestic* currency for *any* country or region, but would instead reflect a multilateral or multipolar approach to the problems of a globalized financial system.<sup>222</sup> Students of the international monetary system will of course recognize that this is not a new idea: it is a version of John Maynard Keynes's proposal to create a clearing union with a new international currency he called "bancor" during negotiations at Bretton Woods in 1944.<sup>223</sup> More recently, in the wake of the GFC in 2009, China's central bank similarly called for a new, synthetic global currency.<sup>224</sup> China's proposal went nowhere,<sup>225</sup> just as Keynes's proposed clearing union and bancor failed. Keynes's plan failed in part because it would have penalized countries that ran current account surpluses, and the United States was, at the

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<sup>220</sup> See, e.g., *id.*

<sup>221</sup> See, e.g., EICHENGREEN, *supra* note 125, at 4 (describing the advantages the United States derives from dollar dominance as "a sore point for foreigners, who see themselves as supporting American living standards and subsidizing American multinationals through the operation of this asymmetric financial system").

<sup>222</sup> Carney, *supra* note 121.

<sup>223</sup> See, e.g., EICHENGREEN, *supra* note 125, at 45-46 (describing the bancor scheme).

<sup>224</sup> See Joe McDonald, *China Calls for New Global Currency*, ABC NEWS, Mar. 25, 2009 (noting that the proposed new currency would be similar to SDRs, but China's central bank governor "said it also should be used for trade, pricing commodities and accounting, not just government finance").

<sup>225</sup> See Tooze, *As Good as Gold*, *supra* note 135 ("[T]he idea never stood a chance.").

time, running large current account surpluses.<sup>226</sup> (The United States, of course, had a disproportionate influence on negotiations at Bretton Woods.) Barry Eichengreen explains, the United States “feared, not without reason, that the financial resources of the Clearing Union would all be used to purchase U.S. goods, forcing America to effectively give them away.”<sup>227</sup> The compromise was the creation of the International Monetary Fund (IMF) and, later, of “Special Drawing Rights,” or SDRs.<sup>228</sup> The SDR, introduced in 1969, is “an accounting unit for IMF transactions with member countries,” whose “value . . . is based on a basket of the world’s five leading currencies.”<sup>229</sup> It is, however, “neither a currency nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies.”<sup>230</sup> While the SDR provides an extra mechanism for the IMF to transact with its member countries, SDRs “cannot be held . . . by private entities or individuals.”<sup>231</sup> The SDR may at first look a bit like Keynes’s *bancor*, but it cannot serve as the international currency, because “[i]t is not, in fact, a currency. It is not used to invoice or settle trade or in private financial transactions. As a result, it is not particularly attractive for use by governments in their own transactions.”<sup>232</sup>

Carney’s SHC would, like the SDR, be backed by a basket of national currencies, but unlike the SDR it would also serve as a *currency*—it would be the principal mechanism by which *private* parties settle cross-border transactions.<sup>233</sup>

There are reasons, however, to be skeptical of the viability of such a synthetic currency. The great economic historian Charles Kindleberger

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<sup>226</sup> Penalizing the United States was part of Keynes’s plan. *See id.* (“When it came to devising a new currency system for the world after the Second World War, John Maynard Keynes was determined to avoid dollar hegemony. To tame America’s capricious policy, he proposed a system that would subject everyone to the same pressure to adjust domestic policy to international economic constraints.”).

<sup>227</sup> EICHENGREEN, *supra* note 125, at 47. Because the United States at the time was running significant current account surpluses, it would store up *bancor*, but would eventually have its *bancor* account debited as a penalty for hoarding under the system Keynes envisioned.

<sup>228</sup> *See, e.g.*, Sandra Kollen Ghizoni, *Creation of the Bretton Woods System*, FED. RESV. HIST. (Nov. 22, 2013), <https://www.federalreservehistory.org/essays/bretton-woods-created> (describing the creation of the IMF and the World Bank); *Special Drawing Rights (SDR)*, INT’L MONETARY FUND, <https://www.imf.org/en/About/Factsheets/Sheets/2023/special-drawing-rights-sdr> (last updated Jan. 2023).

<sup>229</sup> *Special Drawing Rights*, *supra* note 228.

<sup>230</sup> *Resources*, INT’L MONETARY FUND, <https://www.imf.org/external/pubs/ft/ar/2021/eng/who-we-are/resources/>.

<sup>231</sup> *Questions and Answers on Special Drawing Rights*, INT’L MONETARY FUND (Aug. 23, 2021), <https://www.imf.org/en/About/FAQ/special-drawing-right/>.

<sup>232</sup> EICHENGREEN, *supra* note 125, at 7.

<sup>233</sup> Carney, *supra* note 121.

compared plans to create synthetic international currencies to efforts to replace English with Esperanto as the world's lingua franca. Kindleberger writes,

The futility of a synthetic, deliberately created international medium of exchange is suggested by the analogy with Esperanto . . . [T]he myriad of plans [to create such a synthetic medium] all . . . have strengths (and weaknesses) but also share the basic weakness that they do not grow out of the day-to-day life of markets, as the dollar standard . . . has done, and likewise the Eurodollar.<sup>234</sup>

This, of course, touches again on the notion of network externalities, and as we have seen, one of the important reasons for dollar dominance is the self-reinforcing depth and breadth of dollar markets.<sup>235</sup> It is likely that any robust competitor would need to be linked to similarly liquid markets; but this type of liquidity is not easily conjured out of thin air.

At a more granular level, as Adam Tooze has written in reaction to predictions of the demise of the dollar system, this system is

a sprawling, resilient network of state-backed, commercially driven, profit-orientated transactions, lubricated by the easy availability of dollars, interwoven with American geopolitical influence, a repeated game in which intelligent players continuously gauge their advantages and disadvantages and the (very few) alternatives open to them and then, when all is said and done, again and again come back for more.<sup>236</sup>

Even if one could overcome these market dynamics, along with “the current parlous state of multilateral cooperation,”<sup>237</sup> in order to create a SHC, its governance would pose extraordinarily difficult challenges. To the degree that a policy choice, such as increasing or decreasing the supply of the SHC, would harm one country while helping another,<sup>238</sup> how would the respective

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<sup>234</sup> Charles P. Kindleberger, *The Politics of International Money and World Language*, in 61 *ESSAYS IN INT'L FIN.* 1, 10 (1967).

<sup>235</sup> See *supra* Section II.B.2.b.

<sup>236</sup> Tooze, *Chartbook #142*, *supra* note 175.

<sup>237</sup> Prasad, *supra* note 134, at 20.

<sup>238</sup> The European Central Bank faced similar tensions on a smaller scale during the 2010s, as many feared that the Eurozone would fall apart due to diverging monetary conditions in its different countries. See, e.g., Willem Buiter, *Rising Risks of Greek Euro Area Exit*, *CIII GLOB. ECON. VIEW* (Feb. 6, 2012), <https://willembuiter.com/grexit.pdf>; see also Paul Carrel & Jussi Rosendahl, *Germany, ECB Play Hardball with Greece*, *REUTERS* (Jan. 31, 2015, 2:44 PM), <https://www.reuters.com/article/us-eurozone-greece-idUKKBN0L40IL20150131/> (“The euro zone’s paymaster and the ECB are both taking a tough line with Greece’s new leftist government, whose leader swept to victory last Sunday promising that five years of austerity, ‘humiliation and suffering’ were over.”).

interests be adjudicated? There would need to be *some* body—the BIS or some other entity serving in the role of the international central bank—that would be responsible for controlling the issuance of SHC; how could we provide this entity sufficient discretion to be able to respond effectively to changing conditions or a burgeoning crisis,<sup>239</sup> while maintaining a degree of public accountability and avoiding a populist backlash? These are problems that are difficult to manage at the national or regional level; they may be intractable at the international level.

In the end, it is hard to disagree with Dan Awrey’s judgment that the “widespread adoption of a new international currency seems both highly unlikely and potentially undesirable.”<sup>240</sup>

### iii. Cryptocurrencies

The focus in the immediately preceding section is on *publicly* created and supported synthetic currencies; some, however, may believe that a *private* synthetic alternative—a currency from the so-called cryptorealm—will emerge as an alternative.

There are at least three types of potentially relevant instruments in the cryptorealm. First, there are “tokens” or “coins” that, their issuers promise, will maintain a “stable” price vis-à-vis some other unit of account—typically, the dollar.<sup>241</sup> Analytically, these serve the same function that bank accounts do,<sup>242</sup> should be regulated as such, and do nothing to undermine the dominance of the dollar—indeed, they may bolster it.<sup>243</sup>

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<sup>239</sup> For example, a crisis response may require discretionary emergency lending on a large scale.

<sup>240</sup> Awrey, *supra* note 124, at 997.

<sup>241</sup> See Marco Di Maggio & Nicholas Platiás, *Is Stablecoin the Next Big Thing in E-Commerce?*, HARV. BUS. REV. (May 21, 2020), <https://hbr.org/2020/05/is-stablecoin-the-next-big-thing-in-e-commerce>.

<sup>242</sup> Note that this is a point about function, not legal status. See Gary B. Gorton & Jeffrey Y. Zhang, *Taming Wildcat Stablecoins*, 90.3 U. CHI. L. REV. 909, 920 (2023) (“[F]rom the perspective of economic incentives, a stablecoin is similar to a demand deposit . . . From the law’s perspective, however, the determination isn’t so certain.”).

<sup>243</sup> Randall Quarles made this point in 2021 when he was the Fed’s Vice Chair for Supervision:

In my judgment, we do not need to fear stablecoins . . . I believe that we must take strong account of the potential benefits of stablecoins, including the possibility that a U.S. dollar stablecoin might *support* the role of the dollar in the global economy. For example, a global U.S. dollar stablecoin network could encourage faster use of the dollar by making cross-border payments faster and cheaper, and it potentially could be deployed much faster and with fewer downsides than a CBDC. And the concern that stablecoins represent the unprecedented creation of private money and thus challenge our

A second type of instrument—one that has been proposed but not actually established at scale—would be backed by other assets, but would create a *new* unit of account that would fluctuate against established national currencies. (In this one respect, such an instrument would be similar to the SDR.) Before it shut down, this was the initial idea behind Meta’s Diem project (prior to rebranding, Facebook’s Libra project).<sup>244</sup> There were many persuasive reasons to oppose this project,<sup>245</sup> but it is worth noting that if such a privately issued synthetic currency did, in some alternative reality, become the dominant international currency, providing a new unit of account in which all our purchases were denominated, it could bypass *some* of the governance issues of a public SHC: there would presumably be a clear body with decision-making authority to address crisis-like dynamics. It would almost certainly *exacerbate* other issues, however: the lack of public accountability for the issuer of the dominant international currency would justifiably strike many as dystopian; as Agustín Carstens has observed, “the monetary system is a critical public infrastructure that everyone depends on, and should be run in the interests of the public, not those of private shareholders.”<sup>246</sup>

A third type of crypto instrument would have no “issuer” backing it with assets of any sort—it would create its own unit of account, and constitute a “form[ ] of ‘non-credit’ or ‘token’ money that ha[s] explicitly been developed to ‘overcome’ the credit character of money.”<sup>247</sup> The most famous cryptocurrency in this category is Bitcoin. It is worth noting here that despite Bitcoin’s remarkable history as a speculative investment, its history as a form of money—a medium of exchange, unit of account, or stable store of value—has been a thoroughgoing failure.<sup>248</sup> There are reasons to be skeptical that it

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monetary sovereignty is puzzling, given that our existing system involves—indeed depends on—private firms creating money every day.

Quarles, *supra* note 133.

<sup>244</sup> Libra Ass’n Members, *White Paper on An Introduction to Libra*, at 4 (June 2019); Alex Heath, *Zuckerberg’s Dream of Launching a Cryptocurrency Is Officially Over*, VERGE (Jan. 31, 2022), <https://www.theverge.com/2022/1/31/22911426/meta-diem-cryptocurrency-confirms-sale> (“After multiple rebrands, congressional hearings, and several high-profile staff departures, the Meta-backed cryptocurrency known as Diem is calling it quits.”). Under the original plan, Libra’s value would be calculated based on the basket of currencies backing it; as those currencies floated against the dollar, so would Libra.

<sup>245</sup> See, e.g., Crawford, *Safe Money*, *supra* note 5, at 453 n.247.

<sup>246</sup> Agustín Carstens, Gen. Manager, Bank for Int’l Settlements, Lecture at Princeton Univ.: The Future of Money and the Payment System: What Role for Central Banks? (Dec. 5, 2019).

<sup>247</sup> Murau et al., *The Future of Offshore Dollar Creation*, *supra* note 200, at 10.

<sup>248</sup> See, e.g., Crawford, *Safe Money*, *supra* note 5, at 452-53.

will ever be able to overcome its drawbacks as a form of money. As Matt Levine observed with respect to Bitcoin itself,

If this digital cash thing takes off, then lots of people will want Bitcoin to use to buy sandwiches, and there will be a lot of demand for Bitcoin. But only twenty-one million Bitcoin will ever exist. So each Bitcoin will be more valuable as more people decide to use Bitcoin as their way to transfer digital cash. That logic never quite made sense. A convenient currency for digital cash transfer has a stable value, and the *rising* value of Bitcoin makes it *less* useful as a currency: If your Bitcoin keep going up in value, you should not spend them on sandwiches. Bitcoin as an appreciating asset will be a bad currency.<sup>249</sup>

More generally, as Murau and co-authors have written, “[w]ithout a central bank to manage public expectations about the money supply and price stability, it is not clear that the price of [Bitcoin and similar] cryptocurrencies will ever stabilize, making them very difficult to use for payments, savings, and investment.”<sup>250</sup> And as noted above, the fact that Bitcoin is backed by nothing *and* lacks a fiscal anchor creates significant challenges for its long-term viability; if the equilibrium in which Bitcoin (or similar crypto token) is widely accepted is disturbed, it would be easy for it to enter a death spiral that would destroy its value as a currency.<sup>251</sup>

#### *iv. Multipolarity Without Cooperation*

If a public synthetic currency would require a cooperative multipolar approach, it is also possible that multipolarity could take the form of noncooperative, competing hegemonic currencies, resulting in a world divided into currency regions. Barry Eichengreen, who has been prominent in arguing against the conventional wisdom that a unipolar currency is the historical norm, wrote in 2010 that

[t]here is no reason that a few years from now countries on China’s border could not use the renminbi in their international transactions, while countries in Europe’s neighborhood use the euro, and countries doing business with the United States use the dollar. There is no reason that only

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<sup>249</sup> Levine, *supra* note 36.

<sup>250</sup> Murau et al., *The Future of Offshore Dollar Creation*, *supra* note 200, at 11.

<sup>251</sup> See *supra* note 59 and accompanying text.

one country can have financial markets deep and broad enough to make international use of its currency attractive. There may have been only one country with sufficiently deep financial markets in the second half of the twentieth century, but not because this exclusivity is an intrinsic feature of the global financial system. The world for which we need to prepare is thus one in which several international currencies coexist.<sup>252</sup>

Most observers who share Eichengreen's view of the probable future of the international monetary system believe that the other currency "poles" are likely to be the euro and the renminbi.<sup>253</sup> Of course, these currencies are already used to *some* degree for international reserve and settlement purposes;<sup>254</sup> the question of whether they can establish competing "poles" is not binary but rather one of degree. The challenges they face are the same ones explored in Section II.B.3.a.i., above. If they overcome these challenges it is perhaps easier to believe that a multipolar dynamic would emerge than that the dollar would be completely displaced.<sup>255</sup>

Some observers go beyond arguing for the plausibility of this type of multipolarity and posit that such an outcome is likely, or even inevitable—that the logic of the global economy will push, with more or less force, towards multiple currency regions.<sup>256</sup> As Adam Tooze observes, "[t]here is a huge asymmetry in the world right now between the financial system that remains spectacularly euro-dollar centered and the new multipolarity of power, trade and economic activity."<sup>257</sup> But many of the arguments that dollar dominance cannot survive in a multipolar world move unpersuasively from a diagnosis of tensions in the international monetary system to a prediction of how such tensions will be resolved. As Tooze notes, "[i]dentifying and grasping a tension

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<sup>252</sup> EICHENGREEN, *supra* note 125, at 8.

<sup>253</sup> See, e.g., Gourinchas, *The Dollar Hegemon?*, *supra* note 120, at 32-33 ("The most likely [future] path is one where the dollar co-exists with one or two other global international currencies: the renminbi and possibly the euro.").

<sup>254</sup> See, e.g., Bertaut et al., *supra* note 84.

<sup>255</sup> See, e.g., Gourinchas, *The Dollar Hegemon?*, *supra* note 120, at 32 ("The global economy will have to transition, at some point in the future, either to another single anchor, or to a multipolar environment. The former scenario is much less likely than the latter since no one anticipates a full displacement of the dollar.").

<sup>256</sup> See, e.g., Carney, *supra* note 121, at 5 ("Any unipolar system is unsuited to a multi-polar world."); EICHENGREEN, *supra* note 125, at 122 ("As the world economy becomes more multipolar, its monetary system, logic suggests, should similarly become more multipolar.").

<sup>257</sup> Adam Tooze, *Chartbook #107: The Future of the Dollar - Fin-Fi (Finance Fiction) and Putin's War*, CHARTBOOK (Apr. 3, 2022), <https://adamtooze.substack.com/p/chartbook-107-the-future-of-the-dollar>.



conceptually, is illuminating,” but doing so does not directly translate into, nor should it “be confused with[,] gauging realistically the likelihood of that tension actually being resolved, certainly not in a ‘logical’ direction.”<sup>258</sup> He notes that predictions of the dollar’s demise often “conflat[e] two fundamentally incommensurate visions of the world economy: the one cosmopolitan, the other national or inter-national. The resilience of the dollar is pre-eminently the effect of a cosmopolitan power structure.”<sup>259</sup> In the end, Tooze’s “bet is that the current system has huge inertia and is tied down by gigantic network economies.”<sup>260</sup>

There is, however, a version of the argument about the general mismatch between dollar hegemony and multipolarity in economic activity that goes beyond hand-waving, zeroing in on a particular tension that could make the dollar’s status inherently unstable as the U.S. share of the world economy shrinks. Economists Pierre Gourinchas and Helene Rey call this the “New Triffin Dilemma.”<sup>261</sup> To understand this new, apparent dilemma, one must briefly look back to the post-World War II global monetary system, under the so-called Bretton Woods arrangement.<sup>262</sup>

*The Original Triffin Dilemma.* Under the Bretton Woods system, which remained in effect from the mid-1940s until the early 1970s, the U.S. dollar served as the global anchor currency, to which all other currencies were pegged at fixed exchange rates.<sup>263</sup> The U.S., in turn, committed to redeeming dollars held by foreign Central Banks for gold at a price of \$35 per ounce.<sup>264</sup> The dollar remained the reserve currency and currency of choice for settling international trade. As with fractional reserve banking more generally, the system relied on foreign central banks refraining, the vast majority of the time, from trying to redeem their dollars for gold—though trusting that the United States could meet redemption requests when needed. Economist Robert Triffin observed

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<sup>258</sup> *Id.*

<sup>259</sup> Tooze, *As Good as Gold*, *supra* note 135.

<sup>260</sup> Tooze, *Chartbook #107*, *supra* note 257. Tooze goes on to write: “I don’t find it convincing to claim that a greater use of Australian dollars or South Korean won in foreign exchange reserves amounts to a watering down of dollar hegemony. All those ‘alternatives’ to the dollar are, in fact, underpinned by dollar swap lines.” *Id.*

<sup>261</sup> Gourinchas & Rey, *From World Banker to World Venture Capitalist*, *supra* note 147, at 35; Gourinchas et al., *The International Monetary and Financial System*, *supra* note 150, at 34. Other economists have made similar arguments. *See e.g.*, Maurice Obstfeld, *International Liquidity: The Fiscal Dimension* 2-3 (Nat’l Bureau of Econ. Rsch., Working Paper No. 17379, 2011). Michael Bordo and Robert McCauley label these arguments the “fiscal or ‘safe assets’ version of Triffin.” Bordo & McCauley, *supra* note 149, at 21.

<sup>262</sup> *See* Ghizoni, *Creation of the Bretton Woods System*, *supra* note 228.

<sup>263</sup> *Id.*

<sup>264</sup> *Id.*

in 1961 that as the world economy and international trade grew at a much faster rate than the U.S. reserves of gold, the arrangement would face what came to be called the Triffin dilemma: on the one hand, if the United States were to maintain confidence that it *could* meet gold redemption demands at the fixed price, it would have to limit the supply of dollars relative to its gold reserves and would be unable to provide sufficient liquidity to the global economy, thus depressing trade and growth.<sup>265</sup> On the other hand, if it provided dollars sufficient to lubricate international trade, the stock of dollars relative to gold would become so large that countries would lose faith in the United States' ability to maintain the \$35-per-ounce price, leading to a run on the dollar, thereby forcing the United States to break the gold peg and undermining the role of the dollar as an international currency.<sup>266</sup> Triffin wound up being correct about the United States being compelled to break the gold peg,<sup>267</sup> but wrong about the consequences of this for the dollar's international status. Richard Nixon took the dollar off the gold standard in 1971,<sup>268</sup> but to the surprise of many observers, this step did not undermine the dollar at all: "Paradoxically, once free from the shackle of a fixed gold parity, the use of the [U.S.] dollar as an international currency soared to unprecedented levels."<sup>269</sup> Why might this be the case? Perhaps the best explanation is captured by Adam Tooze's aperçu cited above, that it does not matter that the dollar isn't backed by gold or some other metal, because it is backed by the whole economy.<sup>270</sup>

Despite this history, some believe Triffin captured the essence of a problem that will inexorably lead to the demise of the dollar *qua* international currency as the U.S. economy's *relative* share of global GDP lessens: "the

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<sup>265</sup> ROBERT TRIFFIN, GOLD AND THE DOLLAR CRISIS: THE FUTURE OF CONVERTIBILITY 2 (1961). For a good intuitive account of why the stock of money can have a profound effect on real economic activity, see Paul Krugman, *Baby-Sitting the Economy*, SLATE (Aug. 14, 1998), <https://slate.com/business/1998/08/baby-sitting-the-economy.html>.

<sup>266</sup> TRIFFIN, *supra* note 265. Triffin also predicted, incorrectly, that the run on U.S. gold holdings would "lead the [U.S.] monetary authorities to tighten monetary policy, ushering in global deflation and, in the face of nominal rigidities, global depression." Bordo & McCauley, *supra* note 149, at 3-4.

<sup>267</sup> *But see* Bordo & McCauley, *supra* note 149, at 8-12 (arguing that Triffin was right about the Fed breaking the gold peg only by accident, and that the Bretton Woods system would have been sustainable far beyond the breaking point Triffin predicted with better management by U.S. monetary authorities).

<sup>268</sup> Sandra Kollen Ghizoni, *Nixon Ends Convertibility of U.S. Dollars to Gold and Announces Wage/Price Controls: August 1971* (Nov. 22, 2013), <https://www.federalreservehistory.org/essays/gold-convertibility-ends>.

<sup>269</sup> Gourinchas et al., *The International Monetary and Financial System*, *supra* note 150, at 3-4.

<sup>270</sup> *Supra* note 57 and accompanying text.

financial fragilities inherent in a hegemonic system have not disappeared: the Triffin dilemma is still with us, albeit in a subtly different form.”<sup>271</sup>

*The New Triffin Dilemma.* Gourinchas and his coauthors argue that the original Triffin dilemma was a special case of a more general problem:

Fundamentally, the Triffin dilemma is about the magnitude of the *gross stock* of liquid dollar liabilities held abroad (necessary to lubricate the international payment system) and the possible loss of confidence in the value of the dollar by foreign investors, whether due to policies, sentiment, or fundamentals (e.g. relative size of the hegemon in the world economy).<sup>272</sup>

They argue that the situation today is not so different from the 1960s:

[I]n a world where the United States can supply the international currency at will and invests it in illiquid assets, it still faces a confidence risk. There could be a run on the dollar not because investors would fear an abandonment of the gold parity, as in the 1970s, but because they would fear a plunge in the dollar exchange rate. In other words, Triffin’s analysis does not have to rely on the gold-dollar parity to be relevant.<sup>273</sup>

They call this the “New Triffin dilemma.”

It is hard to quibble with the claim that the world *could* lose confidence in the dollar, undermining its ability to function as an international currency.<sup>274</sup> A number of factors could lead to a shift away from the dollar as a settlement and reserve currency, and this could lead to a downward spiral in the dollar’s value vis-à-vis other currencies. I do not believe, however, that the analogy to the 1960s is as tight as Gourinchas and Rey imply, nor that the United States’ shrinking share of world GDP will *inevitably* lead to a run on the dollar in the same way that the mismatch between global economic growth and the supply of gold made the Bretton-Woods system inherently unstable.

The premise of the New Triffin Dilemma that I question is that the dollar must be backed by the *fiscal* capacity of the U.S. government.<sup>275</sup> The assumption

<sup>271</sup> Gourinchas et al., *The International Monetary and Financial System*, *supra* note 150, at 4.

<sup>272</sup> *Id.* at 33.

<sup>273</sup> Gourinchas & Rey, *From World Banker to World Venture Capitalist*, *supra* note 147, at 35.

<sup>274</sup> Indeed, this insight is a large part of what motivates this Article: loss of confidence in *certain* dollar liabilities in the hierarchy of dollar claims is what causes panics, the central problem of financial stability.

<sup>275</sup> Gourinchas et al., *The International Monetary and Financial System*, *supra* note 150, at 34 (“During times of global crisis, [U.S.] government bonds are at present the only assets able to provide insurance on a large scale.”).

is that when there is turmoil in the global financial markets and a general “flight to safety,” the asset everyone flies to is U.S. Treasuries—but, Gourinchas and coauthors argue, just as there was an asymmetry in the waning years of Bretton Woods between U.S. gold stock and dollar demand abroad, today “there is a growing asymmetry between the fiscal capacity of the United States (the ‘backing’ of [U.S.] Treasury bills and bonds) and the stock of liquid dollar debt held abroad.”<sup>276</sup> This could undermine confidence in the dollar, leading ultimately to a run from the dollar.<sup>277</sup>

It is true that toward the end of the twentieth century and at the beginning of this one, the foundation of the dollar system was Treasuries: they were the dollar asset of choice for foreign central banks and they were the asset the Fed itself overwhelmingly purchased when creating new base money.<sup>278</sup> They continue to play an important role in the world economy. They are not, however, the *core* safe asset: the core safe asset is just the dollar—the unit of account that defines the liabilities on the Fed’s balance sheet, and which serves as the benchmark for all dollar liabilities in the hierarchy described in section I.F. Treasuries were and are desirable in large part because they can be *turned into dollars*—the true core safe asset—seamlessly by selling into the world’s deepest, most liquid market.<sup>279</sup> That it is dollars themselves, not Treasuries, that

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<sup>276</sup> *Id.*

<sup>277</sup> Gourinchas and coauthors argue:

Just like the Bretton Woods system collapsed with a run on the dollar, the international monetary and financial system could witness a loss of confidence in the value of [U.S.] debt. As the demand for dollar liquidity keeps growing but the relative size of the United States shrinks in the world economy, a new run on the dollar into one or several alternative reserve currencies could be possible. On the one hand, large stocks of dollar liquidity held abroad relative to the size of the United States may lead to a loss of confidence in the dollar; on the other hand, too little international dollar liquidity would fail to lubricate the functioning of international financial markets.

*Id.* at 35.

<sup>278</sup> See, e.g., *Large Scale Asset Purchases*, FED. RESERVE BANK OF N.Y., <https://www.newyorkfed.org/markets/programs-archive/large-scale-asset-purchases> (last visited Jan. 20, 2024) (“Outright purchases or sales of Treasury securities were used historically as a tool to manage the supply of bank reserves to maintain conditions consistent with the federal funds target rate set by the FOMC.”).

<sup>279</sup> The market for U.S. Treasuries is not, of course, infinitely liquid, as the market events at the outbreak of the COVID-19 pandemic in March 2020 starkly illustrated. See Sebastian Infante & Zack Saravay, *Treasury Market Functioning During the COVID-19 Outbreak: Evidence from Collateral Re-use*, FEDS NOTES (Dec. 4, 2020), <https://www.federalreserve.gov/econres/notes/feds-notes/treasury-market-functioning-during-the-covid-19-outbreak-evidence-from-collateral-re-use-20201204.html> (“In March 2020, uncertainty over the COVID-19 pandemic caused severe stress in U.S. financial

matter at the most fundamental level was illustrated by the fact that when there were large-scale liquidations of Treasuries at the onset of the COVID-19 pandemic, in March 2020, the Fed was able to calm markets by serving as the purchaser of last resort.<sup>280</sup>

Another way of making the point is to note that the old Triffin Dilemma arose in a world where the *ultimate* value of dollars derived from their convertibility to gold. The analogy to Treasuries breaks down here, as it is not the case that dollars are valued today because they can be turned into Treasuries; rather, Treasuries are valued because they can be turned into dollars. (Of course, short-term Treasury bills meet our definition of “money claim,” but they are not base money and do not sit at the top of the dollar hierarchy.) The global financial system is a dollar system, not a Treasury system.<sup>281</sup>

The dollar does of course need a fiscal anchor: this is a key part of how we can trust it will avoid the sort of sudden shift in equilibrium expectations and death spiral that haunt the long-term prospects of various cryptocurrencies.<sup>282</sup> It does not follow, however, that in order to prevent a shift from a “good” to a “bad” equilibrium, the size of the fiscal anchor needs to be proportionate to the money supply more generally.

Another possible way to understand the role of the fiscal anchor is that the Fed’s traditional focus on Treasury purchases when augmenting the base supply of dollars requires an adequate supply of Treasuries for the system to operate. For good or ill, however, the Fed no longer focuses its open market operations (almost) exclusively on the Treasury market: with the GFC and the market disruptions of 2020, the Fed has expanded the range of assets on its balance sheet—not least through the operation of the swap lines it has opened with foreign central banks.<sup>283</sup> This is not to question the continued importance of deep, liquid Treasury markets to either the Fed’s monetary policy implementation or dollar dominance more generally; it does suggest, however, that there are ways to sustain dollar dominance without *necessarily* requiring rough proportionality between the supply of dollars and the supply of Treasuries. As Michael Bordo and Robert McCauley have argued, the “assumption that only fiscal deficits can add to the supply of safe assets is too

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markets. Most notably, the U.S. Treasury market, amongst the deepest and most liquid financial markets in the world, experienced a sharp deterioration in liquidity conditions.”).

<sup>280</sup> See *id.* (noting that market disruptions in Treasuries “prompted the Federal Reserve to take emergency actions, expanding its repo operations and Treasury purchases, significantly alleviating market stress”).

<sup>281</sup> I am grateful to Perry Mehrling for suggesting this formulation of the point.

<sup>282</sup> See *supra* note 59 and accompanying text.

<sup>283</sup> See *supra* notes 102-104 and accompanying text.

limiting.”<sup>284</sup> The U.S. Treasury, they continue, “has plenty of competition among various government-backed entities in providing safe dollar assets, whether housing agencies at home, supranational and regional organi[z]ations, sovereigns or provincial borrowers abroad and their agencies or even banks that are not demonstrably not [sic] too big to fail.”<sup>285</sup>

A third possible way to understand the role of the fiscal anchor focuses on the role of the U.S. government in backstopping the value of the dollar; one might argue that to plausibly serve this role, the government requires fiscal capacity commensurate with its potential liabilities in the event of widespread bank failures. Here, too, I am skeptical that the U.S. government’s backstopping role will *inevitably* undermine the dollar dominance in the same way that the limited supply of gold spelled doom for the dollar-gold peg in the Bretton Woods era. One reason is that imaginative crisis responses, whatever other problems they may create, can limit the direct fiscal cost to the U.S. government, even in the event of massive bailouts of failing financial institutions. For example, while the bailout of the savings and loan crisis at the end of the 1980s required the government to assume more than \$100 billion in direct fiscal costs,<sup>286</sup> the various emergency lending or guarantee programs the U.S. government implemented during the GFC turned an accounting profit for the government.<sup>287</sup> Second, when the Fed lends to other central banks via currency swaps, the other central banks take the credit risk of on-lending those dollars to their domestic financial institutions, thereby reducing the fiscal commitment of the United States to backstop all dollars.<sup>288</sup>

Nothing in this analysis is meant to imply that we should be cavalier about the (in)solvency of dollar-issuing entities backstopped by the U.S. government, or that widespread defaults by dollar-issuing financial institutions could not undermine the dollar’s status, but there is not the same type of *inherent* instability in this system as that which was created by the gold peg under Bretton Woods. The key is that the dollar must *ultimately* be matched with assets that maintain

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<sup>284</sup> Bordo & McCauley, *supra* note 149, at 25.

<sup>285</sup> *Id.* at 28; *see also id.* at 27 (“The reserve-issuing country does not even enjoy a monopoly on the production of safe assets even in its own currency.”).

<sup>286</sup> *See, e.g.,* Crawford, *Resolution Triggers*, *supra* note 65, at 93.

<sup>287</sup> *See, e.g.,* John Crawford, *The Moral Hazard Paradox of Financial Safety Nets*, 25 CORN. J.L. & PUB. POL’Y 95, 120-21 (2015).

<sup>288</sup> I am grateful to Nadav Peer for this observation (without implying agreement on every point in the argument). Of course, this assumes that the foreign central banks will make good on their repayment promises even if those they lend to default—probably a safe assumption in most states of the world. If a central bank defaulted on its swap arrangement with the Fed, however, its “collateral” (a credit to the Fed’s account at the foreign central bank in the foreign currency) would presumably not make the Fed whole.

their value; this may include long-term bonds from fiscally healthy governmental units, but may also include assets such as long-term bonds from viable domestic and foreign businesses, or swap lines with creditworthy foreign central banks. This poses risks!<sup>289</sup> Part of the motivation for this project is to ensure that there is a good match between dollar issuance and the assets held to back them. And the core argument of this paper is that there *is* a tension between controlling dollar issuance and maintaining the dollar's preeminent status. It is certainly possible that a sufficiently grave mismatch between dollars and the assets backing the dollar system could, at some point, drive a loss of confidence and a plummet in the dollar's value vis-à-vis other currencies. But this is not inevitable in the same way that breaking the gold peg was because the base money at the core of the dollar system can be backed by a universe of assets that extends beyond Treasuries.

*Multipolarity vs. Dollar Hegemony.* Assuming noncooperative multipolarity is plausible but not inevitable, the question becomes whether it would mark an improvement over the current global dollar system. From the U.S. perspective, it would reduce the various advantages of dollar dominance, including funding costs and foreign policy leverage, but it would also reduce the magnitude of the challenge facing the United States if it desires to control the issuance of dollars. From a global perspective, it would reduce the depth and liquidity of money markets in the dominant currency, but could also reduce the disruptive spillover effects from sudden changes in the relative strength of the dollar. In terms of global stability, runs and panics can occur in the euro or renminbi as easily as in the dollar, and there is no reason to think that other central banks will manage such threats better than the Fed does. While the answer appears to be a mixed bag, two points are worth bearing in mind. First, even if it is possible to model a multipolar system that marks a net improvement over the status quo, there is no guarantee that that is the system that would emerge if the dollar stumbles; this counsels caution in taking steps that would undermine dollar dominance. Second, even if the United States relinquishes its global dominance and becomes a regional hegemon, the same basic tension in its monetary policy priorities will exist, albeit in a somewhat attenuated form, and the tradeoffs involved in the policy approaches considered in Part III will basically be the same.

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<sup>289</sup> See, e.g., Bordo & McCauley, *supra* note 149, at 27 (“Production of safe assets . . . needs to be done with care. Government guarantees that are not supervised produce moral hazard and turn a possibly self-financing business into a call on the government’s taxing power.”).

*c. Assessing Dollar Hegemony: Upshot*

Dollar hegemony is not an unalloyed good, but there are reasons to believe its benefits outweigh its costs, particularly for the United States; and that its drawbacks would not be ameliorated, and may even be exacerbated, by the plausible alternatives. U.S. policymakers should adopt a semi-strong presumption in favor of preserving the dollar's status—not giving it lexicographical priority over every other policy objective, but supporting its position where possible.

**III. REFORM APPROACHES**

The question at the heart of this Article is how to reform the international monetary system to bolster stability, without the Fed writing a blank check to support offshore dollar creators in moments of crisis, and without carelessly jettisoning the net benefits of dollar hegemony.

I examine potential reform approaches along several dimensions, including how effective they are likely to be to directly achieve their goals; whether and to what degree they might weaken dollar dominance; and their potential impact on popular legitimacy of the Fed and foreign central banks.

Note that there is a long history of countries implementing capital controls to try to limit the *use* of their currency abroad.<sup>290</sup> This is inadvisable,<sup>291</sup> and not the project of this piece. Money *issuance*, not (just) its use, is the core problem of financial stability; specifically, how to manage the risk of runs on money liabilities, while addressing the negative implications for equity and efficiency that can arise from providing a financial safety net.

The challenge in the international sphere is analogous to the problem the United States faces in its domestic shadow banking system. With both domestic shadow banking and offshore dollar creation, the Fed's response to the GFC and the COVID-related market disruptions of 2020 make it clear that it has the wherewithal to address running the risk with essentially unlimited liquidity support.<sup>292</sup> It can do so directly in the United States via Section 13(3) lending, and indirectly for offshore dollar markets through its swap lines with sister

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<sup>290</sup> See, e.g., Stephen A. Fowler, *The Monetary Fifth Column: The Eurodollar Threat to Financial Stability and Economic Sovereignty*, 47 VAND. J. TRANSNAT'L L. 825, 852 (2014) (describing steps taken by the United Kingdom in the decades after World War II to limit the offshore *use* of the pound sterling).

<sup>291</sup> See, e.g., Forbes, *supra* note 172.

<sup>292</sup> See generally Menand, *The Federal Reserve*, *supra* note 72.



central banks.<sup>293</sup> While the Fed’s willingness and ability to act has saved the global financial system from calamity over the past decade-and-a-half, it also, as noted above, creates a variety of problems.<sup>294</sup>

The first set of problems relates to fairness and legitimacy: entities that issue money claims are able to fund their portfolios more cheaply due to the seigniorage profits from money creation. When and if these entities run into problems, they may receive support from the government. Unlike chartered U.S. banks, however, they have not subjected themselves to the full set of prudential regulations and supervision, and do not pay deposit insurance fees. Extending the bank safety net to entities that do not submit to banking regulation, pay deposit insurance fees, and so on, is inherently problematic and may undermine the popular legitimacy of monetary authorities—particularly when many other businesses are failing without government support.<sup>295</sup> It could also, as noted, lead to political pressure that would prevent the central bank from responding to a crisis promptly, resulting in severe economic damage.<sup>296</sup>

A second set of problems relates to efficiency. Because issuing money claims backstopped (even if implicitly) by the government leads to cheap, subsidized funding for shadow banks, the activities and investment choices of these entities are likelier to destroy social wealth. It may be the case, for example, that the expected return on a given project is attractive only due to the subsidies that government-underwritten private seigniorage provides.<sup>297</sup>

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<sup>293</sup> *Id.*

<sup>294</sup> See Stiglitz, *supra* note 66.

<sup>295</sup> See, e.g., Greg Ip et al., *Lessons for the Coronavirus Crisis from Six Other Disasters*, WALL ST. J. (Mar. 20, 2020), <https://www.wsj.com/articles/lessons-for-the-coronavirus-crisis-from-six-other-disasters-11584719497> (“The [GFC] . . . left a legacy of deeply divided politics. Though TARP turned a profit for the government, much of the public saw it as a bailout for the very people who caused the crisis, sentiments which gave rise to the Tea Party on the right and Occupy Wall Street on the left.”); Paul Romer, *The Dismal Kingdom*, FOREIGN AFFS. (Feb. 11, 2020), <https://www.foreignaffairs.com/reviews/dismal-kingdom> (The GFC “caused a massive and long-lasting reduction in incomes across the world—and perhaps an even longer-lasting populist backlash against the political institutions of many countries.”); Michiko Kakutani, *The 2010s Were the End of Normal*, N.Y. TIMES (Dec. 27, 2019), <https://www.nytimes.com/interactive/2019/12/27/opinion/sunday/2010s-america-trump.html> (“Trust in government had been in sharp decline in previous decades . . . [b]ut the lingering fallout of the 2008 crash . . . ignited rage against the elites and the status quo.”).

<sup>296</sup> See, e.g., TIMOTHY F. GEITHNER, STRESS TEST: REFLECTIONS ON FINANCIAL CRISES 432 (2014) (“We saw in 2008 that even after the panic induced by Lehman and the falling dominos that followed, the House rejected TARP and crashed the markets before coming to its senses. Politicians don’t like taking votes that can be caricatured as pro-bailout.”).

<sup>297</sup> See *supra* notes 154–158 and accompanying text.

(This problem can be offset in the regulated banking sector by prudential oversight and risk-adjusted deposit insurance premia.) Without the subsidy—which reflects costs borne by society as a whole and not internalized by the decision-makers—it is possible that the unregulated money-creating entity would determine that at least some of its investments do not pass the cost-benefit test.<sup>298</sup>

An overlapping problem may arise if the entity's equity cushion is extremely thin, or negative—a not infrequent occurrence in the history of banks and shadow banks.<sup>299</sup> In such a scenario, the decision makers at the bank may have an incentive to “gamble for resurrection” —that is, invest in projects that have a high enough upside to help the entity recover financial health in the event they work out, but a much higher chance of failure, and/or more severe losses in the event of failure.<sup>300</sup> Because of limited liability, the decision-makers may not fully internalize the risk of loss in their decision-making calculus. The classic example of this dynamic in U.S. history is the S&L crisis of the 1980s—for years, banks threw good money after bad, trying to dig out of a hole that grew deeper and deeper until it required a massive government bailout.<sup>301</sup>

The upshot of all this is that it is important not only to prevent panics, but to address the potential costs in terms of equity and efficiency that arise as side effects of a safety net.

### A. Principles for an Ideal Regulatory Approach

From a stability perspective, the ideal approach to reforming the offshore dollar market would consist of both enabling and disabling elements. The enabling element would ensure adequate dollars are created through licensed entities that submit to adequate prudential rules and oversight, and with formal access to the safety net. The disabling element would restrict entry into dollar issuance to just those entities that are so licensed. The enabling approach would ensure safe options for the creation and use of the dollar around the world, while the disabling approach would prevent *unsafe* options for dollar creation

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<sup>298</sup> See, e.g., Adam J. Levitin, *Safe Banking: Finance and Democracy*, 83 U. CHI. L. REV. 357, 427 (2016) (arguing that if eliminating government-underwritten subsidies for banks led to a contraction in lending, this would constitute a “right-sizing, because the level of credit would reflect risk-internalized pricing rather than subsidization”).

<sup>299</sup> See, e.g., Crawford, *Resolution Triggers*, *supra* note 65, at 87-93.

<sup>300</sup> *Id.*

<sup>301</sup> *Id.* One could also point to the housing bubble of the early-to-mid aughts—fueled in no small part by the use of mortgages as collateral for money claims in the shadow banking system—as a situation in which unfettered money creation led to severe misallocations of capital.

from proliferating. As we consider different approaches, we should also bear in mind their potential effects on the dollar's international status, and on the public perceptions of legitimacy of the U.S. dollar system.

## **B. Enabling Approaches**

I assume that the position of the dollar as an international currency should be supported, so it is important that people and entities around the world continue to be able to hold dollars in forms such as bank accounts. It is also important that dollars serve not just as a medium of exchange, but that non-U.S. persons and entities be able to borrow in dollars for a variety of purposes. Without such borrowing, the dollar's utility would fall significantly; consider, for example, the non-U.S. manufacturer buying dollar-denominated intermediate goods before selling dollar-denominated final goods in international markets. Without dollar-denominated credit to bridge the gap between the purchase of intermediate goods and the sale of final goods, the extra cost of dollar invoicing could outweigh the utility of dealing in the vehicle currency. A further reason why non-U.S. persons' and entities' ability to borrow in dollars is important for maintaining the dollar's international status is the New Triffin Dilemma discussed above,<sup>302</sup> and the need for non-U.S. assets to support dollar creation as the U.S. proportionate share of global GDP recedes.

Once one acknowledges the need for dollar credit for non-U.S. borrowers, the question becomes how to permit such activities—currently a mainstay of offshore fractional reserve banking—while recapturing U.S. control over dollar creation.

The current institutional set-up involves both traditional banks located in other countries issuing dollar-denominated deposits,<sup>303</sup> as well as the issuance of deposit equivalents by offshore shadow banks.<sup>304</sup> Underlying it all are the central bank swap lines that allow the Fed to serve as global lender of last resort, albeit without all the moral hazard mitigants traditional banking regulation provides. I argue, on the one hand, that the status quo is not conducive to U.S. control over dollar issuance in a way that prevents both panics and bailouts. On the other hand, maximizing U.S. control over dollar issuance may not be conducive to maintaining dollar hegemony. I sketch below in broad strokes

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<sup>302</sup> See *supra* notes 271-289.

<sup>303</sup> See, e.g., Menand, *The Federal Reserve*, *supra* note 72, at 312 (“The simplest type of eurodollar is a dollar deposit, a bank account denominated in dollars, maintained by a bank outside of the United States.”).

<sup>304</sup> See *supra* notes 106-116.

three potential approaches to supplying dollars to non-U.S. persons and entities.

The “maximal control” approach would require any entity issuing dollar-denominated money claims to submit to direct regulation and supervision by U.S. banking authorities. This type of regulatory imperialism would be inadvisable for at least two reasons. First, it would likely stretch U.S. supervisory capacity beyond its natural breaking point. The question is not simply one of staff resources; it is also one of country-specific market knowledge. As Daniel Tarullo has noted, “exposures and vulnerabilities in a host-country market are much more difficult for home-country supervisors to assess.”<sup>305</sup> Second, such an approach would likely irritate allies and foes alike, significantly complicating efforts to implement the disabling approach discussed below, while creating a significant incentive for even allies to affirmatively pursue policies to develop alternatives to the dollar.

A second, intermediate approach could be described as “narrow eurodollar-banking.” It would allow foreign-regulated banks to obtain a license from U.S. authorities to make dollar-denominated loans and to maintain dollar accounts for their customers but would limit dollar *creation* to U.S. entities. For every dollar deposit the foreign bank issued, it would be required to hold a matching dollar in an account with a U.S. bank. (The foreign bank could be a subsidiary or branch of a U.S.-based parent; or it could itself be the parent of a U.S.-based branch or subsidiary;<sup>306</sup> or it could simply maintain a correspondent account with a U.S. bank.) Alternatively, the United States could establish a trust or trusts, regulated by the Federal Reserve and devoted to extending dollar credit to licensed foreign banks. The foreign bank would then become a sort of “narrow bank,” or 100-percent reserve bank, with respect to its dollar-denominated deposit liabilities. It would lend and borrow *pre-existing* dollars but would not *create* dollars.

U.S. banks (or a trust) would create the dollars by extending credit to the foreign bank, just as they create dollars when they make loans to any other business or person under a fractional reserve model.<sup>307</sup> The dollar-creating U.S.-based entities would be subject to the full panoply of U.S.-based prudential regulation, pay deposit insurance fees, and benefit from the U.S.

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<sup>305</sup> BARR ET AL., *supra* note 67, at 825.

<sup>306</sup> On the distinction between branches (which are not separate entities from their parents for most purposes) and subsidiaries (which are separate entities), *see generally id.* at 801-05.

<sup>307</sup> Sections 23A and 23B of the Federal Reserve Act place limits on banks’ ability to extend credit to affiliate entities, but include a “sister bank exemption” from most quantitative limits when two affiliate banks share the same parent. *See id.* at 230-41.

safety net.<sup>308</sup> This arrangement could address the panic problem: the 100-percent reserve requirement would solve the run problem for the foreign bank; and full deposit insurance could solve the run problem for the U.S. bank. This would mark an improvement over the status quo insofar as the discretionary aspect of Fed support means that some risk of runs and panics persists in the current system. By itself, however, this approach would not resolve the inefficiencies that can arise from a no-strings-attached extension of the safety net to the entire dollar system.<sup>309</sup>

To address the knock-on efficiency and fairness problems the safety net can create, it would be important to ensure, first, that U.S.-based prudential standards are adequate as they apply to U.S. banks and U.S. affiliates of foreign-owned banks. A great deal of work has gone into this since the GFC,<sup>310</sup> but some critics believe more could be done. Jeremy Kress, for example, has zeroed in on the higher prudential standards that apply to subsidiaries vis-à-vis branches of foreign banks and suggested that the higher prudential standards should apply across the board.<sup>311</sup> Ensuring adequate prudential supervision of the U.S.-based entity will not be enough, however; it is also important to ensure that foreign banks dealing in dollars are subject to adequate supervision in their home country, to minimize the possibility that they will take on too much risk in their lending and be unable to repay their dollar loans from their U.S. affiliates.<sup>312</sup>

The United States already requires that foreign banks be subject to “comprehensive and consolidated supervision” by their home country regulator before they can open branches or subsidiaries in the U.S.<sup>313</sup> The United States does not, however, assess the comparability of the home

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<sup>308</sup> Note that U.S.-based affiliates “upstreaming” dollars to foreign banks is a well-established practice: such affiliates lent to their parents in great quantities leading up to the GFC, and were among the most active borrowers at the Fed’s discount window in 2008. *See, e.g., id.* at 817 (“[F]oreign banks accounted for approximately 70% of the \$110 billion borrowed at the discount window during the first week of October 2008.”).

<sup>309</sup> *See supra* notes 292-301 and accompanying text.

<sup>310</sup> *See generally* BARR ET AL., *supra* note 67, at 814-21.

<sup>311</sup> Jeremy C. Kress, *Domesticating Foreign Finance*, 73 U. FLA. L. REV. 951, 1026-31 (2021).

<sup>312</sup> Note that the 100-percent reserve requirement for foreign banks would use the dollar-denominated *customer* deposits at the foreign bank as its denominator. When the U.S. bank makes the dollar loan to its foreign affiliate, it enables the foreign affiliate to make a dollar loan to a customer by crediting the customer’s account. When the customer withdraws that money, the foreign bank’s dollar reserves *and* dollar deposit liabilities shrink, but its own (longer-term) dollar liability to the U.S. affiliate remains.

<sup>313</sup> BARR ET AL., *supra* note 67, at 814.

country's regulatory standards.<sup>314</sup> At a minimum, if it established a system in which only licensed, "narrow" non-U.S. banks could issue money claims, it should ensure the home country's prudential standards are "substantially equivalent" to those of the United States before issuing licenses in a given jurisdiction.<sup>315</sup>

As with the first approach outlined above, there is a balance U.S. authorities must strike between recapturing monetary control, on the one hand, and asserting a regulatory imperialism that creates a backlash and ultimately erodes the dollar's status. Either way, for this second approach to be successful, the United States would have to trust in and cooperate with foreign regulators, ceding a degree of control.<sup>316</sup>

A third approach would aim to tighten up the current enabling set-up at foreign depository banks rather than overhauling it. (It should be emphasized that when combined with the disabling project discussed below, this approach would still be part of a thoroughgoing reform effort.) Relative to the second approach discussed above, this third approach would acquiesce to more control remaining in the hands of cooperating foreign regulators, but it would also be less likely to incentivize proactive efforts to replace the dollar. This approach would bolster the current system by limiting dollar-denominated fractional reserve banking to those banks that are subject to prudential rules and supervision deemed to be substantially equivalent to the U.S.; and only so long as the central bank of the country with jurisdiction has a standing swap line agreement with the Federal Reserve. Such banks would require a license issued by U.S. regulatory authorities, and the license could be subject to periodic review. Ideally, the Fed would also charge fees, or premiums, for the central bank swap lines even when they are not in use, recognizing the implicit insurance function the Fed would be providing. An alternative (or supplemental) way of understanding such a fee would be as an instrument for controlling the global supply of dollars, insofar as the Fed stood ready to raise rates for central banks whose domestic banking system was (in the Fed's view) oversupplying dollars. In any event, this third approach would involve tightening standards and coordination along several dimensions but would otherwise map fairly well onto the current state of one corner of the eurodollar market.<sup>317</sup>

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<sup>314</sup> See *id.* at 814-15 (comparing the U.S. approach with the European regime of "substantial equivalence").

<sup>315</sup> *Id.*

<sup>316</sup> See *supra* note 305 and accompanying discussion.

<sup>317</sup> For example, most countries (including the countries with whom the Fed has established currency swap lines, *supra* note 104) have implemented some version of the capital and

These latter two approaches are both viable, but I would favor the third approach for two reasons. First, if it is well-designed, such an approach could yield similar benefits in terms of panic prevention, moral hazard mitigation, and the provision of useful instruments for the implementation of monetary policy. Second, by demanding less of a change from the current system, and leaving a bit more direct control in the hands of foreign regulators, it could foster a greater spirit of cooperation, which could prove essential to the successful implementation of the disabling approaches discussed below.

As a final note on the enabling approaches, some may object that bringing all this money creation under the Fed's aegis would unwisely expand the Fed's remit. It is important to emphasize, however, that the offshore dollar market is already, in turbulent times, the Fed's problem.<sup>318</sup> The Fed currently exercises little control over the magnitude and contours of the problems it must inevitably face in a global dollar crisis; these approaches aim to provide some such *ex ante* control. The great challenge, of course, is how to ensure that *only* appropriately licensed and regulated entities can issue dollar-denominated money claims. Here again, there is a close analogy to the challenges of domestic shadow banking and the question of whether entry restriction into money creation is feasible.

### C. Disabling Approaches

Even if we got all advanced economies on board with the enabling aspect of the proposal, such efforts may come to naught if we fail to prevent entities that are not part of this system from issuing dollar-denominated money claims.

The ideal reform approach would thus require any entity that wishes to *create* dollars to abide by the “Spiderman principle”—with great power (the ability to issue dollars underwritten by the government safety net) comes great responsibility (submitting to prudential oversight, paying deposit insurance

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liquidity requirements set out in the Basel accords. *See generally* Stefan Hohl et al., *The Basel Framework in 100 Jurisdictions: Implementation Status and Proportionality Practices*, FIN. STABILITY INST. OF THE BIS: INSIGHTS ON POL'Y IMPLEMENTATION NO. 11 (Nov. 2018), <https://www.bis.org/fsi/publ/insights11.pdf>; BARR ET AL., *supra* note 67, at 325-44.

<sup>318</sup> As former Fed employee Joseph Wang has observed,

The on-shore and off-shore dollar systems are closely connected, as off-shore banks with dollar needs can borrow in the on-shore market and in the process push up on-shore dollar interest rates. Off-shore banks lack stable sources of dollar funding and are prone to bid up dollar funding rates in a crisis. This means that the Fed cannot control short-term dollar rates without also having a footprint in the off-shore dollar world.

Joseph Wang, *China Repo Facility* (Aug. 16, 2021), <https://fedguy.com/china-repo-facility>.

premiums, and so on).<sup>319</sup> The logic of requiring U.S. banks to submit to this system is compelling;<sup>320</sup> it is deeply problematic that we allow other entities to arrogate to themselves the same privilege of money creation *without* undertaking the same commitments.

It is worth addressing upfront two potential objections to any approach that would proactively attempt to restrict unlicensed dollar issuance. The first objection, which tends to be put forward by those who exhibit what former Treasury Secretary Timothy Geithner has called “moral hazard fundamentalism,”<sup>321</sup> is that such efforts are unnecessary and inefficient and that the problem they target would dissolve if we just let banks fail. In this view, by removing the safety net, money claimants will exert “discipline” on banks and shadow banks so effectively that the safety net will no longer be needed.<sup>322</sup> (Some money-creating entities might wither away, proponents of this view might argue; others will be driven by market forces to invest prudently, so as to preclude a run; and if runs do occur, they would be self-contained and an example of the market “working.”) As I have argued elsewhere, this is not a plausible solution.<sup>323</sup> Among other problems with this view, uninsured money claimants are lousy disciplinarians, as they “have just two modes, complete inattention or total panic.”<sup>324</sup> It is also worth recalling that U.S. banking operated without a safety net throughout the nineteenth century, but this did not prevent disastrously damaging panics from occurring with disturbing frequency.<sup>325</sup> In a game of “chicken,” with private actors in the shadow banking sector taking risks that could lead to a panic, and monetary authorities signaling they *won't* do bailouts, monetary authorities will usually lose, and they *should* lose, as the results of an unchecked panic can be so catastrophic.<sup>326</sup> Knowing this, rational actors will continue playing chicken—if they are permitted to do so. The same is true for offshore dollar creation—an effort to commit to *not* providing liquidity assistance in a crisis would be unlikely either to significantly shrink the offshore dollar sector or prevent crises.

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<sup>319</sup> See *Spider-Man Principle*, HIST. DICTIONARY SCI. FICTION, <https://sfdictionary.com/view/2588/spider-man-principle> (last updated Dec. 5, 2021).

<sup>320</sup> See generally RICKS, *supra* note 29.

<sup>321</sup> GEITHNER, *supra* note 296, at 178.

<sup>322</sup> See, e.g., Crawford, *Moral Hazard Paradox*, *supra* note 287, at 101-02.

<sup>323</sup> *Id.* at 132-35.

<sup>324</sup> Bill Dudley, *More Deposit Insurance Won't Make Banks Safe*, BLOOMBERG (July 5, 2023, 5:00 AM), <https://www.bloomberg.com/opinion/articles/2023-07-05/more-deposit-insurance-is-no-way-to-make-banks-safe?embedded-checkout=true>.

<sup>325</sup> See Crawford, *Moral Hazard Paradox*, *supra* note 287, at 132-35.

<sup>326</sup> See *supra* note 63.



A second common objection to restricting entry into money creation is that the restrictions would be evaded through regulatory arbitrage. In terms of technical implementation, however, it should be as easy to police arbitrage efforts in the creation of money as it is to police efforts to evade any other type of financial regulation.<sup>327</sup> Just as the existence of counterfeit bills does not prove the futility of restricting the manufacture of physical currency to authorized government entities, the possibility that there may be *some* (successful) efforts to evade entry restrictions for money creation does not prove the futility of such restrictions. The key to such a program would be defining money functionally and tracking and regulating its creation; this should present no greater difficulty than, for example, defining what securities are, and regulating their issuance.<sup>328</sup> Again, one of the essential features of private money as we have defined it is that it is run-prone; as economist John Cochrane has argued, “[d]etecting hidden run-prone financing . . . is an order of magnitude easier than current [forms of financial regulation].”<sup>329</sup>

It must be admitted, however, that policing *offshore* money creation poses challenges beyond what would be required in the domestic sphere. In order to address these challenges, some have proposed an accord among advanced economies to suppress unlicensed dollar-denominated money creation, similar to the Basel accords, which have attempted, in three iterations, to coordinate bank capital requirements across participating countries.<sup>330</sup>

Even if there were an accord among advanced economies, in order to fill gaps in compliance with such a regime,<sup>331</sup> the United States would have to stand ready to use the same tools it uses to sanction foreign individuals and entities.<sup>332</sup> At a technical level, this would involve denying dollar-clearing and settlement services to rogue dollar issuers. As Rosa Lastra has observed, “to the extent that bank transfers in a particular currency involve clearing and settlement in the country of origin of the currency, the mechanisms of control [over offshore issuance] are reasserted.”<sup>333</sup> Most foreign dollar issuers *do* rely on entities under

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<sup>327</sup> See RICKS, *supra* note 29, at 234.

<sup>328</sup> *Id.*

<sup>329</sup> Cochrane, *supra* note 80, at 216.

<sup>330</sup> On the Basel accords, see BARRET AL., *supra* note 67, at 277-352. On proposals to adopt a similar approach to regulating the offshore dollar market, see RICKS, *supra* note 29, at 241; George H. Windecker Jr., *The Eurodollar Deposit Market: Strategies for Regulation*, 9 AM. U. INT'L L. REV. 357, 380-83 (1993).

<sup>331</sup> Such gaps may arise from those who sign the accord failing to enforce it, or from jurisdictions declining to join the accord at all.

<sup>332</sup> See *supra* Section II.B.3.

<sup>333</sup> ROSA MARIA LASTRA, INTERNATIONAL FINANCIAL AND MONETARY LAW pt. 1.69, at 25 (2d ed. 2015).

U.S. jurisdiction to clear their dollar claims; if U.S. authorities order these U.S. entities to deny dollar clearing services to a foreign entity that falls afoul of its rules, it will destroy the dollar-issuance business of the foreign entity.<sup>334</sup> Attempts to evade this through offshore intermediaries would ultimately fail in the face of determined enforcement efforts because of the hierarchical nature of dollar-denominated money claims: when push comes to shove, each type of dollar claim must be redeemable for some type of claim above it in the hierarchy, ultimately leading up to reserve accounts at the Federal Reserve.<sup>335</sup>

Imagine, for example, that offshore dollar clearance occurs at one remove so that a large entity outside U.S. jurisdiction clears dollar transactions for sanctioned entities. The clearing entity would *itself* still depend on being able to participate in the dollar hierarchy with the Fed at the top, but it could do so while providing opaque clearing services for rogue dollar creators. If the United States were serious about suppressing all unlicensed offshore dollar creation, it would have to take steps to track this sort of activity (the “panopticon” effect) and stand ready to impose so-called “secondary” sanctions on any such clearing entity (the “chokepoint” effect).<sup>336</sup> We already see examples of this dynamic when the United States imposes financial sanctions on foreign entities for foreign policy reasons. Lewis and Li note that an already-existing alternative to the dominant U.S. dollar clearing and settlement services is the Hong Kong-based service called Clearing House Automated Transfer System (CHATS), which provides, among many other services, dollar clearing:

Parties in Asia can use CHATS to complete payment transactions in real time without potential delays due to different time zones, and some legal scholars have argued that clearing U.S. dollar payments through CHATS could insulate the non-U.S. parties from U.S. long-arm jurisdiction since the payments are settled in Hong Kong and do not touch the U.S. banking system. . . . However, some Chinese banking experts are of the view that using CHATS may still not prove to be a suitable alternative U.S. dollar clearance channel for sanctions risk reduction purposes in all cases. *Because CHATS is operated by global banks with high levels of exposure to the U.S. banking system, they may be more conservative about processing U.S. dollar payments*

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<sup>334</sup> See, e.g., RICKS, *supra* note 29, at 239.

<sup>335</sup> See *supra* Section I.F.

<sup>336</sup> See *supra* Section II.B.3.a.iv.

*through CHATS which are potentially problematic to any degree from a U.S. perspective.*<sup>337</sup>

From a technical perspective, then, suppression of unlicensed offshore dollar creation is feasible and could rely on tools the United States already uses in implementing sanctions. From a political perspective, one can imagine that sanctioning an entity like CHATS for serving rogue dollar creators could irritate both adversaries and allies. To the degree that the United States wants to avoid undermining the dollar's status, this possibility highlights the importance of a Basel-like accord, to create political legitimacy—with allies, at least—for such enforcement actions. Without such an accord to develop legitimacy—and perhaps even with such an accord, albeit to a lesser degree—the U.S. reliance on this type of “financial excommunication” for primary and secondary violators of its restrictions on dollar issuance could (again) add significant straw to the proverbial camel's back, accelerating the day when the dollar loses its dominant position.<sup>338</sup>

Thus, in considering how to approach the suppression of offshore dollar creation, two questions that loom large are the degree to which dollar dominance in today's world depends on unlicensed offshore money creation and the degree to which we should fear what would follow if the dollar lost its preeminent position. As noted, my own view is that we should neither fetishize nor jettison dollar dominance; we should have a presumption in favor of maintaining it. And while unlicensed offshore money creation is not structurally required for dollar dominance, there are methods of suppression that are more likely to increase the motivation of those who would replace the dollar, and shift the cost-benefit analysis of those who are open to alternatives. The upshot is that suppression of unlicensed dollar creation should be a priority, but getting as much buy-in as possible from other advanced economies' regulators should also be a priority.

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<sup>337</sup> Lewis & Li, *supra* note 182 (emphasis added).

<sup>338</sup> For example, Robert Lewis and Li Li write that dollar dominance allows the U.S. to continue to threaten “financial excommunication” from the U.S. and global financial system, but U.S. dollar dominance would be severely undermined by the increased ease of circumvention of the U.S. banking system by the use of credible alternative transaction currencies. In fact, under such conditions, the continued overuse of unilateral secondary sanctions and threats of long-arm enforcement would merely serve to further drive down use of the U.S. dollar, potentially accelerating the decline in its importance. In practical terms, such a multipolar world would likely de-fang U.S. sanctions without resulting in the rise of a new currency hegemon to replace the U.S. dollar.

*Id.*

If other advanced economies resist a Basel-like accord with enforcement obligations, and if unilateral efforts by the United States are deemed to strike the wrong balance with respect to maintaining the dollar's status, there are various less aggressive measures that may nevertheless mark a marginal improvement over the status quo. It is worth briefly highlighting two such possible efforts.

*Crowding out.* If, for practical or political reasons, U.S. policymakers shy away from applying a sanctions regime to unlicensed offshore dollar creators, another possible way to mitigate the problems they create is to provide private market actors with better money claim options. This could have the effect of “crowding out” unstable shadow money claims.

The economists Robin Greenwood, Samuel Hanson, and Jeremy Stein have been in the vanguard of suggesting policy moves with crowding out as a goal, some of which have already been adopted in some measure. In the wake of the GFC, they proposed that in issuing public debt, the U.S. Treasury should skew towards more short-term bills rather than longer-term notes and bonds, in part to crowd out private-sector money-claim issuance.<sup>339</sup> (Again, short-term bills do not face the significant interest rate risk that long-term debt instruments do, and therefore they are much better candidates for transaction reserve assets.) More recently, they have proposed that the Federal Reserve (as opposed to the Treasury) use its balance sheet to crowd out private-sector money claim issuance:

[B]y influencing the relative yields on safe claims at the front end of the yield curve, a plentiful supply of central-bank liabilities—e.g., interest-bearing reserves or overnight reverse repurchase agreements (RRP)—*can reduce the economic incentives for private-sector intermediaries to engage in excessive amounts of maturity transformation.*<sup>340</sup>

In work proposing that the Federal Reserve permit U.S. citizens and entities to open up their own Federal Reserve bank accounts (“FedAccounts”), Morgan Ricks, Lev Menand and I echo Greenwood and his coauthors, and suggest that one effect of FedAccounts would likely be to crowd out shadow banking instruments, as many institutional money market players would prefer FedAccounts’ combination of safety and yield to anything a private entity could offer.<sup>341</sup>

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<sup>339</sup> See Greenwood et al., *A Comparative-Advantage Approach*, *supra* note 82.

<sup>340</sup> See Robin Greenwood et al., *The Federal Reserve’s Balance Sheet as a Financial Stability Tool 2* (Fed. Rsrv. Bank of Kan. City Econ. Pol’y Symp. Procs., 2016).

<sup>341</sup> See Ricks et al., *supra* note 49, at 134-35.

An important caveat here is that even if such approaches were highly successful in crowding out unlicensed dollar creation domestically, their effect would likely be weaker with respect to global unlicensed dollar creation. Relying on Treasuries to satisfy world dollar demand could create the very situation I argued above was not (necessarily) a problem—namely, a “New Triffin Dilemma” in which an increasing disparity between the magnitude of the international dollar system and the fiscal capacity of the United States could undermine confidence in the dollar over time.<sup>342</sup>

The FedAccounts proposal, meanwhile, should, if implemented, be limited to U.S. individuals and entities; extending it to offshore individuals and entities would, for a number of reasons, be inadvisable. First, if FedAccounts were offered to foreign individuals and entities, and there were widespread uptake, it could result in currency substitution wherein the dollar becomes dominant not just as an international currency, but as foreign countries’ domestic currency, as well.<sup>343</sup> This could horribly aggravate the problem many have already identified with the knock-on effects of Fed policies in other countries.<sup>344</sup> It would also implicate all of the problems identified by the proponents of “optimal currency areas” —the idea that as the area in which a currency is used for domestic purposes expands, particularly in the absence of a fiscal union, the costs of “one-size-fits-all” monetary policy grows and will eventually outweigh the benefits of a common currency.<sup>345</sup> The accountability and legitimacy problems that many highlight with respect to the Fed’s role as “central banker to the world” would also be significantly exacerbated. All this, combined with the thoroughgoing loss of monetary sovereignty and control by foreign authorities, would likely invite a large backlash and the introduction in other countries of laws and capital controls to prevent this currency substitution. A final challenge to extending FedAccounts beyond the United States relates to the problem of “disintermediation” that FedAccounts could create: banks currently serve an essential role in providing debt finance to consumers and businesses, and “fund” these loans primarily with customer deposits.<sup>346</sup> If all private bank depositors migrated to the Fed, a central question would be who or what entity would then “intermediate” those funds into productive loans for businesses, consumers, and homeowners. There are

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<sup>342</sup> See *supra* Section II.B.3.b.iv.

<sup>343</sup> See, e.g., Kim Schoenholtz & Stephen Cecchetti, *Central Bank Digital Currency: The Battle for the Soul of the Financial System*, VOX (Jul. 28, 2021), <https://cepr.org/voxeu/columns/central-bank-digital-currency-battle-soul-financial-system>.

<sup>344</sup> See *supra* Section II.B.3.a.iii.

<sup>345</sup> See, e.g., Awrey, *supra* note 124, at 994-995.

<sup>346</sup> See Ricks et al., *supra* note 49, at 142-50, 168-69.

compelling reasons to think the Fed itself is not well-placed to make these sorts of granular credit decisions.<sup>347</sup> Our answer in *FedAccounts* is that the Fed could replace private U.S. banks' lost deposit funding with discount window loans.<sup>348</sup> The challenge would, however, likely metastasize to unmanageable proportions if the Fed were to allow the whole world to bank directly with it.

Despite all this, there are two ways in which crowding out moves by the Federal Reserve may nevertheless help suppress unlicensed offshore dollar creation. First, a number of foreign entities that might otherwise look to the Eurodollar market have U.S. subsidiaries that are eligible to participate in the Fed's overnight reverse repurchase agreement facility.<sup>349</sup> To the degree that this provides an attractive alternative for "parking" these banks' dollars, there is less incentive to search abroad for such opportunities.<sup>350</sup> Relatedly, a nontrivial percentage of the claimants in the offshore dollar market are *themselves* U.S. individuals and entities<sup>351</sup>—and thus would be eligible for FedAccounts if the Fed undertook such a project. Drawing these U.S. persons back into onshore options would simultaneously shrink the offshore market.

*FX Swaps.* A second possible effort would encourage other countries to engage in targeted suppression of shadow banking. As one example, it may be worth encouraging regulators in advanced Asian economies to adopt an approach to large institutional investors' use of FX swaps similar to that of their European counterparts.

We have already seen that FX swaps may serve for one party as a sort of money claim.<sup>352</sup> If, for example, a Japanese insurance company receives premium payments in yen, but wants to purchase dollar-denominated assets, it can swap its yen for dollars, agreeing to swap back at some future date. These insurance companies will often enter into short-term swaps—which, as

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<sup>347</sup> *Id.*

<sup>348</sup> *Id.*

<sup>349</sup> See, e.g., *RRP Counterparty Eligibility Criteria*, FED. RSRV. BANK OF N.Y. (Nov. 12, 2014), <https://www.newyorkfed.org/markets/RRP-Counterparty-Eligibility-Criteria.html> (one way to qualify as a repo counterparty to the Fed is to "[b]e a bank (including a U.S. branch or agency of a non-U.S. bank) . . . eligible to receive interest on balances maintained at the Federal Reserve Banks; and have total assets of no less than \$30 billion, or have reserve balances of no less than \$10 billion, on the last quarter for which the relevant reports are available").

<sup>350</sup> See Greenwood et al., *The Federal Reserve's Balance Sheet*, *supra* note 340.

<sup>351</sup> See, e.g., Inaki Aldasoro & Torston Ehlers, *The Geography of Dollar Funding of Non-U.S. Banks*, BIS Q. REV. 15, 16 (2018), [https://www.bis.org/publ/qtrpdf/r\\_qt1812b.htm](https://www.bis.org/publ/qtrpdf/r_qt1812b.htm) ("The global share of U.S.D funding provided by U.S. residents is significantly higher than that raised at foreign banks' U.S. branches and subsidiaries, though these shares vary across banking systems.").

<sup>352</sup> See *supra*, notes 108-116 and accompanying text.

explained, serve for the counterparty as a close substitute for a bank deposit—in order to fund a portfolio of long-term dollar-denominated assets. In this respect, if entered into at scale, the insurance company resembles a bank—it engages in maturity transformation by issuing short-term dollar-denominated debt claims and uses the dollars raised in this way to fund long-term investments. The insurance company is vulnerable to a run in the same way that a bank is: it relies on the willingness of counterparties—or the market more generally—to roll over the swaps; if this funding dries up, the result is structurally just like a bank run, with similar potential knock-on effects, including fire sales of dollar-denominated assets.

In contrast, European insurance companies, under so-called “Solvency II” regulations, face capital charges for maturity mismatches in their assets and liabilities.<sup>353</sup> As a result, to the degree that European insurers use euros from premium payments as collateral for dollars in a currency swap, and then use the dollars to invest in dollar-denominated assets, they are much likelier to enter long-term swaps that have the same maturity as the dollar-denominated assets they have purchased.<sup>354</sup> As a 2020 BIS report on international U.S. dollar funding observed, compared with Asian insurance companies,

The risk-based capital regime for European insurers (Solvency II) may have dampened the demand for [maturity transformation]. Two important Solvency II regulations stand out in this regard. First, Solvency II encourages insurance companies to match the maturity of their hedges to that of their [U.S.] dollar assets through more favourable treatment of liabilities that match the maturity of claims. Second, Solvency II discourages unhedged or open [U.S.] dollar positions either through limits or capital requirements. For example, insurers must hold capital against any unhedged FX exposures ([e.g.] of 25% under the standardised approach). Consistent with this requirement, data collected under Solvency II show that the bulk of the FX derivatives of European insurers are long-term in nature (more than 80% have a maturity of nine to [ten] years).<sup>355</sup>

It would be worth advocating with regulatory authorities in countries such as Japan, South Korea, and Taiwan for similar rules to encourage large

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<sup>353</sup> See U.S. Dollar Funding, *supra* note 129, at 25.

<sup>354</sup> *Id.*

<sup>355</sup> *Id.*

institutional investors using FX swaps to better match the maturities of their assets and liabilities.

*Upsbot.* In short, while we should not allow practical political pessimism to prevent us from attempting to articulate optimal regulatory and monetary design principles, we should also resist making the perfect the enemy of the good, and we should look for feasible ways to bolster stability, particularly where doing so would be unlikely to undermine the dollar's status.

### CONCLUSION

There is much that U.S. policymakers can and should do to exert a greater degree of control over global dollar creation, with the dual goal of bolstering stability and mitigating the moral hazard inherent in private money creation. In doing so, however, they must take care not haphazardly to surrender the benefits that come with the dollar's dominant international role. A reform program focused only on stability would bring all aspects of dollar creation—both the short-term money claims that banks issue and the long-term debt they thereby acquire—under the aegis of U.S. regulation and supervision, and with the benefit of a U.S. government safety net. The problem with this approach is that it would undermine the dollar's international status. The extension of dollar-denominated credit for foreign persons and entities is necessary for the dollar to maintain its utility, as well as to ensure an adequate dollar supply for the global economy. This, in turn, likely requires yielding some degree of control over dollar creation. The best approach to managing the trade-off between recapturing monetary control and supporting the dollar's status would involve acceptance of the fact that some aspects of dollar creation must continue to lie outside the direct reach of U.S. authorities, along with stronger cooperation with foreign regulators to ensure adequate regulation of assets backing dollar claims, and to help suppress unlicensed dollar creation.