

How To Spend a Trillion Dollars:
Our Monetary Hardwiring, Why It Matters, and What We Should Do About It

Christine Desan

Abstract:

Financial crises, twice in so many decades, have exposed our monetary hardwiring as a critical issue of governance. That circuitry starts with a public unit – the dollar -- created and backed by the federal government, but it appoints commercial banks to amplify and spread that money at the retail level. The design does more than delegate distribution to banks. By privileging banks as money creators, it also enables them to determine distribution. Operating according to criteria that are privately determined, banks decide which recipients will benefit from the expansion of a medium that is public. The process is clearly discriminatory.

The hybrid state at the monetary core of the market has never been justified according to democratic criteria. Retail banks prevailed in their partnership with the state because they had strategic advantages in creating credit money, not because they were experts in allocating that medium fairly or most efficiently. That history, recovered here, was lost to an economic narrative that located banks as intermediaries vetted by the competitive marketplace. Public spending does not dilute the problem; all such spending occurs through the same banked conduits.

By contrast, the federal government could follow historical examples and directly issue dollars. Direct-issue dollars would alleviate recessionary conditions without adding to the national debt. They could be targeted directly to populations most in need, enhancing distributive equity, and policed by the Federal Reserve, dividing public authority over money creation in a new way. Most importantly, the strategy would begin to democratize money's design.

Draft, 3/11/22¹

They say that money talks. If you spend a trillion dollars fast, let alone several trillion dollars in record time, it shouts. The extraordinary stress of the COVID-19 crisis stripped the American system down to elemental reaction. When the federal government mobilized enormous resources at warp speed, it acted in ways that exposed the monetary hardwiring of capitalism in the United States. Without the routine that normally insulates it, that hardwiring loudly distributed privilege and resources on the national stage.

By monetary hardwiring, I don't mean the ends that legislators, administrators, and Federal Reserve officials embraced – big businesses, small businesses, “households,” hospitals, essential workers, the exploding number of unemployed, the airline industry, and more – although those ends mattered greatly. I mean the instrumental engineering, the conduits we use to make and

¹ Acknowledgments.

push money into the hands of individuals. Directing the flow of value in everyday conditions as well as emergencies, the monetary hardwiring affects the ends in profound ways. Indeed, the more concerned we are with the ends, the more we should attend to the hardwiring. That circuitry defines the parameters within which decisions about ends are made. In fact, it has constricted our imaginations for decades – even as it determines patterns of growth and inequality.

A particular kind of hardwiring characterizes capitalism. That system amounts to the governing (constitutive) determination that the public medium of the economy – money – should be created by banks, predominantly banks operating for private profit. The determination is strange, indeed *sui generis*, because governments can make money without any financial intermediary or involvement. Despite its anomalous nature, the banked design for creating the money supply has gone viral in the last three centuries. During that time, it has determined the way both private and public spending happens.

A little aerial reconnaissance of federal spending during the COVID-19 Crisis marks out a territory both familiar and, on second look, just plain weird. It tells us an enormous amount about how the current hardwiring delivers new money to the government and to individuals. At the same time, it raises profound questions about whether and how we justify the current system. Mapping the circuitry and tracing its history escalates the issue. Banks' origins and operations are sharply disconnected from the contemporary rationale – their expertise as intermediaries -- for their singular privilege. The disjunction leaves them deficient in democratic vetting and validation, compelling revision. One place to start: directly issuing dollars in moments of urgent need. That proposal brings us full circle to the aerial tour.

In the face of the COVID-19 crisis, the federal government spent money at a torrid pace. In the spring of 2020, the Federal Reserve received authority to disburse somewhere between \$3.5 and \$6 trillion (if the Treasury agreed on the upper end) in loans, asset purchases, and other liquidity supports. The central bank promised that it would do more if needed – it emphasized that there were no caps on several of its programs. The central bank would in fact disburse over \$5.2 trillion over the next 20 months.² (For reference, the size of the entire 2019 federal budget was

² Asset purchases or quantitative easing (QE) by the Fed occurred at a pace averaging \$150 billion a month from March 2020 through November 2021, when the Fed announced it would begin tapering its purchases, used here as a plausible endpoint of Fed's crisis response QE. Between Feb 26, 2020 and November 2021, the Fed's balance of Treasury and mortgage-backed securities (MBS) increased by \$4.2 trillion. *See* Federal Reserve Statistical Release H.4.1 (Jan 13, 2022). The CARES Act further enabled the Fed to engage in \$1.95 trillion in credit support lending to municipalities and firms (which could have gone up to \$4.5 trillion had the Treasury agreed), as well as \$953 billion in liquidity support to Paycheck Protection Program lenders. *See* Eriic Milstein & David Wessel, *What Did the Fed Do in Response to the COVID-19 Crisis?* (2021) (summarizing the amount credit support vehicles could lend based on Fed loss cushion

\$4.5 trillion.)³ Also in the spring of 2020, Congress appropriated \$3.6 trillion, \$1.9 trillion of which had been disbursed by July 2020. Congress would eventually appropriate \$2.13 trillion more, notably in December 2020 and March 2021.⁴

For observers who remembered the federal government's response to the Financial Crisis of 2008, the pattern was predictable -- but also odd and unsettling for several reasons.

First, the spending benefited finance far more immediately than individuals and with greater direct effect. That was true despite the fact that an external shock, a virus, caused the 2020 crisis, unlike the internal financial panic that created the 2008 crisis. The economic crash was clearly worst at the bottom, devastating individuals with insecure employment, particularly those in low-income households, small businesses, and communities of color.⁵ Between February and April 2020, more than 3.3 million small businesses closed, 22% of the total and the fastest decline on record. Businesses owned by African-Americans were hit hardest, dropping by 41%.⁶

requirements and invested Treasury equity); Rosalind Z. Wiggins, *CARES Act \$454 billion Emergency Fund Could Add Up to Much More for Businesses, States and Municipalities*, YALE PROGRAM ON FINANCIAL STABILITY (2020) (discussing the 10:1 potential leverage the \$454 billion CARES allocation could generate); *see also* Paycheck Protection Program Lending Facility Term Sheet (Apr. 9, 2020) (constraining PPPLF lending to the total principal of disbursed PPP loans). Ultimately the Fed used \$0.2 trillion of that ammunition. *See* Statistical Release H.4.1 (Jan 13, 2022) (outstanding loans under credit facilities peaked at roughly \$40 billion in January 2021, PPPLF outstanding notes peaked at roughly \$90 billion in June 2021, MMLF and related lending amounted to \$89 billion). The Fed had essentially no limit on the liquidity support it could provide to brokers (repurchase agreements and international swap lines), which it used at peak (March 2020) to disburse \$0.9 trillion in liquidity. *See id.* There is no obvious baseline for standard amount of asset purchases or repo, so it is unclear how much of the post-spring 2020 outlay should be considered a result of that emergency. Having said that, the “new normal” of QE is, itself, a function of the Financial Crisis of 2008. For the open-ended nature of the Fed's commitment, *see, e.g.*, Board of Governors, *Federal Reserve Announces Extensive New Measures* (2020).

³ Congressional Budget Office, *Monthly Budget Review* (Nov. 7, 2019), available at <https://www.cbo.gov/system/files/2019-11/55824-CBO-MBR-FY19.pdf>.

⁴ Committee for a Responsible Federal Budget Staff, *COVID Money Tracker: Policies Enacted Through August 14* (Apr 20, 2020). Congress passed the Response and Relief Act on December 27, 2020, and the American Rescue Plan Act on March 11, 2021. *See* CRFB, *COVID Money Tracker*, updated through Jan 10, 2020, <https://www.covidmoneytracker.org/> accessed January 18, 2022.

⁵ Betsy McKay, *Coronavirus Deals Setback to Global Vaccination Programs*, WALL ST. J., September 14, 2020.

⁶ Robert Fairlie, *The Impact of Covid-19 on Small Business Owners* (Stanford Institute for Economic Policy Research No. 20-022 ed. 2020).

By May 2020, thirty-six million people had lost their jobs.⁷ Medical coverage vanished with those jobs – and this at the very moment it was most necessary.⁸ As the coronavirus spread, other health problems escalated, from mental illness to an array of compounding conditions like obesity.⁹ Those deemed “essential” workers were the least paid and worst protected from the virus. It rampaged across communities, attacking along lines of poverty and race that fracture American society.¹⁰

As events exposed the desperate precarity for households, finance was on the frontline for rescue in 2020, as in 2008. The government’s earliest acts included lowering the interest rate for banks, abolishing their reserve requirements, and increasing loans to banks at the Fed’s discount window.¹¹ If banks lent freely, the reasoning went, that would support businesses in trouble.

The Fed soon renewed quantitative easing: beginning with asset purchases of \$900 billion Treasury and mortgage-backed securities, the Fed vowed to make an unlimited number of purchases as needed. The policy aimed to “support the flow of credit to American families and businesses.”¹² Along with other Fed purchases to come, quantitative easing increased demand for targeted assets, driving up their price and down their yield. As in 2009, by depressing bond yields, the Fed’s actions encouraged investors to buy equities. As the economy collapsed, the stock market soared, posting its speediest 50 day increase in history.¹³

⁷ After a rise in hiring by companies that reopened in June, unemployment stood at about 30 million. Patricia Cohen, *Roughly One In Five Workers Are Collecting Unemployment Benefits*, N.Y. TIMES, July 23, 2020.

⁸ Sheryl Gay Stolberg, *Millions Have Lost Health Insurance in Pandemic-Driven Recession*, N.Y. TIMES, July 14, 2020.

⁹ Jake Remaly, ‘Striking’ Increase in Childhood Obesity During Pandemic WebMD Health News at <https://www.webmd.com/lung/news/20210330/striking-increase-in-childhood-obesity-during-pandemic>; Mark E. Czeisler, et al., *Mental Health, Substance Use, and Suicidal Ideation during the COVID-19 Pandemic - United States, June 24-30, 2020*, MORBIDITY AND MORTALITY WEEKLY REPORT (2020) (reporting 41% of Americans coping with substance abuse and/or declines in mental health).

¹⁰ Czeisler et al., *supra* note 9. The COVID-19 Crisis has disproportionately devastated mental health among Black and Hispanic populations: 15% and 18 %, respectively, of those responding reported suicidal thoughts, compared to 11% of the general population (broken down by ethnicity, incidence was 8% and 7% in white and Asian respondents). *Id.*

¹¹ Board of Governors, Federal Reserve Issues FOMC Statement, March 3 (2020); Board of Governors, Federal Reserve Issues FOMC Statement, March 15 (2020); Board of Governors of the Federal Reserve System, *Reserve Requirements* (2020), available at <https://www.federalreserve.gov/monetarypolicy/reservereq.htm>.

¹² Jeanna Smialek, et al., *State and Local Budget Pain Looms Over Economy*, N.Y. TIMES, Aug 14, 2020, 2020; Board of Governors, *supra* note 2.

¹³ Steven Rattner, *The Mystery of High Stock Prices*, N.Y. TIMES, July 3, 2020; Matt Phillips, *The Bad News Won’t Stop but the Markets Keep Rising*, N.Y. TIMES, April 29, 2020; Richard Henderson, *BlackRock Wins \$100bn in New Client Funds during Wall Street Rally*, FIN TIMES,

The Fed also moved to support the “shadow banks” that operate in the capital markets, allocating \$1.5 trillion for repurchase (“repo”) operations.¹⁴ According to the Fed, the injections were “intended to ensure that the supply of reserves remains ample,” and “to support smooth functioning” in the funding markets used by securities dealers, hedge funds, money market mutual funds, corporations, and large cash investors.¹⁵ In the following weeks, the central bank arranged lines of credit for foreign central banks, lowering its rates and then expanding its assistance in scope and method of lending.¹⁶

During the second half of March, the Fed resurrected lending channels innovated during the 2008 Financial Crisis to further support the repo market and the closely related commercial paper market. By lending to participants in those markets (broker-dealers, money market mutual funds, banks, and financial companies), the Fed hoped to forestall any desire by investors to panic and withdraw from them.¹⁷ The resurrected facilities had no lending caps.¹⁸ The Fed then opened facilities that would lend directly to corporations large enough to operate in the capital markets (*i.e.*, corporations that issue bonds and get them credit-rated).¹⁹ In April, the central bank extended financing to “Main Street” borrowers (defined as those needing loans of \$1 million and up) if banks would find those borrowers and draw the loans up, and to states and

July 17, 2020; Ruchir Sharma, *The Billionaire Boom: How the Super-rich Soaked up Covid Cash*, FIN TIMES, May 14, 2021. For other contributing causes, *see, e.g.*, Amrith Ramkumar, ‘A Powerful Force’: Tesla’s Momentum Leads Stock-Market Surge, WALL ST. J., July 20, 2020; Philip Stafford, et al., *US Stocks Fall after McConnell Dents Hopes for Stimulus*, FIN TIMES, Aug. 11, 2020.

¹⁴ Federal Reserve Bank of New York, Statement Regarding Repurchase Operations (2020).

¹⁵ *Id.*

¹⁶ *Id.* at 20.

¹⁷ For detail on financial entities operating there, *see infra* TAN 71-72. On March 23rd, the Fed also renewed its Term Asset-backed Securities Loan Facility (TALF), a financial crisis era invention that lent more directly to a wide set of financial firms, including those providing consumer credit and automobile finance. *See* Board of Governors, *supra* note 2.

¹⁸ *See* Board of Governors, *supra* note 2. By contrast, TALF had a \$100 billion lending ceiling. *See* Board of Governors, Federal Reserve Publishes Updates to the Term Sheet (2020).

¹⁹ The two facilities were the Primary Market and Secondary Market CCFs. *See* Board of Governors, *supra* note 2.

municipalities by buying their bonds.²⁰ The Fed's capacity to extend such credit amounted to \$2.9 trillion and could be quickly expanded with Treasury support to \$4.5 trillion.²¹

As the Federal Reserve acted, Congress stepped up as well. While it spent at unprecedented speed and quantity, critics pointed to problems from the start.²² After earlier legislation sent money towards a variety of emergency measures, Congress enacted the \$2.1 trillion CARES Act.²³ The single biggest lump sum appropriation (\$454 billion) went to the Treasury to backstop the Federal Reserve lending programs described above.²⁴

The largest CARES Act outlay after that, \$349 billion (soon increased to \$670 billion), went to support small businesses through the Paycheck Protection Program (PPP).²⁵ But by May 2020, the PPP's problems had become evident. Banks profited significantly from the program, which paid for quick action by lenders.²⁶ Those lenders already working with the Small Business Administration accessed funds more quickly and favored existing customers.²⁷ Some banks

²⁰ Board of Governors, Federal Reserve Takes Additional Actions (2020); Board of Governors, Federal Reserve Expands Access to its Paycheck Protection Program Liquidity Facility (2020). The minimum loan was lowered on April 30th to \$500,000, and on June 8th to \$250,000. *See id.*; Board of Governors, Federal Reserve Board Expands its Main Street Lending Program (2020). The Fed set up a similar program to support the Paycheck Protection Program. Board of Governors of the Federal Reserve System, *Paycheck Protection Program Liquidity Facility Term Sheet*(2021), available at <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20210625a1.pdf>.

²¹ *See supra*, note 2.

²² Jacob M. Schlesinger & Joshua Jamerson, *After Three Coronavirus Stimulus Packages, Congress Is Already Prepping Phase Four*, WALL ST. J., March 29, 2020; Jacob M. Schlesinger & Hanna Sender, *How Fast the Economy Crashed and Washington Responded — in Charts*, WALL ST. J., March 27, 2020.

²³ The bills supported emergency health measures and testing, small business relief, tax credits to employers for providing paid sick leave, and expanded unemployment and food assistance. The Families First Coronavirus Response Act, 134 Stat. 178 (2020); the Coronavirus Aid, Relief, and Economic Security Act, 134 Stat. 281 (2020).

²⁴ For a helpful graphic, *see* Schlesinger & Jamerson, *supra* note 22. Note that more than half of these funds were never distributed into Fed lending vehicles.

²⁵ Committee for a Responsible Federal Budget, *What's in the Fourth Coronavirus Package?*(2020), available at <https://www.crfb.org/blogs/whats-fourth-coronavirus-package>; The Editorial Board, *Your Sunny Fiscal Update*, WALL ST. J., July 13, 2020.

²⁶ LAURA SULLIVAN, et al., SMALL BUSINESS RESCUE EARNED BANKS \$10 BILLION IN FEES (National Public Radio 2020); MICHAEL ASH, et al., THE BANKS' TAKE ON THE PAYCHECK PROTECTION PROGRAM (Political Economy Research Institute 2020). Oversight of the PPP has been notoriously difficult. Alan Rappeport & Glenn Thrush, *As Trillions Flow Out the Door, Stimulus Oversight Faces Challenges*, N.Y. TIMES, May 13, 2021.

²⁷ David Benoit & Peter Rudegeair, *Banks Could Get \$24 Billion in Fees From PPP Loans*, WALL ST. J., July 7, 2020.

were slow to select borrowers and added conditions for eligibility that confounded them. Many loans went to large companies, including financially savvy enterprises and publicly listed entities, rather than small businesses. Loans flowed initially to areas less hard-hit by the virus, a function of the heterogeneity in bank response, as opposed to differences in loan demand.²⁸ And disproportionately few loans reached businesses run by people of color, the community that has suffered the highest death toll and furnished a disproportionate number of “front line” workers.²⁹

The CARES Act included one-time payments of \$1200 to lower-income individuals, totaling \$301 billion; expanded unemployment and tax deferrals brought the total up to \$771 billion in direct relief. Lawmakers acknowledged all these measures to be stop-gap measures only, sufficient to mitigate damage suffered during the initial shutdown.³⁰

Direct support addressed essential needs but arrived too late for some: the payments efficiently reached those with bank accounts because Treasury could directly deposit payments there. Those who received paper checks – up to 70 million by one estimate-- had a costlier time, whether waiting for the checks to arrive and be processed by banks or using payday lending services to fill the gap.³¹ By mid-summer, studies showed that the money had succeeded in mitigating economic disaster, but it was also about to run out. It would be extended in December, 2020 and in March, 2021.³²

A second problem accompanied the benefits claimed by finance: they seemed to flow from the outsized agency that finance exercised in the economy. No one talked about institutions that were “too big to fail” in 2020. Strengthened by increased capital and subject to new kinds of

²⁸ João Granja, et al., *Did the Paycheck Protection Program Hit the Target?* (NBER Working Paper ed., NBER No. 27095 ed. 2020).

²⁹ See Stacey Cowley, *Minority Entrepreneurs Struggled to Get Small-Business Relief Loans*, N.Y. TIMES, April 4, 2021 (minority and women borrowers disadvantaged under PPP); Emily Flitter, *Black Business Owners Had a Harder Time Getting Federal Aid, a Study Finds*, N.Y. TIMES, July 15, 2020; see also Jessica Bartlett, *Black businesses in Mass. received fewer PPP loans*, BOSTON BUSINESS JOURNAL, July 7, 2020. Data about the PPP has been scant and riddled with errors. See David Yanofsky, *Here’s What We Know Is Wrong with the PPP Data*, QUARTZ, 2020.

³⁰ Schlesinger & Jamerson, *supra* note 22.

³¹ Aaron Klein, *70 Million People Can’t Afford to Wait for Their Stimulus Funds to Come in a Paper Check* (Brookings ed., 2020); Saule T. Omarova, *The People’s Ledger: How to Democratize Money and Finance the Economy*, 74 VAND. L. REV. 1231, 1253 (2021).

³² Zach Montague, *The Second Stimulus Package: Here’s What’s Included*, N.Y. TIMES, December 22, 2020; Emily Cochrane, *Divided Senate Passes Biden’s Pandemic Aid Plan*, N.Y. TIMES, March 6, updated March 13, 2021. On the impact of the CARES Act and additional support provided by it, see, e.g. Annie Lowrey, *The Pandemic Proved That Cash Payments Work*, THE ATLANTIC July 10, 2020; see also Stacey Cowley, *Recession’s Silver Lining: American Households Are Doing Better Than Expected*, N.Y. TIMES, October 27, 2020.

oversight, they were supposed to be much more resilient.³³ The implicit deal with taxpayers was that the reform would make costly federal assistance less necessary.

Yet finance once again held the rest of the economy hostage. A shock to the “real economy” threatened to melt-down the capital markets. The emergency measures that followed suggested that those markets might be unable to digest an economic shock without significant assistance.³⁴ The unlimited amount pledged in quantitative easing, \$1.5 trillion or more in repo operations, up to \$4.5 trillion promised in emergency lending operations – the 2020 Fed had mobilized funds in the same measure and at an even more urgent pace than in 2008 “to prevent the market from freezing up and squeezing companies of needed cash.”³⁵

The Fed’s promises were extremely effective: as soon as they were rolled out, the markets rallied and the Fed spent significantly less than it had on offer.³⁶ To some observers, that fact made government assistance less troubling. By “reassuring the markets,” the central bank had obviated many problems, rendering its need for material support less necessary. The technique followed Walter Bagehot’s classic lesson on the art of central banking: advertising the availability of funds calmed actors concerned that a scramble for cash would undo the system.³⁷

But the reassurance was more than hortatory. Setting aside quantitative easing and its effects on the stock market, the Fed’s programs mobilized the machinery of the central bank, itself huge. It signaled a commitment of taxpayer resources for the purposes of finance, as opposed to competing claims. And it changed conditions in the bond market. In fact, the promise itself led to a “boom of debt issuance” by American companies.³⁸

Moreover, the Fed’s promises came with real cash; the way to reassure the financial edifice was to feed it, at least with snacks. That contingency was built into the program. Thus through its

³³ Ben Bernanke, Implications of the Financial Crisis for Economics, Speech Presented at the Conference Co-Sponsored by the Center for Economic Policy Studies and the Bendheim Center for Finance (2010).

³⁴ See, e.g., Jeanna Smialek, *The Financial Crisis the World Forgot*, N.Y. TIMES, March 16, 2021.

³⁵ *Id.*; Nick Timiraos, *Automakers, Technology Firms Are Largest Components of Fed’s Corporate-Bond Purchases* WALL ST. J., June 28, 2020.

³⁶ See CRFB, *supra* note 4. The effect registered in the corporate bond market; it did not stimulate demand for loans from the Main Street facilities. Nick Timiraos & Kate Davidson, *Fed, Treasury Disagreements Slowed Start of Main Street Lending Program*, WALL ST. J., July 12, 2020.

³⁷ WALTER BAGEHOT, *LOMBARD STREET: A DESCRIPTION OF THE MONEY MARKET* 160-207 (John Wiley and Sons, Inc. 1873, 1999).

³⁸ See Timiraos, *supra* note 35; Mark Vandavelde, *The Leveraging of America: How Companies Became Addicted to Debt*, FIN TIMES, 2020; Joe Rennison, et al., *New Amazon Bond Rivals Yield on U.S. Treasuries in Record-breaking Sale*, FIN TIMES, May 10, 2021.

corporate credit facilities, the Fed planned from the start to buy \$750 billion in existing and newly issued bonds. Acknowledging that the Fed's program lowered borrowing costs for companies in a market where money was already cheap, Fed chair Jerome Powell argued that the Fed must maintain its credibility by continuing the purchases it had pledged. Its bond purchases sent actual value to actual actors. And mammoth corporations - Apple, Verizon, AT&T, and the U.S. divisions of Toyota, Volkswagen, and Daimler -- were among the Fed's largest direct beneficiaries, as well as Comcast, CocaCola, and insurance giant United Health Group.³⁹

The government's spending in 2020, as in 2008, reveals a third pattern. Compared to monetary interventions, spending by Congress was both harder to activate and more controversial. One might expect an uphill climb in a flush period -- but fiscal initiatives remained more difficult even when the amount of public need was enormous. If government spending were ever warranted, it would be in a situation like that created by a pandemic: the public harm was clear and finite, it affected a discrete group severely, and no one was at fault. More, the coronavirus exposed the most deserving to the most severe harm: they were frontline health, home care, delivery, and industry workers that kept society safe with essential services. Indeed, conditions in 2020 convinced a wide swath of economists that fiscal stimulus was crucial. Through spring, summer, and fall 2020, Jerome Powell himself pushed Congress for additional spending, detailing the limits of the central bank's power and reminding Congress that, as after 2008, the public would resent a double standard that favored big banks and finance at the expense of families displaced and damaged. Ben Bernanke chimed in as well.⁴⁰

The spending packages passed in December 2020 and March 2021 significantly improved the finances of lower-income Americans by delivering stimulus checks and unemployment benefits. At the same time, those households faced a shifting job market, one complicated by a loss of low-wage jobs, rising wages in remaining jobs, and inflation. Those cross-cutting phenomena and other factors cast the resiliency of recovery into doubt as unemployment benefits and checks stop.⁴¹ By contrast, well-off Americans took home 70% of the increase in household wealth due to pandemic measures, given their impact on the stock market.⁴² But oddly, commentators aim their criticism at the fiscal stimulus as they assess those measures more generally. Insofar as public spending increased consumer demand, it likely drove the sharp increase in inflation that

³⁹ Timiraos, *supra* note 35.

⁴⁰ *Federal Reserve Chair Jerome Powell Testifies on Monetary Policy and the Economy* Senate Banking, Housing and Urban Affairs Committee (June 16, 2020) ; Ben Bernanke, *I Was Chairman of the Federal Reserve. Save the States*, N.Y. TIMES, July 15, 2020; Reuters, 'Far From Complete,' Powell Says of Fiscal Expansion, N.Y. TIMES, October 6, 2020.

⁴¹ Orla McCaffrey & Shane Shifflet, *During Covid-19, Most Americans Got Ahead — Especially the Rich*, WALL ST. J., June 27, 2021; Paul Krugman, *Wonking Out: Are Billionaires Making Out Like Bandits*, N.Y. TIMES, February 4, 2022.

⁴² McCaffrey & Shifflet, *supra* note 41.

began in summer 2021.⁴³ In comparison, the Fed’s industrial strength outlay was relatively inconspicuous: it was “The Financial Crisis the World Forgot.”⁴⁴

To be sure, the double standard separating fiscal and monetary initiatives follows in part from the structure of spending: public spending depends on a political process while monetary outlays draw on administrative practice. But that structure itself is part of the landscape we are surveying. The Federal Reserve was a controversial establishment in its day, and it has grown an enormous amount of spending authority since then, enough to be constitutionally suspect.⁴⁵ Even as it commits funds, they do not “count” against the tally of national debt. By contrast, when Congress spends, it first borrows by way of issuing a Treasury bill or bond, which adds to the national debt.⁴⁶

Similarly, even when congressional spending is “monetized,” it is treated differently from the “monetization” of assets routinely taken in pursuit of monetary policy. As for the first, Congress normally issues bonds in order to borrow from investors when it wants to spend beyond funds that the government already holds. The central bank can buy those bonds and increase cash in circulation; when it does so, the process is called “monetization.” As for monetary policy, the Fed aims to affect short- and long-term interest rates by buying or selling government bonds or other assets; in other words, it uses monetization as a conventional tool of monetary policy. In either case, when the central bank buys assets that it intends to keep indefinitely, the intervention amounts to the same thing: the government has expanded the amount of reserve balances available for retiring the assets (generally public bonds or publicly guaranteed bonds) held by the central bank. But as the editorial board of the Financial Times noted, the central bank’s monetary policy travels under the label “quantitative easing” while central bank purchases of government debt during times of fiscal stimulus are called “monetary financing.” The first,

⁴³ See, e.g., David Harrison & Gabriel T. Rubin, *What Is Inflation and What Causes It? What to Know*, WALL ST. J., February 10, 2022.

⁴⁴ Smialek, *supra* note 34.

⁴⁵ See, e.g., PHILIP A. WALLACH, *TO THE EDGE: LEGALITY, LEGITIMACY, AND THE RESPONSES TO THE 2008 FINANCIAL CRISIS* (Brookings Institute Press 2015) 3636; RICHARD TIMBERLAKE, *CONSTITUTIONAL MONEY: A REVIEW OF THE SUPREME COURT'S MONETARY DECISIONS* 162-69 (Cambridge University Press 2013); Christine Desan & Nadav Orian Peer, *The Constitution and the Fed after COVID-19* at <https://justmoney.org/the-constitution-and-the-fed-after-the-covid-19-crisis-2/>; Hal Scott, *An Essay on the Fed and the US Treasury: Lender of Last Resort and Fiscal Policy*, PER CURIAM HARV. J.L. & PUB. POL'Y (2021).

⁴⁶ 31 U.S.C. § 3101. Some congressional spending falls outside accounting for the national debt. See Nadav Orian Peer, *Public Purpose Finance: The Government’s Role as Lender*, 83 LAW & CONTEMP. PROBS. 101(2020).

quantitative easing, is far less controversial than the second, monetary financing, although the FT authors saw “no clear distinction” between them.⁴⁷

Contemporary political culture reinforces the dichotomy between fiscal and monetary initiatives. The government is actively shaping the market in *both* cases: when it spends funds appropriated by Congress and when it commits taxpayer resources through the Federal Reserve. That commonality calls into question the notion that supporting the markets for money and credit is preferable to supporting enterprising individuals directly. Again, that culture becomes part of the phenomena we are surveying.

Taken in the time of a pandemic, the tour becomes a drama. Why is finance the star of the show rather than the individuals who are the exchanging actors? Why does the industry have outsized agency and why does spending on it qualify as administratively obvious rather than politically controversial? Why did congressional spending flow through banking channels and why did it (or it alone) drive up the national debt? What is the effect of using these channels and how do we justify their use, particularly given the huge cost it requires to maintain them?

The questions take us straight to capitalism’s circuitry: spending in the time of COVID-19 occurred exactly as the system is hardwired to work. According to the design, capitalism starts with a public unit, like the dollar, that is based on sovereign credit. That unit is expanded through a private delivery system: our monetary engineering outsources the provision of essential liquidity exclusively to financial actors -- banks and shadow banks. The design is not universal, including in market societies or those that use private credit. Rather, it characterizes capitalism. The government mobilizes to protect finance not because it is too big to fail but because it is the essential circuitry, the hardwiring, of economic exchange within our peculiar architecture. [Section 1]

The design of the system does more than *delegate* distribution of money to banks; it appoints them to *determine* its distribution in money. Agents that expand the money supply when they lend can advance credit more cheaply than entities that use existing funds to lend. The government most famously benefits from so-called “seignorage,” but when a government assimilates bank credit to money, so also do banks. That advantage allows them to offer money on better terms than other parties. The same edge makes banks incomparable as lenders – and

⁴⁷ The Editorial Board, *Printing Money Is Valid Response to Coronavirus Crisis*, FIN TIMES, April 6, 2020; *see also* Adair Turner, *Monetary Finance Is Here* Project Syndicate at [www-project-syndicate-org.ezp-prod1.hul.harvard.edu/commentary/monetary-finance-of-covid19-fiscaldeficits-](http://www.project-syndicate.org/ezp-prod1.hul.harvard.edu/commentary/monetary-finance-of-covid19-fiscaldeficits-by-adair-turner-2020-04)

[by-adair-turner-2020-04](http://www-project-syndicate-org.ezp-prod1.hul.harvard.edu/commentary/monetary-finance-of-covid19-fiscaldeficits-by-adair-turner-2020-04) (similar). *See, e.g.*, Center for a Responsible Federal Budget Staff, *Is the Fed Buying Our New Debt?* (Center for a Responsible Federal Budget 2020) (criticizing “monetary financing”).

when they add to the money supply by writing credit to their borrowers, they also select which recipients will benefit from the expansion of a public medium, *i.e.*, from the creation of money. In material consequence, the design steers spending by individuals and entities.

Put another way, we depend on banks to perform an essentially political role: the distribution of value in newly created money, a medium made possible by public agreement and contribution.⁴⁸ The push and pull over the distribution of PPP loans suggested the selectivity of banks' operation, as they made initial outlays and then adjusted to new dictates from Congress.⁴⁹ The exclusivity of capital market participants, those supported by the Fed's outreach, suggests a similar pattern at the shadow bank level. [Section 2]

The distributive character of banks' work raises an elemental question of governance: what justifies their authority to shape distribution in the figure of public money creation? Again, the COVID-19 crisis sharpens the question given how mammoth was the public response needed to support the banks at their work. Proponents of the system bear the burden to explain the priority of that public commitment.

Looking to the way banks came into their current role as retailers of liquidity does not help justify the current system. Once we recognize money creation as the critical innovation, its history is jarring. Far from tracing an evolutionary arc back to commercial expertise in credit creation, one rooted in the medieval merchant networks so often imagined as predecessors, modern banks appear as an accidental innovation, an improvised response to money shortages under the wing of nationalized money creation in both Britain and the U.S. If accidental, the activity was a juggernaut: as they created money substitutes made of credit, banks become nodes of purchasing power. In that role, they supplied capital, both created and acquired, to uses that were profit-generating. The more established their operation, the more easily it could be assimilated to traditional forms of lending: later commentators cast banks as intermediaries that transferred capital rather than creating it. That re-framing obviated attention to the money-creative activity that set modern retail banking apart and mark it as an arm of public distribution. Likewise, contemporary accounts assume banks' prowess without controlling for alternative designs and without considering the consequences – like massive central bank support for

⁴⁸ Bank privilege, still singular in its power, has been somewhat eroded in recent decades by entities that copy banking techniques, including shadow banks. *See, e.g.*, MORGAN RICKS, *THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION* (University of Chicago Press 2016). Including them in the analysis only deepens the argument that capitalism is fundamentally a financial form. For discussion of the erosion of bank privilege, see *infra* TAN notes 78-79.

⁴⁹ Most recently, *see* the Treasury Department's attempt to empower community development finance institutions to reach minority borrowers during the pandemic through an Emergency Capital Investment Program. *See* Board of Governors, Federal Bank Regulators Issue Rule Supporting Treasury's Investments (2021).

finance during the COVID-19 crisis -- of the way we have built out the hardwiring that we use every day. [Section 3]

There are no work-arounds in the current system. Public spending occurs in ways that underscore the banking logic, confirm its operation, and enlarge its ambit. Modern governments adopt protocols, obviously fictional, suggesting that sovereign money comes from outside of public authority. Even when it intends to create money, a government first borrows from investors, generating a financial asset it can then monetize. That is, all public money creation produces a parallel financial medium. Public spending – even fiscal policy – therefore elaborates the financial architecture we have. [Section 4]

The COVID-19 Crisis, following so closely on the heels of the Financial Crisis, problematizes the monetary hardwiring it illuminates so starkly. In both 2020 and 2008, prioritizing financial institutions entailed profound inequity in the distribution of resources. And in both cases, the system fell short for individuals and households, despite how often the central bank sanctified those actors as its ultimate concern.⁵⁰ Fiscal outlays over the longer term ameliorated that distress but, given the impact of policy initiatives taken together, those at the top benefitted most steeply, increasing existing inequality.⁵¹ The issue is whether banks and financial entities have made the case that they warrant the profound privileges they currently hold. In short, should we be dedicating the trillions we pledged – over the decade since 2008 and at breakneck speed in spring 2020 -- to prop up the financial system?

Once we see the hardwiring, we can rethink it. Or we can redesign it. In fact, we can simply circumvent it, an experiment in moving beyond capitalism that we can conduct – that we should conduct – in recessionary conditions, when inequality is increasing and exigencies demand action. Rather than extending existent spending conduits, we could spend a trillion dollars to an altogether different effect. Direct-issue dollars, like those used during the Civil War, across the earlier 19th century, and in colonial America represent a different strategy. Congress could use them as a democratically accountable kind of spending, one that occurred without adding to the long-term national debt. At the same time, direct-issue dollars could be targeted at just the populations that could best use them, conditioned as necessary on commitments to tax, and modulated as part of the monetary system policed by the central bank. Those dollars could even issue according to arrangements triggered by private initiative, diversifying and making more

⁵⁰ See Karen Petrou, *Only the Rich Could Love this Economic Recovery*, N.Y. TIMES, July 12, 2021; Smialek, *supra* note 34; Karen Shaw Petrou, *Income Inequality: The Battlefield Casualty of Post-Crisis Financial Policy* (Federal Reserve Bank of Chicago/European Central Bank Nineteenth Annual International Banking Conference 2016).

⁵¹ See Rachel Louise Ensign, *Americans' Finances Got Stronger in the Pandemic*, WALL ST. J., January 10, 2022.

equitable the current banked delivery system. As their design added to our repertoire, it would invite new ways of making modern money justly and democratically. [Section 5]

The argument begins below by considering how we got here. To figure out the hardwiring of modern capitalism, we need to “follow the money” – not to its ends, but its beginnings. We need to learn how money is created, allocated, and dispensed. Understanding the design enables us to see its consequences. The second section locates the way banks and shadow banks receive and deploy a structural advantage to lend in newly created money. That advantage enables them to steer credit with unparalleled influence, thus writing their allocative decisions into the material world. Third, the essay considers how, if at all, we justify the current system. A revisionary history of modern banking, sketched preliminarily here, locates banks as actors with an opportunistic advantage in retail money creation, not as experts or best agents evolved to disseminate new money for the public. Theories that rationalize banking in that role fail to fill the void, misattributing the history and neglecting design alternatives, reminding us that we lack a “control” in the ongoing experiment that financial history represents. The fourth section explores the way public spending consolidates the banked logic of distribution. Finally, I consider how we might operate outside the financial architecture, suggesting an experiment that would allow the public to spend “beyond” finance.

I. Monetary Hardwiring: The Design

We can start with the consensus about the need for a medium. According to its authorizing statute, the Federal Reserve should operate “to maintain long run growth of the monetary and credit aggregates” commensurate with the economy’s productive potential. Later, the legislation identifies the Fed’s role as “providing liquidity” only (as opposed to helping failing companies).⁵² Experts reiterate the critical role of “liquidity” and identify “protecting the money supply” as essential to that end.⁵³

The consensus about the need for a medium cuts to the quick of exchange. Markets are made deep and diverse by many things – but the most basic is having a unit to capture and compare value. Money, according to Aristotle, is the measure that creates commensurability.⁵⁴ We cannot compare value(s) until we can express it in a measure that captures our judgments. Nor can we assume that simply stating a term, *e.g.*, “a dollar,” accomplishes that task. To the

⁵² See 12 U.S.C. §225a; 12 U.S.C. §343.

⁵³ PAUL TUCKER, *THE LENDER OF LAST RESORT AND MODERN CENTRAL BANKS: PRINCIPLES AND RECONSTRUCTION* 12, 15 (2014); ADAIR TURNER, *BETWEEN DEBT AND THE DEVIL: MONEY, CREDIT AND FIXING GLOBAL FINANCE* 1, 10 (Princeton University Press 2016).

⁵⁴ JOEL KAYE, *ECONOMY AND NATURE IN THE FOURTEENTH CENTURY: MONEY, MARKET EXCHANGE, AND THE EMERGENCE OF SCIENTIFIC THOUGHT* 45-46 (Cambridge University Press 1998); see also Christine Desan, *The Key to Value: the Debate over Commensurability in Neoclassical and Credit Approaches to Money*, 83 *LAW & CONTEMP. PROBS.* 1(2020).

contrary, political communities labor to establish and maintain a working medium: they generate a unit with value that will be recognized across participants. The process is complex, conspicuously orchestrated by arranging political obligations and legal duties to create a medium that can operate over time.⁵⁵ People can then extend credit in the unit, reciprocating in kind or in the credit medium itself. For modern experts, a “liquid” market is one sufficiently rich in means of payment to allow the trades that people want to make.⁵⁶

In the United States, the dollar provides the unit of account, the measure that creates commensurability across goods. Far from a naming convention or mere denomination, a dollar represents a certain amount of real value: it is actually a small, circulating piece of sovereign debt. According to federal law, dollars are “obligations of the United States . . . receivable by all national and member banks and Federal Reserve banks and for all taxes, customs, and other public dues” (12 U.S.C. §411). Those units are also made transferable between private parties, a quality enhanced by the dollar’s stature as the unit of account in official proceedings, including court judgments (31 USC §5103).⁵⁷ In effect, anyone holding a dollar has an asset that keys to material value because it can be used to pay off real obligations. (Money is considered the safest of “safe assets” – types of debt that reliably hold their value.⁵⁸) In the modern world, those countries with sovereign currencies define their monetary units in analogous ways.⁵⁹

Dollars are perennially “in demand.” *Public* demand accounts for part of that: governments transact in their own medium, paying it out and taking it back for value. *Private* demand expands on that public anchor: once a sovereign money circulates and is widely recognized, people use it for their own purposes. Governments reinforce that commonsense practice. In their courts and administrative proceedings, they recognize value as something monetarily measured, transferred, and represented, enforcing their own unit as the default and, in some cases, the exclusive mode of payment.⁶⁰ Indeed, demand for the sovereign medium is rarely the problem. Over centuries, demand for a means to capture and convey value has far outrun supply. Medieval Europeans struggled to make an accessible medium out of metal; American settlers

⁵⁵ See, e.g., CHRISTINE DESAN, *MAKING MONEY: COIN, CURRENCY, AND THE COMING OF CAPITALISM* (Oxford University Press 2014).

⁵⁶ See, e.g., Perry Mehrling, *Payment vs. Funding: The Law of Reflux for Today* 4 (Institute for New Economic Thinking Working Paper No. 113 ed. 2020).

⁵⁷ See also An act establishing a mint, and regulating the Coins of the United State, 1 Stat. 246, 250-252 (1792).

⁵⁸ See, e.g., Pierre-Olivier Gourinchas & Olivier Jeane, *Global Safe Assets* (Bank for International Settlements 2012).

⁵⁹ See Christine Desan, *Money’s Design Elements: Debt, Liquidity, and the Pledge of Value from Medieval Coin to Modern “Repo”*, 38 *BANKING & FIN. L. REV.* (forthcoming 2022).

⁶⁰ See Christine Desan, *The Monetary Structure of Economic Activity* (2020). Common law debt is example of a legal doctrine that could only be satisfied in the sovereign’s coin. DESAN, *supra* note 55, at 83-97.

desperately invented substitutes for imperial coin as it vanished; citizens in the Soviet Union improvised awkward trades of value as the ruble failed.⁶¹

Supply is a different story. The amount of sovereign debt that a community issues to pay for public needs – defense, for example – bears no necessary resemblance to the amount of money its citizens might wish to hold for their own use; it might shrink just as individuals want more of it. The federal government issued “greenbacks” – sovereign I.O.U.s – to pay soldiers and suppliers during the Civil War. But that medium entered and lubricated the civilian market; Americans after the War protested when the U.S. stopped spending on military needs and began to tax the currency back in. Drawing down the medium forced prices to fall as money became scant, leaving debtors scrounging to make enough at lower rates to repay commitments earlier made.⁶²

Modern political economies face a similar “supply” challenge: after creating a sovereign unit of account for public use, they need to find a way to amplify that medium to meet private demand.⁶³ More, they need to find a way to pace the supply of liquidity -- the medium broadly considered to include credit forms – to the activity in the market that is producing demand.⁶⁴ A medium that cannot expand -- that has no “elasticity” to respond to increased need -- will mean that prices fall or trades that would otherwise happen go unmade. Conversely, a medium that expands too much will produce inflation as supply runs overboard and individuals unload the medium by paying more for existing commodities.⁶⁵

Across different political economies, communities have improvised a variety of solutions. For example, Europeans in the Middle Ages constructed a system called “free minting.” Authorities sold individuals as much coin as they wanted, taking payment in bullion.⁶⁶ By contrast, early

⁶¹ See DESAN, *supra* note 55 at 108-150; DAVID WOODRUFF, *MONEY UNMADE: BARTER AND THE FATE OF RUSSIAN CAPITALISM* (Cornell University Press 1999). Farley Grubb theorizes monetary scarcity in this vein. See Farley Grubb, *Chronic Specie Scarcity and Efficient Barter: The Problem of Maintaining an Outside Money Supply in British Colonial America* (NBER Working Paper no. 18099, 2012, rev’d 2018).

⁶² See, e.g., RICHARD FRANKLIN BENSEL, *YANKEE LEVIATHAN: THE ORIGINS OF CENTRAL STATE AUTHORITY* 289-92 (Cambridge University Press 1990).

⁶³ Demand for a medium will be affected by the forms of credit that may be available and does not reduce, therefore, to a single quantity or one type of liability. See, e.g., TURNER, *supra* note 53, at 253 n.8; Mehrling, *supra* note 56.

⁶⁴ Recall, above, the language in FRA enjoining its Board “to maintain long run growth of the monetary and credit aggregates *commensurate with the economy’s long-run potential to increase production*. . . .” 12 U.S.C. §225a.

⁶⁵ Mehrling, *supra* note 56.

⁶⁶ Economists would later map the way prices, rising as more coin entered circulation, could shut down additional supply because it meant coin had become less valuable. See THOMAS J.

American settlers issued provincial paper debt to pay militia and allowed that debt to circulate in the private markets. When the money stock began to diminish during peacetime -- the same problem as occurred after the Civil War -- they innovated public land banks. The legislature lent provincial paper debt to people taking mortgages as collateral. As Benjamin Franklin proudly observed, Pennsylvania managed to irrigate its private economy with the land bank system.⁶⁷

In short, an elemental aspect of state-building is creating a medium for public and private uses and maintaining it as an effective means of valuation and exchange. Among the many aspects of that challenge, authorities must find a way to inject the medium into circulation and, ideally, tie its growth to productive economic activity.

Enter the design innovation that introduced modern capitalism. The design centers on a unit of sovereign debt, as characterizes other monetary systems.⁶⁸ But from the start, public authorities in capitalist systems work with a new logic: they issue the debt *indirectly* through investors rather than *directly* to the public. The investors' promises-to-pay become the sovereign unit of account. In turn, the government matches those promises-to-pay with a longer-term obligation it makes to the investors – a bond.⁶⁹ Dollars and financial assets thus issue together and from the center of the system.

Historically, the pattern arose when governments borrowed from groups of investors, chartering them as national banks. The innovation was to locate investors as the authors of money: governments gave the investors long-term bonds and took the investors' notes or private promises-to-pay to use as money. The strategy thus matched money against a financial asset from the moment of origin.⁷⁰ Public authorities then treated the bank credit as money, spending and taxing in it.

We live in the linear descendant of that system. Today's dollar is the note (or deposit liability) of the Federal Reserve System, just as the English pound is the note (or deposit liability) of the Bank of England. Each central bank issues its notes in return for a longer-term bond – a Treasury security, for example. By contrast, the greenback was a piece of sovereign debt spent directly to the public during the Civil War. It was called a “United States Note” according to its

SARGENT & FRANÇOIS R. VELDE, *THE BIG PROBLEM OF SMALL CHANGE* 9-12 (Princeton University Press 2002).

⁶⁷ Benjamin Franklin, *Remarks and Facts Relative to the American Paper Money*, PENNSYLVANIA CHRONICLE, 1767, at 342-44; *see also* Richard Lester, *Currency Issues To Overcome Depressions in Pennsylvania, 1723 and 1729*, 46 J. POL. ECON. (1938).

⁶⁸ ZACHARY D. CARTER, *THE PRICE OF PEACE: MONEY, DEMOCRACY, AND THE LIFE OF JOHN MAYNARD KEYNES* 188-89 (Random House 2020); DESAN, *supra* note 55.

⁶⁹ *See, e.g.*, Desan, *supra* note 59.

⁷⁰ TURNER, *supra* note 53, at 22-23; DESAN, *supra* note 55.

direct issuer, and it issued unmatched by a bond because the U.S. owed no middleman for help issuing the debt.⁷¹

Solving the supply challenge requires a second step in the design. There must be a way to spread money from the center out through the hands of individuals. That mechanism will supplement the use of the base medium, creating elasticity for private exchange. Earlier systems had contrived different solutions, from selling people coin at the mint to lending them public credit notes after they put up their land as collateral. The strategy characteristic to capitalism is to extend the financial logic of investor-mediated money creation.⁷² In the United States, the process came together over the course of the 19th century, shaped both by American federalism and intense experimentation globally. By the time the Federal Reserve System began operation in the early 20th century, the template was clear.

It works like this. The federal government enables commercial banks to write credit in the public medium, defined as the notes or liabilities of the Federal Reserve System.⁷³ Operating within a network that the Fed supports, commercial banks extend credit written in the dollar on the basis of a much smaller amount of capital and fewer liquid reserves than would otherwise be necessary.⁷⁴ For each extension of credit they make, banks take a longer-term obligation from the individuals or companies borrowing from the bank. That is, just as the government creates base money on the back of a longer-term obligation, so also do commercial banks create credit money on the basis of a longer-term promise to repay them.

The design solves the challenge of supplying money for retail use: as borrowers want money, they take out loans and obtain bank credit denominated in the dollar. That is, financial

⁷¹ An Act to Authorize the Issue of United States Notes, ch. 33, 12 Stat. 345 (1862). Central banks can also issue dollars against certain other kinds of assets. *See, e.g.*, 12 U.S.C. §§ 343-348.

⁷² As opposed to defining “finance” as intermediation of existing money, I use it here to refer to the creation of credit-based assets. For work equating finance with intermediation, *see, e.g.*, Anat R. Admati, *Towards a Better Financial System*, ECONOMISTS FOR INCLUSIVE PROSPERITY POLICY BRIEF (2019); Thomas Philippon, *Has the US Finance Industry Become Less Efficient? On the Theory and Measurement of Financial Intermediation*, 105 AM. ECON. REV., 1408 (2015).

⁷³ *See* 12 U.S.C. § 411; 31 U.S.C. §5103; *see also* *Veazie Bank v. Fenno*, 75 U.S. 533 (1869) (coins, greenbacks, and national bank notes all “furnished by the government” directly or indirectly). The government’s work authorizing and supporting bank lending is extensive. It includes setting aside legal requirements that lenders hold money backing each of their promises; creating and operating the system that banks use daily to clear their mutual credits against each other; calibrating the costs of credit by working with banks in setting monetary policy; and acting as a lender of last resort in emergencies. For an introduction, *see, e.g.*, Board of Governors of the Federal Reserve System, *Purposes and Functions*, 2016.

⁷⁴ For more detail, *see infra* TAN 89-104. State and federal regulations establish capital and liquidity requirements for entry into banking.

engineering creates the system's desired elasticity – a money supply, broadly defined to include credit in money, that will swell with the economy and shrink as demand subsides.⁷⁵

An ingenious solution and one that turned out to be fertile, spreading world-wide over the 19th and 20th centuries. Today, credit written and extended by banks provides the medium that people use in the vast majority of their exchanges. In the United States, almost nine times as much value changes hands by transferring that kind of credit than using the cash dollar.⁷⁶ In other words, for all intents and purposes, commercial banks make the medium we use: they are the purveyors of money at the retail level.⁷⁷

That logic can be replicated. A variety of large financial companies have learned to create inventories of assets that they fund with short-term credit. These “shadow banks,” often broker-dealers in the wholesale money markets, borrow cash from investors like pension funds or corporations with cash on hand, using short-term but renewable contracts. The borrowed money finances securities that, in turn, can act as collateral for the deal. The technique lasts as long as the large cash investors are willing to renew those overnight contracts, content to charge low interest for their loans because their funds can be retrieved and are thus effectively like money.⁷⁸

According to some observers, the shadow banking system grew up as an ancillary to monetary policy by central banks: officials found it useful to have financial entities (the big broker-dealers of the capital market) with large inventories of sovereign bonds that could be bought and sold to effectuate that policy. According to others, the system developed as financial actors sought higher returns and contrived a method of cheap funding by replicating the pattern used by banks.⁷⁹ In either event, notice that the overnight contracts that shadow banks employ create a kind of credit-based medium – more liquidity. That liquidity in turn irrigates exchange that expands the market for securities. As that demand rises, shadow banks create, elastically, the liquidity to enable exchange in the capital market.⁸⁰ In short, banks make most of the money

⁷⁵ See, e.g., Perry Mehrling, *Retrospectives: Economists and the Fed: Beginnings*, J. ECON. PERSPS. (2002).

⁷⁶ See Lev Menand, *Unappropriated Dollars: The Fed's Ad Hoc Lending Facilities and the Rules That Govern Them* 10 (European Corporate Governance Institute 2020)(\$13 trillion compared to \$1.5 trillion).

⁷⁷ Cf. *Veazie Bank*, 75 U.S. at 549 (“Congress has undertaken to supply a currency for the entire country. . . . It now consists of coin, of United States notes [greenbacks], and of the notes of the National banks.”)

⁷⁸ See, e.g., HAL S. SCOTT, *CONNECTEDNESS AND CONTAGION: PROTECTING THE FINANCIAL SYSTEM FROM PANICS* (The MIT Press 2016); RICKS, *supra* note 48; PERRY MEHRLING, *THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT* (Princeton University Press 2011).

⁷⁹ See RICKS, *supra* note 48, at 194-96; MEHRLING, *supra* note 78, at 54-55.

⁸⁰ See Desan, *supra* note 59, at 3-7 (summarizing literature).

individuals use and shadow banks supply much of the medium used by corporations and large investors.

At the end of the day, the monetary system of the United States has a distinct design, one expressive of modern capitalism. The hardwiring starts with a public medium made at the center by the government. As with moneys generally, the unit is anchored on public obligation – the sovereign medium satisfies public charges and is privileged for use in private exchange. But today, a nominal creditor -- formerly a group of investors, now a national or central bank – issues those units of sovereign debt as its own promises-to-pay (Fed notes or deposit liabilities). That creditor holds a longer-term security obligating the government to tax back value – represented by the creditor-issued units now circulating as sovereign liabilities -- in order to pay off the security.⁸¹

The base money is then amplified by commercial banks that extend credit in the shape of their own promises-to-pay the public medium. As in the case of public money, private bank credit issues to borrowers on the back of longer-term assets that obligate the borrowers to repay. That logic of liquidity creation is replicated by shadow banks. The credit-based media that they create supplies liquidity within the capital markets. We come full circle here: the financial assets created by the government – the bonds that the Fed or commercial banks hold -- provide critical mass to the capital markets and stabilize them. (Other financial assets like corporate bonds and stocks also trade there, along with an increasing number of securities originated as loans by banks and “securitized.”)⁸²

The design makes an arresting commitment to a financial logic. Every bit of cash (a demand liability) should be memorialized by a longer-term commitment, even if both the cash liability and the longer-term commitment are made by the public. Money for individual use should be created by businesses extending credit for profit. That strategy can be replicated to create more liquidity so that trade in financial assets themselves can be facilitated.

II. The Privatized Circulatory System

Capitalism’s hardwiring endows banks with a striking role. As retailers of liquidity, they select which recipients will benefit from the expansion of the public medium. In that role, banks enter a politically loaded territory. On one hand, they operate according to their calculus as

⁸¹ *See id.* at 16-18.

⁸² *See, e.g.,* Larry Neal, *How It All Began: The Monetary and Financial Architecture of Europe from 1648 to 1815*, 7 *FIN. HIST. REV.* (2000) (reconstructing origins of public assets as stabilizing capital markets); Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 *CORNELL L. REV.* 1143, 1175-81 (2017) (assessing structure of relationship between bonds and capital markets).

commercial actors. On the other, they determine much about how private spending occurs as agents for the public.

The complaint most often made about the financial system is that it siphons off a disproportionate amount of profit. By a variety of measures, finance has become “bloated” – its power and ability to capture profits is particularly striking in periods of laissez-faire. Measured narrowly, the costs of finance relative to GDP grew from 2% to 6% in the early 20th century through the 1920s, fell across the mid-century (a period of strong economic development), and rose after 1980 to almost 9% in 2009.⁸³ A broader measure of sectoral profits finds an even more notable expansion of finance (to 40% of total profits in the U.S. economy in 2001 from 10 to 15% in the 1960s).⁸⁴ The profits claimed by finance in its high periods came without increased output, whether improvements in price discovery or risk-sharing. Heightened profits instead indicate that the nonfinancial sector effectively transferred increasing amounts of income to finance.⁸⁵ Neither the Financial nor COVID-19 Crisis broke the pattern.⁸⁶

The capacity of finance to capture profits draws reformers. As critics point out, a variety of regulatory measures could rein in rents, as they did at mid-century. Heightened capital requirements for banks, aggressive use of reserve requirements, limits on margined purchases of securities, ceilings on executive compensation, taxes on transactions or trading, the prohibition of stock buy-backs, a tax on wealth and redistribution of its proceeds – have all been suggested to reduce the profits going to finance.⁸⁷

⁸³ Thomas Philippon, *Finance vs. Wal-Mart: Why are Financial Services so Expensive?*, in *RETHINKING THE FINANCIAL CRISIS* at 1 (Alan S. Blinder, et al. eds., 2012); *see also* TURNER, *supra* note 53 at 18-33.

⁸⁴ GRETA KRIPPNER, *CAPITALIZING ON CRISIS: THE POLITICAL ORIGINS OF THE RISE OF FINANCE* 28 (Harvard University Press 2011). Unlike Philippon, Krippner includes real estate in the financial sector.

⁸⁵ Philippon identifies the cost-generating activity of finance as increased trading but finds that trading activity had no measurable effect on improving information about pricing or risk-taking. *See* Philippon, *supra* note 83; *see also* TURNER, *supra* note 53, at 27 (tracking “excess wage” garnered by financiers).

⁸⁶ *See* Felix Salmon, *Chart of the Day: U.S. Financial Profits*, REUTERS, March 30, 2011 (finance gaining 30% domestic profits for 10% value-added); Andrew Ross Sorkin, *Dealbook/ Business & Policy*, N.Y. TIMES, July 16, updated September 1, 2020 (COVID Crisis trading benefiting investment banks to “indecent” degree).

⁸⁷ *See, respectively*, TURNER, *supra* note 53, at 10, 186-209 (increased capital and reserve requirements); William Lazonick, *The Financialization of the U.S. Corporation: What Has Been Lost, and How It Can Be Regained*, 36 SEATTLE U. L. REV. (2013) (stock buy-backs); THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (Arthur Goldhammer trans., Harvard University Press 2014) (global tax on wealth).

But even if we reined in rent-seeking, finance would remain at the heart of the drama. As mapping the monetary hardwiring shows, that design is the innovation that sets capitalism apart: it makes banks the retailers of liquidity by giving them distinct advantages in creating and injecting money for everyday exchange. Banks' determinations – their allocations of credit dictate the flow of new money into the economy.

The argument here is structural: according to the design of the system, banks are facially determining the way new monetary value is injected into exchange. They are therefore deploying public power to make distributive decisions for society.

As a baseline, consider the way individuals or companies lend to one another. That activity does not affect the money supply; it is just a transfer of funds, one to another. Non-bank lenders operating for a profit will charge their borrowers whatever it costs them to part with an existing asset; we might assume the going interest rate.

The case is different when the loan occurs in newly created money. Most often, economists have considered the case where the government spends new money into circulation. Insofar as money is a legal claim that can be used to pay off a future tax obligation – and modern money is clearly such an entity⁸⁸ -- it can be conceptualized as an asset or, more precisely, as the claim to an asset with the asset defined as the value of setting off taxes in the future.⁸⁹ In effect, the government acts as a borrower paying a person, someone who sells it goods for example, with a *promise* of value that will come to fruition when the tax is paid. In that case, the seller is a creditor who takes a promise of value to be paid off at a certain point in the future. If so, the creditor should charge interest on the advance of goods. (She could do so by discounting the current value of the money to the moment when it can be used for the tax. The seller would put that discount into effect by conveying fewer goods today than she would have to convey in goods later to pay the tax.)⁹⁰

In fact, however, asset-pricing models of money teach a different lesson. People will take money without charging interest because the government is offering them a medium that is uniquely useful to them. It offers unparalleled cash services – including the capacity to buy any other asset and, along with it, the earnings that asset will bring. In that case, people will pay the same rate for the cash services that money offers as they will earn on other assets that money could buy (in theory, the real interest rate). In other words, they will take money without demanding

⁸⁸ See *supra* TAN 56 to 57; Gourinchas & Jeane, *supra* note 58.

⁸⁹ See, e.g., Charles W. Calomiris, *Institutional Failure, Monetary Scarcity, and the Depreciation of the Continental*, 48 J. ECON. HIST. (1988).

⁹⁰ See the review of models at DESAN, *supra* note 55, at 45-46, including both asset-pricing models and those using more classic, quantity theory approaches.

interest (or a discount in the amount of goods they convey to the government up front). Money will circulate without bearing interest because it bears a “cash premium” or “money premium.”⁹¹

By the same token, the government will reap the rewards that accompany creating the medium that provides cash services. “Seignorage” refers to the profit that the government claims when it creates and injects money into circulation.⁹² The government has acquired the use of goods advanced to it in return for its promise alone – a promise it could make without first acquiring existing money. (The government has, in effect, deployed its unique capacity to make money.) Other parties will not have the same advantage. They will have to pay to acquire money – which is, in fact, the circulating promise of a *third-party*, the government. Thus we are returned to the conventional borrower and lender of existing funds.

Against this background, we can understand the privilege extended to commercial banks. As we saw above, banks lend by extending private credit but alone among credit alternatives, the government treats this private credit as an inflow to the money supply. That treatment enables banks to satisfy customers who demand money with the *promise* of money. As banking theorists elaborate, the magic occurs because the federal government allows commercial banks to offer their own credit – credit denominated in dollars -- to customers. When people borrow “money” from a bank the bank is actually providing them credit on the bank’s books in the shape of a deposit account, identifying the balance amount in dollars. When a borrower spends that credit, she is transferring the credit to someone else’s bank account. In a society that depends on banks, most people paid by check or money order simply maintain that balance in their own banks. Of course, they could demand cash at their banks, but people are generally content to leave deposit credits in the banking system as a whole, given the safety and convenience of using a bank account especially for large amounts.⁹³

As people holding accounts in different banks spend down some deposit accounts and/or receive payments into their accounts, the banks involved transfer reserves between themselves. The amount of reserves banks need for such transfers is small compared to the size of their deposits. On many days, reserves from incoming payments help cover most of the reserves required for outgoing payments. And for those days when they do not, a robust safety net undergirded by the

⁹¹ RICKS, *supra* note 48, at 42-46; Robin Greenwood, et al., *A Comparative-Advantage Approach to Government Debt Maturity* 70 J. FIN. 1683, 1687-788 (2015); DESAN, *supra* note 55 at 46-50.

⁹² Manfred J. M. Neumann, *Seigniorage in the United States: How Much Does the U.S. Government Make from Money Production?* (2014).

⁹³ See Benjamin Geva, *'Bank Money': The Rise, Fall and Metamorphosis of the 'Transferable Deposit'* in MONEY IN THE WESTERN LEGAL TRADITION: MIDDLE AGES TO BRETTON WOODS 380-86), (David Fox & Wolfgang Ernst eds., 2017) (breaking down legalities of bank transfer); *Libyan Arab Foreign Bank v. Bankers Trust Co.*, 1 728 (Queen’s Bench Division).

central bank is there for support.⁹⁴ That collective decision to delegate money creation to banks means that banks have lots of private credit circulating – credit that does the work of money.

The money supply expands in effect, bringing with it the cost saving that comes as those holding accounts do so without demanding one-to-one security in money for the promises they hold. Insofar as bank customers accept the system as one that ensures them the effective equivalent of money, they demand little or no interest. People are content to hold money for the services it provides; they are in fact receiving a kind of non-pecuniary return – the cash-like quality of commercial bank deposits.⁹⁵ Banks thus benefit from a form of seignorage.

Commentary on private seignorage peaks in periods of rapid monetary change. During its American efflorescence, John Adams, early New York banker Alexander Johnson, James C. Calhoun, and Sec. of the Treasury (future Justice) Salmon Chase among others called out the profit attached to money creation by private banks.⁹⁶ The Depression drove theorists to emphasize private seignorage; as Princeton economist Frank Graham put it, in the “uttering of their uncalled noninterest-bearing promises, the banks obtain permanent interest-bearing assets (loans and investments) at no direct cost to themselves and at the expense of the public at large.”⁹⁷ The Financial Crisis of 2008, the monetary drama of 2020, and the diffusion of banking

⁹⁴ Lucid descriptions of clearing and set-off logic are Mehrling, *supra* note 56; Orian Peer, Money Creation and Bank Clearing (unpublished manuscript, 2022); Marc Lavoie, Endorsing the Money-creation View, <https://justmoney.org/endorsing-the-money-creation-view/> (JustMoney.org 2020).

⁹⁵ In fact, insofar as the government guarantees bank deposits, it converts the banks’ credit into a sovereign liability. To the extent that deposits are insured, they can be identified directly as sovereign-backed money. See, e.g., A. JACKSON & B. DYSON, MODERNIZING MONEY 61 (Positive Money, 2013).

⁹⁶ Letter to Benjamin Rush, August 28th, 1811, (Date, 1811) (“It is taxing the public for the benefit and profit of individuals.”); A. B. JOHNSON, AN INQUIRY INTO THE NATURE OF VALUE AND OF CAPITAL, AND INTO THE OPERATION OF GOVERNMENT LOANS, BANKING INSTITUTIONS, AND PRIVATE CREDIT 22, 73 (Pub. for the author 1813) (similar); John C. Calhoun, THE PAPERS OF JOHN C. CALHOUN 292-305 (Clyde N. Wilson & Shirley B. Cook eds., 1838; 1998) (identifying government borrowing from banks as payment for privately created money); RICHARD H. TIMBERLAKE, MONETARY POLICY IN THE UNITED STATES: AN INTELLECTUAL AND INSTITUTIONAL HISTORY 130 (University of Chicago Press 1993) (quoting Chase charging bank notes as “loans without interest from the people to the banks”). For the diagnosis of seignorage by the parliamentary committee reviewing banking during the long British period of inconvertibility, see Select Committee on the High Price of Gold Bullion, Report 71-72 (House of Commons ed., Richard Taylor and Co. 1810).

⁹⁷ Frank D. Graham, *Partial Reserve Money and the 100 Per Cent Proposal*, 26 AM. ECON. REV., 432 (1936); see also IRVING FISHER, 100% MONEY 19 (City Printing 3 ed 1945) (condemning money creation by private banks as given “for nothing”). To Graham, insofar as private seignorage was a kind of “privateer[ing]” of profit from the public’s commerce, its optics induced the system’s defenders to ignore it. Graham, *supra* note 97, at 432.

privileges that preceded them drove recent analyses to model the way that “financial intermediaries engage in private money creation, thereby capturing the same monetary convenience premium” as the government.⁹⁸

That phenomenon endows banks (and similar financial entities) with particular efficacy -- and thus import -- as lenders. The ability of banks to create a credit medium that offers a cash premium allows them to maintain their collective system at relatively low cost. The advantage makes their services uniquely competitive. Banks lend on a smaller base of capital and more limited reserve of money than lenders without money-creative ability.⁹⁹ In turn, they can pass on some of their savings to their borrowers, offering them loans at lower interest rates than non-bank creditors can afford.¹⁰⁰

In fact, banks could pass on virtually all their seignorage to borrowers – and make only more emphatic the point for our purposes. The benefit they reap from the privilege they hold to expand the money supply entrenches them as the most attractive lenders for individuals and businesses. That position gives them singular influence over the distribution of credit in society.

⁹⁸ Greenwood et al., *supra* note 91, at 1684-85; see also Jeremy C. Stein, *Monetary Policy as Financial Stability Regulation* 127 Q. J. ECON., 57-58 (2012); Gary Gorton, *Bank Regulation When Banks and Banking Are Not the Same*, 10 OXFORD REV. ECON. POL’Y 109(1994) (assessing “charter value” as similar to seignorage). For legal analyses, *see, e.g.*, John Crawford, *Radicalism and Democracy in Monetary System Reform*, VAND. L. REV. (2022); Morgan Ricks, et al., *FedAccounts: Digital Dollars*, 89 GEO. WASH. L. REV. 113, 140-41 (2021).

⁹⁹ A recent New York Fed report put the long-run difference between banks’ and non-banks weighted average cost of capital at 6%. Anna Kovner & Peter Van Tassel, *Evaluating Regulatory Reform: Banks’ Cost of Capital and Lending* (Federal Reserve Bank of New York Staff Report No. 854 2018, revised 2020). That lower cost of capital allows banks to lend at a lower rate than entities that do not have the same advantages. For example, banks offered small businesses credit in 2021 at average annual interest rates between 2.58%-7.16%; the rate offered online or alternative lenders was 13%-71%. Nina Godlewski, *Average Small Business Loan Interest Rates in 2022: Comparing Top Options* (ValuePenguin 2022). (Costs for such lenders are also affected by other factors.) Nonbank online lending represents a growing source of credit for small businesses; speed, ease, and success in qualifying motivate that trend according to applicants. At the same time, “more than half [online lender applicants say] they experienced high interest rates, and almost a third reporting concerns with unfavorable repayment terms. Barbara Lipman & Ann Marie Wiersch, *Uncertain Terms: What Small Business Borrowers Find When Browsing Online Lender Websites*, Board of Governors of the Federal Reserve System (2019).

¹⁰⁰ *See supra* note 99; Greenwood et al., *supra* note 91, at 1684-1685; Stein, *supra* note 98, at 57-58; Nadav Orian Peer, Note on the Distribution of the Liquidity Premium: Banks, Borrowers, and the Unbanked (2020).

Their monopoly is protected by the government with notable, if not complete, success.¹⁰¹ As the author of its own currency, a government can prohibit third-parties from holding themselves out as depository institutions if they promise more credit in the sovereign’s currency than they hold.¹⁰² Against that baseline, the government licenses specific institutions to engage in money creation.

Indeed, limits on the permission to “make” money – effectively, to extend the sovereign medium -- come with the territory. The amount of government support entailed in a banking charter is enormous and could not be spread indefinitely. The nation’s central bank coordinates the payments system for member banks -- clearing their mutual obligations, providing intra-day credit, monitoring credit conditions, and policing the behavior of participants.¹⁰³ More remarkable still, the government must anticipate and manage the “inherent instability” of private credit creation. As Hyman Minsky famously argued, institutions that lend by adding to the money supply can drive up the value of the very assets they finance, a dynamic that engenders more lending, more money creation, and rising asset prices – a credit bubble that will inevitably come to an end when some debtors are unable to borrow in the rising market. At that point, the government will have to support the architecture it has elaborated to dispense liquidity at the retail level.¹⁰⁴

The design explains the structural advantage that banks and, more recently shadow banks, hold over other lenders. Even (and as) it is diffused, used, or mimicked by other lenders, access to bank loans remains the critical ingredient for success in a range of economic initiatives, from home-owning to independent entrepreneurship. A recent study of banking identified access to bank credit as the “dramatic difference” that distinguished the fortunes of families “financing the

¹⁰¹ For the assimilation of maturity transformation (or near money creation) as a strategy of financing by non-bank entities, *see, e.g.*, RICKS, *supra* note 48; Gorton, *supra* note 98.

¹⁰² *See* Foley v. Hill, 2 HLC 28 (House of Lords) (declining to hold fractional reserve lending to breach fiduciary duty). *See generally* NAOMI R. LAMOREAUX, *INSIDER LENDING: BANKS, PERSONAL CONNECTIONS, AND ECONOMIC DEVELOPMENT IN INDUSTRIAL NEW ENGLAND* 11, 37-38 (Cambridge University Press 1994).

¹⁰³ *See, e.g.*, Board of Governors, *supra* note 73; *see generally* Nadav Orian Peer, *Money Creation and Bank Clearing* (draft, 2022); Morgan Ricks, *Money as Infrastructure*, 3 COLUM. BUS. L. REV. (2018).

¹⁰⁴ The Financial Crisis exposed precisely that danger, this time in the shadow banking sector that has developed with the federal government’s acquiescence. When the bust happened, the government mobilized its immense capacity to rescue those who had become dependent on the liquidity. For the argument that shadow banks dangerously violate the constrained delegation of money creation to depository institutions, *see* RICKS, *supra* note 48. Others argue that the provision of near money in the capital markets is either useful for the transmission of monetary policy, or essential to the daily operation of financial markets. In that view, it should be regulated and supported by the central banks. *See, e.g.*, SCOTT, *supra* note 78; MEHLING, *supra* note 78.

purchase of homes, automobiles, and consumer goods,” as well as business enterprises “obtaining working capital.”¹⁰⁵ Conversely, those families denied adequate bank credit are effectively excluded from the lower cost financing that built the American middle class. Contemporary estimates including eligibility for credit cards and conventional bank loans put the number of people with lack of access at some 60 million, noting that it left them “fewer options when they face financial difficulties,” relegated them to costlier alternatives like payday lenders, and reduced their ability to invest in businesses or education.¹⁰⁶

As retailers of liquidity who act according to a calculus of profit, commercial banks need not claim that the way they steer credit penetrates widely in society, let alone reaches the most needy. If banks have a bearing on those ends, it would be because their borrowers diffuse money through the economy.

The evidence for that result is lacking. To the contrary, certain regions, income groups, and sectors are starved of bank credit. Populations in the South and Southwestern U.S., particularly in rural areas, have lesser access to banks, lower incomes, and lower rates of employment.¹⁰⁷ In an odd cross-fertilization across the credit system, the increased competition that banks faced from expanding capital markets during the 1970s and 80s pressed banks to further curtail services to poor borrowers.¹⁰⁸ More generally, financing to small businesses from banks declined 48% between 2008 and 2018; those borrowers turned instead to higher-priced loans from the FinTech industry or sought financing from community development finance institutions (CDFIs).¹⁰⁹

¹⁰⁵ CHARLES W. CALOMIRIS & STEPHEN HABER, *FRAGILE BY DESIGN: THE POLITICAL ORIGINS OF BANKING CRISES AND SCARCE CREDIT* 7 (Princeton University Press 2014); *see also* Jonnelle Marte, *U.S. Consumers’ Access to Credit May Be Worse Than Previously Thought: Fed Study*, REUTERS, Sept. 24, 2019; JENNIFER TAUB, *OTHER PEOPLE’S HOUSES* (Yale University Press 2014); LAWRENCE GOODWYN, *THE POPULIST MOMENT: A SHORT HISTORY OF THE AGRARIAN REVOLT IN AMERICA* (Oxford University Press 1978).

¹⁰⁶ For the quantitative estimate, *see* Marte, *supra* note 105; for the transformative importance of home mortgage lending in building the middle class, *see, e.g.*, LOUIS HYMAN, *DEBTOR NATION: THE HISTORY OF AMERICAN IN RED INK* (Princeton University Press 2012); *see also* MEHRSA BARADARAN, *HOW THE OTHER HALF BANKS: EXCLUSION, EXPLOITATION, AND THE THREAT TO DEMOCRACY* (Harvard University Press 2015) (arguing importance of banking access).

¹⁰⁷ *See* Marte, *supra* note 105; Kausar Hamdani, et al., *Unequal Access to Credit: The Hidden Impact of Credit Constraints*, Federal Reserve Bank of New York (2019).

¹⁰⁸ *See* BARADARAN, *supra* note 106, at 50; Hamdani, et al., *supra* note 107. For the searing regional inequalities of 19th century, *see* Richard Sylla, *Federal Policy, Banking Market Structure, and Capital Mobilization in the United States, 1863-1913*, 29 J. ECON. HIST. (1969).

¹⁰⁹ Eric Hangen & Michael Swack, *CDFIs Can Make the SBA PPP Loan Program Work for Smaller, Minority-Owned, and Women-Owned, Small Businesses*. (2020). A survey of Massachusetts CDFIs found their resources very highly deployed (86%), suggesting great

Most egregiously, commercial banks have chronically shorted certain communities. A “substantial literature” documents that banks disfavor financing for minority-owned firms, along with small businesses and women-owned businesses.¹¹⁰ Discrimination against Black borrowers was so entrenched by the 1960s that it figured as a civil rights issue and the target of repeated federal legislative reform attempts. The inadequacy of those reforms, the Community Reinvestment Act foremost among them, would become notorious.¹¹¹

Empirical studies document that the shortfall in bank lending rates to Black and Latinx-owned businesses continues.¹¹² The COVID crisis underscored the problem. As scholars and advocates for minority borrowers pointed out, the weak ties between such borrowers and traditional lenders counter-indicated the PPP’s reliance on commercial banks to distribute funds. By contrast, entities like community development finance institutions – institutions with neither the money creative advantages of banks nor their privileged place in the monetary hardwiring – would have a better chance of reaching minority communities.¹¹³ By April 2021, a series of studies documented that discrimination by banks, along with other factors, had once again shorted the minority community of access to credit under the PPP.¹¹⁴

Discriminatory lending sorts borrowers by gender as well as race and ethnicity. Close on the heels of the civil rights movement, a National Commission on Consumer Finance documented

demand for their financing. See Massachusetts Public Banking, Testimony of Massachusetts Public Banking in Support of 6.665/H.1223. (2021).

¹¹⁰ Hangen & Swack, *supra* note 109 (citing literature).

¹¹¹ DANIEL IMMERGLUCK, CREDIT TO THE COMMUNITY: COMMUNITY REINVESTMENT AND FAIR LENDING POLICY IN THE UNITED STATES (M. E. Sharpe 2004).

¹¹² Alicia M. Robb & Robert W. Fairlie, *Access to Financial Capital among U.S. Businesses: The Case of African American Firms*, ANNALS AM. ACAD. POL. & SOC. SCI. 47, 63-68 (2007); BARADARAN, *supra* note 106, at 49-51; Greta R. Krippner, *Democracy of Credit: Ownership and the Politics of Credit Access in Late Twentieth-Century America* 123 AM. J. SOCIO. (2017); *see also* MEHRSA BARADARAN, THE COLOR OF MONEY: BLACK BANKING AND THE RACIAL WEALTH GAP (Harvard University Press 2017) (identifying the emphasis on “black banking” as a misfire given the handicap inherent to running a banking system that is effectively segregated); Emily Flitter, *This Is What Racism Sounds Like in the Banking Industry*, N.Y. TIMES, December 11, 2019 (for discriminatory conduct other than lending).

¹¹³ Hangen & Swack, *supra* note 109; Emily Flitter, *Black-Owned Businesses Could Face Hurdles in Federal Aid Program*, N.Y. TIMES, April 10, 2020. By April, 2020, only 78 of 950 such institutions had been approved by the Small Business Administration to participate in the PPP. *Id.* The Treasury has recently started a program to involve community development finance institutions more directly. *See* Board of Governors of the Federal Reserve System, *supra* note 49.

¹¹⁴ Cowley, *Minority Entrepreneurs Struggled to Get Small-Business Relief Loans*, N.Y. TIMES, 2021; Flitter, *supra* note 113; Flitter, *supra* note 29.

levels of discrimination against women, particularly insofar as they attempted to get mortgages in their own, as opposed to married, names. Overlapping with race-based bias, banking patterns discriminated by trading on conventional sexual roles and stereotypes. Banks routinely discounted women's income if they were of childbearing age, for example, assuming that they would soon leave their employment.¹¹⁵ They disfavored applications from women newly divorced or separated and distrusted the reliability of alimony and child support awards.¹¹⁶

Again, the results sound in an institutional key. Banks made their lending decisions on an array of factors, traditionally including interviews that accommodated biased evaluations. As demands for transparency mounted in the 1970s, banks turned towards credit scoring. As Greta Krippner has recently argued, that method drew on a series of factors – family size, for example, as opposed to credit history -- that perpetuated gendered role preferences and stereotyping, feeding further discrimination.¹¹⁷ Recent empirical studies document continued disparities in bank financing awarded to women-owned businesses.¹¹⁸

The rise of credit scoring dovetails with a last development – the ascending importance of capital markets. Credit scoring facilitates securitization, a process that wraps diverse streams of payment into financial instruments to produce a homogenized return to investors holding them. Mortgages, student debt, consumer and corporate borrowing, auto financing – all kinds of debt can be securitized and funded on the capital markets. That debt invites investors to frequent those markets – and incentivizes them to support further securitization. Thus the housing boom in the 1990s and early 2000, expanded by credit scores that misstated borrowers' abilities, fueled by increasing securitization, all funded through the capital markets.¹¹⁹

The magic of money creation resurfaces here. Recall that the large financial institutions that dominate the capital markets – broker-dealers and investment banks – have created techniques that effectively add “near money” or extra liquidity to the economy.¹²⁰ Shadow banks thus offer

¹¹⁵ Krippner, *supra* note 112, at 16. Banks might reduce (although not omit) the penalty if women demonstrated that they were taking birth control. *See id.*

¹¹⁶ *Id.* at 17-19; Flitter, *supra* note 29 (no Black women invited to apply for PPP loans in recent NCRC study).

¹¹⁷ Krippner, *supra* note 112, at 17-19.

¹¹⁸ U.S. Senate Committee on Small Business and Entrepreneurship, Majority Report, *21st Century Barriers to Women's Entrepreneurship* (2014) (finding only 4% total dollar value of small business loans went to women); *see also* National Women's Business Council, *Understanding the Landscape: Access to Capital for Women Entrepreneurs* (2018).

¹¹⁹ *See, e.g.,* TAUB, *supra* note 105; GARY GORTON, *SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007* (Oxford University Press 2010); *see also* Amar Bhidé, *Why We Need Traditional Banking*, NAT'L AFFS., 79-87, 89-90 (Winter 2018).

¹²⁰ *See supra* TAN 78- 79. *See* Perry Mehrling's definition of shadow banking as money market funding for capital market lending. *See* PERRY MEHRLING, *CORONA CRISIS: LESSONS OF THE*

advantages in lending that reiterate those we saw that attach to conventional banks. As noted above, that impact is growing. From 1995 to 2007, “money claims” of that type grew at an annualized 9.3%, far faster than the growth rate of economy, to comprise 75% of total liquidity (measured on a gross basis).¹²¹ Shadow banks cut back lending during the Financial Crisis, but recovered afterwards, comprising 58% of all lending by 2013. In fact, the Federal Reserve’s emergency lending to those entities, begun during the Financial Crisis, has legitimated that lending strategy. The decade of quantitative easing programs that followed further fueled the practice by loosening access to government funds.¹²² During the same period, commercial bank lending dropped; as of 2018, it contributed one-fifth to private debt.¹²³

Access to capital markets thus joins access to bank lending as an important determinant of economic opportunity.¹²⁴ That reality motivates concern given the instability that haunts those markets, a fragility that both the Financial Crisis and the COVID spring exposed.¹²⁵ The concern here is distinct: shadow banks, like banks, offer finance on uniquely competitive terms given their ability to expand the (near)money supply. Yet more conspicuously than banks, shadow banks accommodate only certain parties, either as investors or borrowers. Only large financial actors have direct access to capital market funding, while securitization packages indirect access in ways that are problematic to many small borrowers. The housing crisis suggests patterns that many argue are structurally likely to recur.¹²⁶

In short, banks and shadow banks make inherently political decisions about credit allocation insofar as they wield the singular privilege to create money. The system institutionalizes that role by supporting those actors daily as well as protecting them in crises like those of 2008 and 2020. The crises draw public outrage, as government support secures the profits made by banks and shadow banks. But the day-to-day authority of those agents is even more remarkable. It operates chronically with distributive impact, determining the destination of the credit that flows from the expanding money supply.

STRESS TEST (TALK GIVEN AT THE BOSTON ECONOMIC CLUB) (Boston University Media 2020). In Mehrling’s view, the drive to fund activity through maturity transformation of this type is endemic to profit-driven institutions, which are constantly seeking out ways to capture the liquidity premium attached to short-term assets. *Id.*

¹²¹ See RICKS, *supra* note 48, at 34-35. The growth rate in the economy as measured by GDP was 5.4%. For specifics about method of analysis, *see id.*

¹²² As Perry Mehrling puts it, the government’s actions lowered “liquidity risk” by making dollars from the Fed accessible on demand. See MEHRLING, *supra* note 120.

¹²³ Bhidé, *supra* note 119, at 78.

¹²⁴ See Ross Levine, *Finance and Growth: Theory and Evidence* (NBER ed., 2004) (reviewing literature); *see also* HOWARD BODENHORN, *STATE BANKING IN EARLY AMERICA 183-84* (Oxford University Press 2003) (noting advantages to capital market over bank finance).

¹²⁵ See, e.g., SCOTT, *supra* note 78; RICKS, *supra* note 48.

¹²⁶ See, e.g., TURNER, *supra* note 53; sources in *supra* note 125.

The issue for a democratic society follows: How do we justify that allocation of authority? What explains why increases in the public medium should be distributed by commercial actors operating for private profit? The facially discriminatory nature of the practice – only borrowers able to compensate commercial agents according to the judgment of those agents benefit from lower costs of private bank credit – sharpens the issue.

III. The Inadequacy of Justification: Accidental Agents, Retrospective Rationalization

In the search for answers, we should ask how banks came to occupy their current role distributing access in the form of credit assimilated to sovereign money. When we bring that function into focus, the preliminary evidence is unsettling. In Britain, where the practice as we know it was born, and in the United States, an early adopter, the history undermines the argument that commercial banks are the best distributive agents for the public. Rather, modern depository banks appear as accidentally essential institutions. They descend from businesses improvising to respond to shortages in the money supply, as opposed to experts in extending credit. In effect, those businesses were borrowing by way of their own promises and often on their own behalf. They were borrowing to survive, not lending deliberately to others whose productive potential they had vetted. Their location and opportunities invited banks to expand in place, developing into conduits that disseminated money to other borrowers denominated in the national unit of account.

Only later would commentators rationalize modern depository banks in their role. The theory drew deeply on the accomplishments of those institutions, now essential entities given their capacity to create money. That capacity located them as sources of capital, whether created out of credit or acquired from investors. The power of capital thus “accumulated,” commentators increasingly dubbed it as a fund, a mass, an existing wealth of savings that could be transferred to borrowers. Conceptualized in that way, modern retail banking gained a medieval genealogy, a “conjectural history” that connected those banks with early merchant lenders as “predecessors.”¹²⁷ The pattern re-enforced the claim by banks to expertise: it seemed now to carry credence as a best practice evolutionarily emerged. It was, after all, the age of Darwin.

It was also the age of neoclassical economics. Teched up in that new vocabulary, banking could be cast as the determination of private actors to move resources – intermediation -- rather than a complex coordination between state and bankers that expanded the sovereign money supply. In

¹²⁷ The phrase is Walter Bagehot’s. BAGEHOT, *supra* note 37, at 75; *see also* Raymond De Roover, *New Interpretations of the History of Banking*, in BUSINESS, BANKING, AND ECONOMIC THOUGHT IN LATE MEDIEVAL AND EARLY MODERN EUROPE: SELECTED STUDIES OF RAYMOND DE ROOVER (Julius Kirschner ed. 1974) (emphasizing disjuncture between medieval and modern banking).

turn, advocates imputed a competitive lineage to intermediation: it was a function appropriately held and honed by individuals vying in the marketplace. That dynamic certified the results, justifying the allocation of credit as the outcome of a rigorous process. Case closed with the imprimatur of an ascendant discipline.

We can start the story with British deposit banking. Writing at the moment it proliferated in the 19th century, Walter Bagehot located the origins of deposit banking in a surprising place. The scion of a commercial banking family, editor-in-chief of *The Economist*, and ultimately an acclaimed commentator on central banking, Bagehot discarded the possibility that medieval banks were the progenitors of modern commercial banking. Rather than experts in exchange lending among merchants, British banks had pioneered a different source of profits, “the circulation [of notes],” as opposed to the deployment of deposited savings. “I am only narrating unquestionable history,” he wrote confidently:

And part of this certain history is that the best way to diffuse banking in a community is to allow the banker to issue bank-notes of small amount that can supersede the metal currency. This amounts to a subsidy to each banker to enable him to keep open a bank till depositors choose to come to it.¹²⁸

Reconstructing events later and in granular detail, the historian of the regional banks that spread across Britain in the late 18th and early 19th century agreed. The conclusion emerges from the description implicitly rather than explicitly -- but it emerges manifestly. The main business of those “country banks,” wrote Leslie Pressnell, was “to supply the means of payment, transfer, and remittance.” That is, it was the supply and transfer of currency – not the advance of accumulated capital – that characterized modern regional banking in the British mold.¹²⁹

Country banks responded to money shortages that haunted the countryside. Throughout the 18th century, neither the British mint nor the Bank of England addressed the crying need for a retail medium. Silver coin fell out of circulation when the government mispriced silver bullion in 1717, while gold coin was too valuable to lubricate daily exchange. The Bank of England expanded its issues slowly; notes traveled at denominations far too high for the vast majority of the population and tended to pool in London.¹³⁰ Faced with such serious “gaps in the currency,”

¹²⁸ BAGEHOT, *supra* note 37, at 85, 84. For his rejection of medieval predecessors, *see id.* at 75-83.

¹²⁹ L. S. PRESSNELL, *COUNTRY BANKING IN THE INDUSTRIAL REVOLUTION* 136 (Oxford University Press 1956). Pressnell’s approach accords with recent accounts that find little investment of accumulated capital in the Industrial Revolution. *See, e.g.,* Francois Crouzet, *Editor's Introduction, in CAPITAL FORMATION IN THE INDUSTRIAL REVOLUTION* (1972).

¹³⁰ Patrick K. O’Brien & Nuno Palma, *Danger to the Old Lady of Threadneedle Street? The Bank Restriction Act and the Regime Shift to Paper Money, 1797-1821*, *EUR. REV. ECON. HIST.*, 6 (2019).

British country bankers were entrepreneurs, acting to “meet the routine needs of business”—often their own business. Many were industrialists -- the owners of iron and steel mills, textile factories, drapers and brewers who needed to pay workers and buy supplies.¹³¹ Wholesalers furnished another cohort of bankers as they sought to buy and sell local products and send money to London. Tax collectors and remitters, often merchants or manufacturers who conducted public functions alongside their private enterprise, generated another stream of new bankers; they had call regularly to collect, dispense, and translate regional media into the forms of money used in the capital.¹³²

The first step in producing a stand-in for sovereign money – a money substitute – was to create a medium that could circulate locally. A business embedded in the local community could do that easily by issuing private promises-to-pay that would return to the business in course of local exchange. Imagine, for example, an industrialist who wanted to pay workers, while workers wanted cash to pay rent and buy food. The industrialist could pay workers with private notes; those workers could offer the notes to landlords and shopkeepers. If those individuals owed the industrialist for fuel, produce, or services, they simply returned the notes to the industrial family for value. The circle of reciprocity could become quite large – Adam Smith describes the loop that bound Scottish bankers to merchants, who bought goods from manufacturers, who bought materials from farmers, who made rent payments to landlords, who bought provisions from merchants, who kept accounts with banks.¹³³ (Note that, in Pressnell’s history, the merchants often “are” the banks.) In fact, circles of reciprocity could work together: when notes from one banking family found their way into the hands of another banking family, they could be set off against notes that had traveled the other way.¹³⁴

Step two was to integrate local money substitutes into the national payments structure. Here, the British opened up new territory. Money shortage was endemic in the early modern world, as it had been in the medieval world. Throughout that time, businesses had improvised money substitutes, often relying on loops of reciprocal credit like those used by country banks. But British country banks came of age with institutional neighbors that set their initiative apart. Those institutions, themselves relatively young and flexible practices, included a national bank

¹³¹ PRESSNELL, *supra* note 129, at 22-23, 136; *see also* BAGEHOT, *supra* note 37, at 86 (noting that a banker could “pay away his own ‘promises’ in loans, in wages, or in payment of debts”); and *id.* at 89-90 (arguing that “no nation as yet has arrived at a great system of deposit banking” without starting with note issue, which explained the rarity of deposit banking).

¹³² PRESSNELL, *supra* note 129, at 56-74. By contrast, money scribes and brokers who intermediated money were a small club, one that focused on procuring lenders for mortgages and had virtually disappeared by the end of the 18th century. *Id.* at 37-44, 137-38.

¹³³ Adam Smith, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS, 289 (1835).

¹³⁴ Country banks thus commonly kept accounts for clearing mutually off-setting obligations at other banks. *See* PRESSNELL, *supra* note 129 at 132.

(the Bank of England), a burgeoning market for bonds and bills, a robust tax system, and a set of assets tailored to the inland transfer of funds across Britain. As participants improvised their operation, they tied the credit currency issued by regional banks into the national payments architecture. More accurately perhaps, the credit currency of the regional banks contributed to and cemented a national payments system, one unprecedented in its penetrating reach and power to produce liquidity.

Another example suggests the way the emerging system knit local bankers effectively into the sovereign monetary structure. A regional wholesaler could pay for materials from smaller suppliers in its own promises-to-pay, *i.e.*, its notes. Those suppliers could offer that medium to the tax collector. Apparently, tax collectors often accepted – and for good reason.¹³⁵ While other means of payment were scant, the tax collector could at least gather up the wholesaler’s notes. In the meantime, the wholesaler had sold local products in London, building up an account in sterling or Bank of England notes there. The tax collector would then return local notes to the wholesaler in return for a draft on London – a bill of exchange promising sovereign money there. That payment allowed the tax collector successfully to remit his quota to the British treasury.¹³⁶

The coordination between the wholesaler, suppliers, and tax collector drew on institutions unique to early modern Britain, although neither Pressnell nor contemporary commentators like Bagehot notice the extent of the novelty. Distinctively as a national bank, the Bank of England operated as a bank of issue, a practice that effectively equated its notes with sterling coin as sovereign units of account.¹³⁷ The Napoleonic Wars threw Britain onto an inconvertible monetary standard; far from disastrous for its banking system, the period entrenched the Bank of England at the core and provided the breeding conditions for “swarms” of new regional banks.¹³⁸ Tax levies rose throughout the period and its aftermath, channeling increasing flows through the hands of tax collectors. (In fact, tax collectors acted as local purchase agents during the War, a role that surely increased demand for local media.)¹³⁹

Tax collectors, wholesalers, and other incipient bankers could easily transmit funds to the center through another distinctive British practice. By contrast with the Continent, the British had recast the medieval bill of exchange during the 17th century into an instrument that operated at

¹³⁵ See *id.* at 45, 51, 61-62.

¹³⁶ For similar dynamics, see *id.* at 77.

¹³⁷ See DESAN, *supra* note 55, at 320-22. Pressnell and other commentators assume that the Bank of England’s monopoly on note issue in London and its environs handicapped British development. Ironically, the Bank’s monopoly may in fact have catalyzed the growth of regional banks, engendering British break-through into commercial banking.

¹³⁸ See PRESSNELL, *supra* note 129 at 7-8.

¹³⁹ JOHN BREWER, *THE SINEWS OF POWER: WAR MONEY AND THE ENGLISH STATE, 1688-1783* 89-91 (Knopf 1988); See PRESSNELL, *supra* note 129 at 63-71.

the domestic level, as opposed to one used for cross-border transmission. The British then perfected the art of discounting their “inland” bills as instruments of financial advance, a practice limited to that country until the end of the 18th century.¹⁴⁰ Bills of exchange were an awkward medium for many retail uses – paying workers for example – but they translated regional value beautifully into sovereign units of account held in the capital.¹⁴¹

By the time regional banking spread across the countryside, a final piece of the puzzle was in place. London hosted a money market where brokers and banks made discounting bills of exchange easy. As Larry Neal documents, the British government itself created the market because of the way it managed (and mismanaged) payment of its public debt through the South Sea debacle. In turn, the ballast of government bonds stabilized that market. Britain’s was the first truly robust and nation-wide securities market.¹⁴²

Contingency and creativity, shortfall and response, necessity and improvisation – all underscore the rather astonishing start to modern commercial banking in 18th century Britain. Country banks would assume new identities in the following century as joint stock banks and give way to them as newly empowered competitors. Expanding in capacity, British banks embarked on their career as institutions that held savings, served as lenders, brokered funds, and provided financing as they created credit accepted as money. But for all that success, their story is not one rooted in their prowess in advancing capital or even allocating credit; it is rooted in their expedient rise as agents making currency and exploiting the opportunity that came with that role.

The American story, idiosyncratic in many details, echoes British developments in the essential aspect of money creation. Tutoring themselves on institutions across the Atlantic, Americans turned to commercial banking when a federally chartered national bank, the Bank of the United States, left the states without anything close to an adequate money supply. That scarcity was legally structured: the new Constitution prohibited states from making the kind of money they had during the colonial era, including bills of credit and land bank notes.¹⁴³ Coin alone would be woefully inadequate to support economic expansion. “Whatever may be the advantage of a metallic currency in an early stage of society,” wrote a legislative commission in Maine in 1836,

¹⁴⁰ De Roover, *supra* note 127, at 229-30. Francesca Trivellato agrees on the uniquely English character of inland bills of exchange. See Francesca Trivellato, *The Vagrancy of Economic Invisibility* (University of Cambridge/ Harvard University 2021).

¹⁴¹ See Trivellato, *supra* note 140 (dismissing widespread use of bills of exchange as a money substitute). One region in Britain, Lancaster, relied on bills of exchange rather than developing regional banking. PRESSNELL, *supra* note 129 at 19-20.

¹⁴² Neal, *supra* note 82; see also Ann M. Carlos, et al., *Financing and Refinancing the War of the Spanish Succession, and then Refinancing the South Sea Company*, in QUESTIONING CREDIBLE COMMITMENT: PERSPECTIVES ON THE RISE OF FINANCIAL CAPITALISM (D’Maris Coffman, et al. eds., 2013).

¹⁴³ See U.S. CONST., Art. 1, Sec. 10; *Craig v. Missouri*, 29 U.S. 410 (1830).

“we have long since passed the period” where it would support the “rapid and complicated exchanges” characteristic of an “advanced” society. The commission estimated that the proportion of paper to specie in circulation was 11 to 1.¹⁴⁴ By other indications, coin was a small fraction of the money supply.¹⁴⁵

By the 1830s, banknotes produced by private banks made up “the currency of the country” because Americans had copied the British example.¹⁴⁶ Merchants, manufacturers, textile producers, mechanics, and traders – entrepreneurs in need of money to run their businesses -- applied to their states for banking charters that carried the crucial privilege of issuing notes.¹⁴⁷ According to Richard Sylla, the practice of financing projects with “locally produced banknotes or created ‘deposits,’” had roots in New England and spread West and South.¹⁴⁸ He ordains the ante-Bellum era as one characterized by “the credit creation effect,” a strategy that drew on the “the uniqueness of money creative activities” of banks.¹⁴⁹

A Utica banker in 1813 argued that specie convertibility was, effectively, gratuitous. He theorized what has become known as endogenous credit creation today:

¹⁴⁴ Maine Legislature, Report of the Special Committee on the Currency. (1836).

¹⁴⁵ By one set of calculations, specie in banks amounted to approximately \$44 million (a high point in the 1830s) compared to bank liabilities (capital, bank notes, and liabilities) of at least \$389 million, or some 11.3%. *See* TIMBERLAKE, *supra* note 96, at 66 (Table 6.1) (1835 banknotes and liabilities, \$204 million); Richard Sylla, *U.S. Securities Markets and the Banking System, 1790-1840*, May/June REVIEW OF THE FEDERAL RESERVE BANK OF ST. LOUIS, 86 (Table 1) (1998) (\$308.4 million authorized capital liabilities for 1835, discounted to 60% to approximate paid-in capital, or \$185 million). Specie to money stock usually includes banknotes and deposit liabilities only, TIMBERLAKE, *supra* note 96, at 429 n.30, I include capital here because bank capital was clearly “fictitious” in a bank’s early years, i.e., paid in borrowing from one’s own bank. *See* below TAN 156-158, for discussion. Subsequently, a significant proportion of capital would have taken the form of paper notes.

¹⁴⁶ LAMOREAUX, *supra* note 102, at 46 (quoting nineteenth century speaker).

¹⁴⁷ For the variety of trades, *see, e.g., id.* at 23, 27, 28, 30, 49, 62, 77. Schumpeter flags the strategy of “industrial concerns” in the Midwest “applying for power to form banks in order to finance themselves by note issues,” and granted charters for that reason. *See* JOSEPH ALOIS SCHUMPETER, *BUSINESS CYCLES : A THEORETICAL, HISTORICAL, AND STATISTICAL ANALYSIS OF THE CAPITALIST PROCESS* 235 (2007). For examples, *see, e.g.,* *People v. President and Directors of the Manhattan Co.*, 9 Wend. 351 (N.Y. Sup. Ct.) (Manhattan Co.); *Payne v Baldwin*, 11 Miss. 661 (Miss.) (Mississippi Railroad Co.); *see also* SCHUMPETER, *supra* note 147, at 260 (noting large role of such credit in financing of railroads).

¹⁴⁸ *See* Richard Sylla, *American Banking and Growth in the Nineteenth Century: A Partial View of the Terrain*, 9 EXPLS. ECON. HIST., 215 (1971); Sylla, *supra* note 145, at 94, 97; *see also id.*, at 995-96 (noting rise of unincorporated banks particularly in mid-Atlantic region); LAMOREAUX, *supra* note 102, at 7 (reviewing scholarship). For a more skeptical take, *see* BODENHORN, *supra* note 124, at 91-92.

¹⁴⁹ *See* Sylla, *supra* note 148, at 209-10, 211.

the bankers possess [longer-term] notes of individuals sufficient to represent all the banknotes in circulation. . . . [E]ach of these individuals so indebted, will be as anxious to obtain the banknotes as they ever were . . . since they will answer the same purpose which [specie] would, in redeeming their individual obligations held by the bankers, and for which they would have to give specie if they could not obtain bank-notes. There will then continue to be a demand for the notes of every bank that shall possess [longer-term] individual notes sufficient to represent their own in circulation.¹⁵⁰

The scarcity of liquid capital promoted the practice.¹⁵¹ As a contemporary noted, banks did *not* begin operating because “in the villages and sections of the country where they have sprung up, there existed accumulations of capital the holders of which were at a loss to know how, profitably, to invest.” No, the commentator continued, “[n]o such state of things has existed.” Rather, “nineteen out of twenty banks” were chartered for “the creation of money facilities and capital”:

The object has not been to *invest* money, but to *create* it. Hence it has happened that bank charters have been asked for and obtained, where a vast majority of the corporations, instead of being *lenders* of money, were actually *hungry borrowers*.¹⁵²

Writing about ante-bellum banks in New England, Naomi Lamoreaux identifies them as “insider lenders.” The characterization captures the fact that they operated for the benefit of their own directors, while dropping out the innovation that they did so by issuing paper notes that would be treated as money. Struck by the violation of later norms against self-dealing, Lamoreaux distinguishes early banks from “commercial banks in the modern sense of the term.” She casts them instead as “investment clubs” that benefited local entrepreneurs and, insofar as others in the community became shareholders, allowed those people to participate in the process of economic growth.¹⁵³ But if they were investment clubs, they were investment clubs that operated by issuing money for the use of their owners – the very “insider lending” that Lamoreaux remarked. Put another way, businessmen created currency out of their own credit in the form of their own

¹⁵⁰ JOHNSON, *supra* note 96, at 23; see also *id.* at 24 (Bank of England notes, though currently inconvertible “do therefore possess a consideration of value [not owing to a law which enforces their acceptance], but to the uses possessed for them by individuals in liquidating their notes held by the bank, and in meeting the requirements of government, which can be answered with this paper equal to what they can be with actual specie.”)

¹⁵¹ See Sylla, *supra* note 148, at 214.

¹⁵² HENRY WILLIAMS, *REMARKS ON BANKS AND BANKING AND THE SKELETON OF A PROJECT FOR A NATIONAL BANK / BY A CITIZEN OF BOSTON* 16 (Torrey & Blair, printers 1840) (emphasis in the original); see also Nathan Appleton, *An Examination of the Banking System of Massachusetts, in Reference to the Renewal of the Bank Charters*, 7, (1831) (identifying issue of notes as “leading object and motive” for early American banks).

¹⁵³ LAMOREAUX, *supra* note 102, at 82. For periodization, see *id.* at 5, 52. For the prevalence of insider lending, see *id.* at 4, 12, 14-16.

promises-to-pay – *i.e.*, bank notes. As they spent those promises, they effectively obtained an advance from all who agreed to hold those notes (let alone from shareholders).¹⁵⁴

As in Britain, the process started on the basis of little-to-no capital. Entrepreneurs simply borrowed, presumably in bank notes, from an existing bank and used that money to purchase shares. They then borrowed from their new bank, against the security of their new stock and now surely in bank notes, and repaid the lending bank.¹⁵⁵ Lamoreaux notes that bankers would sell more shares over the next years, eventually replacing the “fictitious” capital with which they began with the investments of new shareholders.¹⁵⁶ To be sure, Americans invested freely in bank stock.¹⁵⁷ And yet, that incoming investment would also take place largely in the bank currency, the medium now established in the community. It was, indeed, “an alchemist’s dream.”¹⁵⁸

As in Britain, the system worked because it locked into a variety of institutional supports. States had no choice but to use banks to create a money supply – the Constitution prohibited them from issuing paper money directly.¹⁵⁹ In response, they acted to secure the viability of bank currency: They chartered banks in response to the need for a circulating medium.¹⁶⁰ They held significant deposits in banks and invested substantially as shareholders.¹⁶¹ They passed laws requiring banks to receive their own notes in payment of debts.¹⁶² Perhaps most importantly, they accepted banknotes for tax payments from individuals.¹⁶³ Given their investment in the success of the money supply and the reciprocal interests that bound them to banks, states had strong

¹⁵⁴ See, e.g., JOHNSON, *supra* note 96.

¹⁵⁵ Sylla, *supra* note 145, at 95; LAMOREAUX, *supra* note 102, at 19. Both contemporaries and historians agree that bankers generally evaded minimum specie requirements imposed by states. See, e.g., WILLIAMS, *supra* note 152, at 16-17; Report of the Special Committee on the Currency, *supra* note 144, at 7; LAMOREAUX, *supra* note 102, at 55-56, 66.

¹⁵⁶ LAMOREAUX, *supra* note 102, at 3 n.4, 19-20.

¹⁵⁷ Sylla, *supra* note 145, at 90-95.

¹⁵⁸ LAMOREAUX, *supra* note 102, at 19.

¹⁵⁹ See U.S. CONST., Art. 1, Sec. 10; *Craig v. Missouri*, 29 U.S. 410 (1830).

¹⁶⁰ Sylla, *supra* note 145, at 95-96 (also noting profusion of unincorporated banks in mid-Atlantic region); LAMOREAUX, *supra* note 102, at 11, 57.

¹⁶¹ Sylla, *supra* note 145, at 95-96; LAMOREAUX, *supra* note 102, at 29.

¹⁶² See, e.g., Maryland, 637 Session Laws 107, ch. 177, § 13 (1818).

¹⁶³ See, e.g., An Act for Incorporating the Bank of Virginia, Passed 30th January, 1804. Vol. no. 49994. Richmond: Printed by John Warrock (Virginia); An Act to Charter the Union Bank of the State of Tennessee: Passed 18th October, 1832. Nashville: Printed by Hunt, Tardiff and Co. (Tennessee); see also the authorizing legislation at issue in *Briscoe v. Bank of Kentucky*, 36 U.S. 257, 315 (1837) (Kentucky); *Woodruff v. Trapnall*, 51 U.S. 190 (1850) (Arkansas); *Darrington v. Bank of Alabama*, 54 U.S. 12 (1851) (Alabama).

incentives to forebear redeeming banknotes.¹⁶⁴ That forbearance would have stabilized banknotes as the de facto “currency of the country.” Meanwhile, the federal government furnished the anchoring unit of account, analogous to the pound sterling. It then secured and emphatically supported a circulating public debt, modeled on the British example, that established capital markets on which bank stock traded.¹⁶⁵

Communities at times took yet more striking steps to support the circulation of notes. Massachusetts, for example, barred payment of interest on accepted deposits, reasoning that lending against such deposits -- “equivalent to lending on borrowed money” -- was unsafe.¹⁶⁶ The action comported with widespread attention to the “circulation” of notes – in other words, the effort to keep notes from being cashed.¹⁶⁷ Communities propagated that norm: “it was considered by many persons injurious and improper to call on a bank for specie in payment of its bills,” reflected a commentator in 1831 about earlier practice.¹⁶⁸

By chartering banks and accepting their promises, early Americans acknowledged the benefits brought by those institutions. As in Britain, communities acquiesced *not* because bankers were demonstrating expertise in choosing how to lend the “accumulated capital” that was so lacking. Communities acquiesced *instead* because bankers had figured out to use their place and power to create money that, when issued in networks of reciprocal obligation, held value. The fact that bankers made money for their own use was not at odds with the fact that they also furnished their communities with a medium that others needed.

The fact that bankers furnished their communities with a medium that others needed helps explain why those communities tolerated the fact that bankers made money for their own use. Indeed, it explains the reforms that followed. “Free banking” laws in the United States aimed to eliminate partisan favoritism by standardizing the way states dispensed banking privileges: banks would obtain charters from administrators through general incorporation rather than from legislators through special grants.¹⁶⁹ The same reforms aimed to stabilize banks by imposing

¹⁶⁴ Even their turn towards taxing the banks, *see* BODENHORN, *supra* note 124, at 88; Sylla, *supra* note 145, at 95-96, would reinforce both their inclination to take notes in payment and their disinclination to withdraw specie from those banks.

¹⁶⁵ *See* Sylla, *supra* note 145.

¹⁶⁶ LAMOREAUX, *supra* note 102, at 68.

¹⁶⁷ *See* Report of the Special Committee on the Currency, *supra* note 144, at 6-7; Appleton, *supra* note 152, at 3-4.

¹⁶⁸ Appleton, *supra* note 152, at 3-4; *see also* FRANCIS AMASA WALKER, MONEY 479-83 (Augustus M. Kelley 1878) (condemning earlier practices by banks of mutual agreement to set off notes, issuing of small denomination notes, issuing notes at a distance, community sentiment against presentation of notes for redemption).

¹⁶⁹ *See* Naomi R. Lamoreaux & John Joseph Wallis, *Fixing the Machine that Would Not Go of Itself: State Constitutional Change and the Creation of an Open-Access Social Order in the Mid-*

collateral rules, often by way of requiring banks to back their notes with state bonds. The effect was to entrench banks as money creators and -- as an added bonus -- as captive lenders to state governments. It was not to focus on, let alone vet, banks' efficiency as allocators of credit and capital.

The federal government would follow the path blazed by the states back into the banking space during the Civil War. The moment had a kind of existential irony: facing a state-centered insurrection, the national government found it had a "circulating medium" made by state-chartered banks, ragged and wildly heterogenous in value.¹⁷⁰ Congress's priority, urgent under the circumstances, was to create a uniform national currency.¹⁷¹ Procuring lenders who would buy federal bonds was a close second. Both goals, as opposed to any discriminating judgment about credit allocation, pointed Congress towards banking.

The fastest route to a national currency, aside from issuing money directly into circulation, was to entice existing banks to swap their state charters for federal ones, flipping them into national service. By the same stroke, Congress adopted the states' strategy enlisting those investors as lenders that would finance its own borrowing by bonds.¹⁷² It based the National Banking Acts on the template of New York's free banking law, assimilating the mechanism of administrative incorporation and the requirement of bonded collateral.¹⁷³ When the carrot of national support failed, Congress used a stick, imposing a prohibitively expensive tax on state bank notes.¹⁷⁴

The federal government would never retreat from its assertion of monetary authority. The Reconstruction Congress debated instead what kind of federal money it should perpetuate: the

Nineteenth-Century United States (2018); Sylla, *supra* note 108, at 658-59. Reformers also meant to stabilize banks with a variety of regulatory measures, often including a requirement that banks furnish collateral for note issue in the form of public bonds or other assets. See BODENHORN, *supra* note 124.

¹⁷⁰ See *Veazie Bank*, 75 U.S. at 536. As the Supreme Court continued, that medium was made up "almost entirely of bank notes issued by numerous independent corporations variously organized under State legislation, of various degrees of credit, and very unequal resources, administered often with great, and not unfrequently, with little skill, prudence, and integrity." *Ibid.* A series of federal officials, including future-justice Salmon Chase, and Senator John Sherman actually questioned the constitutionality of the state-centered system. See BRAY HAMMOND, *BANKS AND POLITICS IN AMERICA FROM THE REVOLUTION TO THE CIVIL WAR* 724-26 (Princeton University Press 1957).

¹⁷¹ Lev Menand & Morgan Ricks, *Federal Corporate Law and the Business of Banking* (Working Paper N° 575/2021 ed. 2021); HAMMOND, *supra* note 170, at 725-26.

¹⁷² For the advantages in speed of converting existing state-chartered banks into federally chartered banks, see HAMMOND, *supra* note 170, at 725-26. For the end of gaining a captive set of lenders to purchase government bonds, see Sylla, *supra* note 108, at 659.

¹⁷³ See Menand & Ricks, *supra* note 171; HAMMOND, *supra* note 170, at 727.

¹⁷⁴ *Veazie Bank*, 75 U.S. 533.

greenbacks that the Treasury had spent directly into the hands of soldiers and suppliers, or the credit-money issued by national banks, borrowed by the federal government and spent in turn to its creditors. The side that won – those advocating the banking alternative – were clear about the dispositive reason: private banks, constrained by the need to redeem their promises for gold coin, would be more disciplined in money creation than legislators, who might overissue money if they controlled it.¹⁷⁵ Congress endorsed banking to control the quantity of money, not the quality of its dissemination into circulation.¹⁷⁶

In fact, national banking legislation was tone-deaf to issues of fair or effective credit allocation. Structured by representatives of northern finance, it restricted lending on land, included high capital requirements, and established a pyramided reserve system that channeled money towards New York City. The banking network that resulted drained credit from the countryside and left whole territories, particularly the South and Midwest, bereft of a medium.¹⁷⁷ In 1869, for example, the eastern seaboard averaged \$11.83 national bank notes/capita; the South had \$1.31 and West \$3.45.¹⁷⁸ When seasonal demand drove up demands for cash at harvest time in those very areas, the rule that public bonds collateralize note issue hamstrung national banks from responding.¹⁷⁹

High capital restrictions remained in effect for almost 40 years; limitations on lending on land for 50 years, the bond collateral rule and the pyramided reserve system for almost 60 years.¹⁸⁰ Given that pattern, it would be difficult to argue that Congress prized banks as equitable allocators of credit or, indeed, prioritized that goal at all. To the contrary, Congress's efforts to stamp out state-chartered banks further constricted the fair dissemination of credit. As Richard Sylla details, that initiative succeeded for some decades, depressing the credit that state banks could deliver.¹⁸¹

¹⁷⁵ Menand & Ricks, *supra* note 171. In fact, the Union government responsibly maintained the greenbacks, theorizing that issues should be matched by withdrawals, and ensuring the latter by “tax[ing] almost everything but the air northerners breathed.” M. M. EDLING, *HERCULES IN THE CRADLE: WAR, MONEY, AND THE AMERICAN STATES, 1783-1867* 206 (University of Chicago Press 2014). See generally Ariel Ron & Sofia Valeonti, *The Money War: An Interpretation of Democracy, Depreciation, and Taxes in the U.S. Civil War* (SSRN Paper No. 3906049 ed. 2021).

¹⁷⁶ See HAMMOND, *supra* note 170, at 725-26.

¹⁷⁷ See generally Sylla, *supra* note 108.

¹⁷⁸ BENSEL, *supra* note 62, at 271.

¹⁷⁹ JAMES LIVINGSTON, *ORIGINS OF THE FEDERAL RESERVE SYSTEM* 73-74, 80-81 (Cornell University Press 1986).

¹⁸⁰ Sylla, *supra* note 108, at 659, 661. The Federal Reserve Act centralized reserves for member banks in the regional Federal Reserve Banks.

¹⁸¹ Sylla, *supra* note 108, at 662-664.

Americans were not quiet in the face of the devastation that followed. Agrarian populism across the South and West, a movement two million strong, homed in on money creation by banks, blasting its biased allocation. When bank after bank denied credit to a cooperative initiative backed by landed collateral in Texas, the Southern Alliance pinpointed the problem.¹⁸² The system *by the very absence of credit* operated to “exact from labor all that it produces except a bare subsistence.” “[T]he power of money to oppress” operated through banks’ monopoly on money’s issue; farmers denied credit at harvest season fell victim to debt peonage.¹⁸³ Bankers themselves agreed that the system needed reform, arguing that more elasticity, if not equity, would increase the resiliency in the face of crises.¹⁸⁴

So how is it that a practice distinguished by the production of a retail credit medium in the sovereign dollar came to be justified by an altogether independent rationale, expertise in credit allocation? The story remains to be uncovered, but several classics in the banking literature suggest the plot.

By the second half of the nineteenth century, business elites fully recognized “the power of credit.”¹⁸⁵ All “larger transactions of commerce” settled in “banking credits,” not money, wrote the influential banking expert Charles Conant.¹⁸⁶ A “most remarkable phenomena of modern financiering,” banking credit allowed command over a far greater volume of commodities than silver or gold coin.¹⁸⁷ As such, it represented “purchasing power,” but purchasing power “which is not being converted to the immediate purpose of exchange.”¹⁸⁸

A critical step in the logic followed, one that replaced money creation with intermediation. Insofar as credit created a store of purchasing power, it could be conceptualized as capital. More striking still, it could be conceptualized as capital that had been accumulated. “Banking credits,” Conant concluded “represent saved capital over and above the actual materials of current

¹⁸² Michael Kazin, *Populism and Agrarian Discontent* at <https://ap.gilderlehrman.org/essays/populism-and-agrarian-discontent>.

¹⁸³ St. Louis Convention Southern Alliance, *Report of the Committee on the Monetary System on the Sub-Treasury Plan*, in *A POPULIST READER* 61 (George Brown Tindall ed. 1966); GOODWYN, *supra* note 105.

¹⁸⁴ See LIVINGSTON, *supra* note 179, at 71-82.

¹⁸⁵ Charles Conant, *The Development of Modern Credit*, 7 J. POL. ECON. 161 (1899).

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*, at 161, 63.

¹⁸⁸ *Id.*, at 162-63; see also LIVINGSTON, *supra* note 179, at 92-94 (contrasting approaches to bank credit as an instrument for acquiring surplus with populist approach to money as medium of exchange). The credit theory that influenced Conant sought to define credit in the abstract, not credit made by banks. Its focus become the way a grant of credit postponed compensation rather than the way bank-formulated credit allowed maturity transformation. See Conant, *supra* note 185, at 162.

production.”¹⁸⁹ In that reading, the money creative role of banks disappeared – they became repositories of savings, ripe for investment:

[The system of banking credits] permits the man who has made savings, but is not engaged in an occupation in which he can employ them, to transfer them to those who can employ them . . . Capital is thus transferred from the hands of many small capitalists into the hands of a producer and is made profitable to the whole community.¹⁹⁰

The conversion of banking credit to accumulated capital turned the trajectory that earlier Americans had identified upside down. Rather than money creators that promoted growth by producing liquidity, banks became accessories to accumulated capital, modern intermediaries that transferred capital:

The development of credit has been an almost necessary incident of the growth of capital. The great modern accumulations of capital could not be moved without credit; credit would have been but a narrow field of operation without these great capitals. . . . [C]redit in its modern sense . . . would be of little avail except in countries where there was an accumulation of surplus capital. Great accumulations of capital not required either for immediate consumption or for maintaining existing processes of production, and therefore awaiting investment in new enterprises, are an essentially modern phenomenon.¹⁹¹

Walter Bagehot, writing at mid-century in Britain, slid more subtly to the same conclusion. On the one hand, he stressed the reality that note issue had created modern banking, calling out the “conjectural history” of those who believed that it sprang up people had money to “lodge.”¹⁹² On the other hand, Bagehot treated money creation as a transient role, one that became inconsequential when banks switched their liabilities from note to deposit form. Launched as note issuers, banks prevailed as receptacles for capital, able to “collect the capital . . . [the] fund from which you can borrow, and out of which you can make immense works.”¹⁹³ “London is full of money,” Bagehot crowed, and all continental cities are empty as compared with it.¹⁹⁴ The language of capital accumulation would dominate over the next century.¹⁹⁵

¹⁸⁹ *Id.*, at 163.

¹⁹⁰ *Id.*, at 172.

¹⁹¹ *Id.*, at 164.

¹⁹² See BAGEHOT, *supra* note 37, at 75, 78-83.

¹⁹³ See *id.*, at 7, 83-92.

¹⁹⁴ See *id.*, at 92.

¹⁹⁵ See, for example, the emphasis on credit allocation captured by Lamoreaux in her description of the period’s bankers. LAMOREAUX, *supra* note 102, at 117. Note, in fact, how the language of credit allocation dominates her approach to banking, a symptom of its dominance in current thought. *E.g.*, *id.* at 75, 79; see also, *e.g.*, Douglass C. North & Barry R. Weingast,

In fact, modern practice did expand beyond money creation to intermediation in the literal sense. Banked money creation *had* expanded liquid capital; savings rates rose in late 19th century America.¹⁹⁶ In the U.S., the national banking system “concentrated” funds: the very pyramiding pattern that deprived the South and West of currency collected them in New York City and Boston.¹⁹⁷ At the same time, the Gold Standard ascended as a shared imperative. Designed to discipline bank-issued money at the domestic level, it operated by using convertibility to police credit expansion.¹⁹⁸ Its rhetoric, however, bluntly identified money with specie and specie with an amount of metal.¹⁹⁹ In the U.S., advocates of “sound money” patterned proper bank practice on the “real bills” model, identifying appropriate lending with short advances made on commercial paper. One writer after another condemned early American practices as provincial, unsound and inflationary.²⁰⁰

Under those conditions, the shift to conceptualizing banks as intermediaries was an easy one. The long history of bank lending, centuries old before banks of retail issue appeared, greased the tracks. Banks of retail issue themselves clearly acquired and loaned existing funds as well as creating credit money. Americans had recognized that dual activity for decades, distinguishing banks that issued notes, including the Bank of England, British country banks, and American banks, from banks that did not, including “the famous Bank of Amsterdam.”²⁰¹

Here, the conjectural history that Bagehot condemned reemerged with a vengeance. Writer after writer told the genealogy of credit as “an organic development so necessary and natural that it

Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England, XLIX J. ECON. HIST. 803, 824-828 (1989); Leonidas Zelmanovitz & Bruno Meyerhof Salama, *Central Bank Digital Currency: the Hidden Agenda* at <https://justmoney.org/1-zelmanovitz-and-b-meyerhof-salama-central-bank-digital-currency-the-hidden-agenda/>. The victory is so complete that Morgan Ricks attaches an appendix collecting references to show that perceptive commentators through the period continued to recognize that money creation and its mechanics mattered. RICKS, *supra* note 48, at 74-77.

¹⁹⁶ Sylla, *supra* note 148, at 221-223.

¹⁹⁷ See BENSEL, *supra* note 62, at 271.

¹⁹⁸ See SAMUEL KNAFO, *THE MAKING OF MODERN FINANCE: LIBERAL GOVERNANCE AND THE GOLD STANDARD* (Routledge 2013); Select Committee on the High Price of Gold Bullion, *supra* note 96, at 47-48.

¹⁹⁹ BRUCE G. CARRUTHERS & SARAH L. BABB, *ECONOMY/SOCIETY: MARKETS, MEANINGS, AND SOCIAL STRUCTURE* (Pine Forge Press 2000).

²⁰⁰ See, e.g., WALKER, *supra* note 168; WILLIAM GRAHAM SUMNER, *A HISTORY OF AMERICAN CURRENCY* (1874); FRITZ REDLICH, *THE MOLDING OF AMERICAN BANKING: MEN AND IDEAS* 5-23 (Hafner Publishing Co., Inc 1951). For a brilliant reconstruction of the tradition of “sound money” writers, see Sylla, *supra* note 148.

²⁰¹ See Appleton, *supra* note 152, at 7-8.

occurred with remarkable uniformity and in the most spontaneous manner.”²⁰² In an era smitten with Darwinian theory, the process became an evolutionary narrative towards best practices.

Here lay the second step in the critical conversion of banks. Recall that credit had been reconceived as accumulated capital; it could not be reallocated to best ends by banks as expert intermediaries in allocating credit:

We have already seen that banks of deposit, transformed naturally by the course of events into banks of discount and advances They centralized available capital and substituted themselves at least in part for private forms of deposit, of loans, and of exchange. They distributed capital, which had been tempted and accumulated into their reservoirs, in all directions where it would be most active and most fertile.²⁰³

Bagehot’s pitch became iconic: bankers were specialists in lending well. Each was an expert incomparable for their local knowledge, “who lives in the district, who has always lived there, whose whole mind is a history of the district and its changes.”²⁰⁴

The claim that bankers were experts in allocating credit drew on the power of classical liberalism. It advocated dispersing authority into private hands, diminishing the dangers of the state.²⁰⁵ It lauded individual orientation towards self-interest, suggesting the great utility of matching that incentive with human agency.²⁰⁶ And it fit with philosophical and scientific efforts to figure out the patterns in human activity. By looking to disaggregated phenomena, one might find self-equilibrating dynamics analogous to those in the biological world.²⁰⁷ By the second half of the nineteenth century, one profession after another – law, medicine, business –

²⁰² Guillaume de Greef, quoted in Conant, *supra* note 185, at 177; Conant, *supra* note 185, at 175-81; RICHARD DAVID RICHARDS, *THE EARLY HISTORY OF BANKING IN ENGLAND* (P.S. King & Son 1929)-22; *see also* De Roover, *supra* note 127, at 239 and n. 132 (noting pervasive misinterpretation of genealogy). For a modern example, *see* James Tobin, *Money* 4 (Steven N. Durlauf & Lawrence E. Blume eds., Palgrave Macmillan 2d ed. 2008).

²⁰³ Guillaume de Greef, quoted in Conant, *supra* note 185, at 175. Note that the analysis could be read to encompass retail issue, domesticating it as the practice of fractional reserve lending.

²⁰⁴ *See* BAGEHOT, *supra* note 37, at 89. For contemporary examples, *see, e.g.*, Bhidé, *supra* note 119; CALOMIRIS & HABER, *supra* note 105.

²⁰⁵ *See, e.g.*, David Hume, *Discourse V: Of the Balance of Trade*, in *POLITICAL DISCOURSES* (1752); North & Weingast, *supra* note 195.

²⁰⁶ *See, e.g.*, ALBERT O. HIRSCHMAN, *THE PASSIONS AND THE INTERESTS: POLITICAL ARGUMENTS FOR CAPITALISM BEFORE ITS TRIUMPH* (Princeton University Press Twentieth anniversary ed 1997).

²⁰⁷ JONATHAN SHEEHAN & DROR WAHRMAN, *INVISIBLE HANDS: SELF-ORGANIZATION AND THE EIGHTEENTH CENTURY* (Chicago University Press 2015).

had endorsed similar reasoning, sanctifying individuated initiative.²⁰⁸ Bankers likewise claimed a mantle as “self-conscious professionals,” elevating career managers and officials.²⁰⁹

During the same period, economics came of age. According to Léon Walras, the goal was to create a “pure natural science,” thus stripping out attention to historical and institutional distractions.²¹⁰ It was the act of exchange itself that held the key to the determination of prices. That logic installed microeconomics at the heart of the discipline and the decentralized determinations of individuals as the discipline’s focus.²¹¹ Walras’s most famous bequest to the field conceptualized the market as an auction. The auction cast individuals as bidders acting autonomously. They used an abstract term, an imagined commodity, as a measure.²¹²

The model, which became central to general equilibrium theory, virtually eradicated attention to money as an institution, let alone an institution with a complex and disjunctive history.²¹³ More striking still, the model’s assumption of competitive markets made axiomatic the proposition that money, now a term of measure, was neutral. Market participants did not (could not) attribute value to it as a transactional medium.²¹⁴ The proposition vitiated attention to the liquidity premium – the very advantage that set banks apart and that, as we saw in Part III, gives their lending such significant distributive impact.²¹⁵

²⁰⁸ DOROTHY ROSS, *THE ORIGINS OF AMERICAN SOCIAL SCIENCE* (Cambridge University Press 1992). Justice Holmes exemplified that faith when he rationalized commodities trading by lauding the aggregate effect of independent bidders. “Speculation . . . by competent men is the self-adjustment of society to the probable.” *Chicago Bd of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236 (1905).

²⁰⁹ LAMOREAUX, *supra* note 102, at 115. For Lamoreaux, that trend explains the turn away from “insider lending.” But while banks diversified lending away from the kinship networks that were her focus, they did not step back from supplying “the currency of the country” – the capacity that made them unique.

²¹⁰ DIMITRIS MILONAKIS & BEN FINE, *FROM POLITICAL ECONOMY TO ECONOMICS: METHOD, THE SOCIAL AND THE HISTORICAL IN THE EVOLUTION OF ECONOMIC THEORY* 95 (Routledge 2009).

²¹¹ *Id.*, at 92-101.

²¹² See MARK BLAUG, *ECONOMIC THEORY IN RETROSPECT* 143-47 (Cambridge University Press 5th ed 1996); ANDRÉ ORLÉAN, *THE EMPIRE OF VALUE: A NEW FOUNDATION FOR ECONOMICS* (M. B. DeBevoise trans., The MIT Press 2014) 14, 39-50.

²¹³ ORLÉAN, *supra* note 212; MILONAKIS & FINE, *supra* note 210, at 91-118.

²¹⁴ Neil Wallace, *Lawrence R. Klein Lecture 2000: Whither Monetary Economics?*, 42 INT’L ECON. REV., 848-49 (2001).

²¹⁵ *Id.*, at 847-49. Indeed, credit itself could be understood as the advance, in effect, of a material resource, accompanied by the ability, given the promise of repayment, to share in the proceeds it produced. Money, the resource at the base of market liquidity, let alone commensurability itself, could be re-theorized as temporal facilitation of barter.

By contrast, the notion that modern banking was only about accumulating capital and allocating credit comported with economic theory. Bankers acted as intermediaries: they ferried the capital made available by savers to the borrowers willing to pay for that resource.²¹⁶ Even those economists less persuaded by the Walrasian model assimilated that logic into their models. Partial equilibrium theorists emphasizing competition within specific segments of the market could include, in that mode of analysis, markets for credit.²¹⁷ If banks were simply intermediaries, competition between them would produce efficient, not discriminatory, results in allocating the resource of credit.²¹⁸ Finally, economists like Joseph Schumpeter, who recognized the money creative aspect of banking, began to model it as a process that “forced savings” into investment as new money raised prices until expanded production (and credit repayment) absorbed the expansion.²¹⁹

The confluence of ideologies that buoys banking and conceptualizes it as finance rather than money creation has had a final consequence. Empirical analyses commonly attribute economic development to the activities of banks and their effective intermediation.²²⁰ That assumption fails to control for the revolutionary effect that early banks had on the money supply. At a blunt level, early banks appear to have transformed exchange because they supplied liquidity. That liquidity broke through medieval privity. “We have entirely lost the idea that any undertaking likely to pay, and seen to be likely, can perish for want of money,” wrote Bagehot, “yet no idea was more familiar to our ancestors.”²²¹ As the Fed itself emphasized in the spring of 2020, markets depend elementally on liquidity. The outpouring that early banks produced was surely a powerful driver of economic exchange.²²² That contribution does not mean that they are also the

²¹⁶ For discussion, see Marc Lavoie & et al, *Roundtable on Banking: Intermediation or Money Creation*, <https://justmoney.org/roundtable-1-prompt/> (JustMoney.org 2020).

²¹⁷ Yahya M. Madra, Auction or Selection? Two Competing (Neoclassical) Metaphors for “The Economy” 8, Workshop, Harvard University (2016) (cited with permission of author).

²¹⁸ See, e.g., CALOMIRIS & HABER, *supra* note 105. For analysis, see Morgan Ricks, “What’s at Stake in Debates over Bank Money Creation Mechanics,” in Banking Roundtable, *supra* note 216.

²¹⁹ See Fritz Machlup, *Forced or Induced Savings: An Exploration into its Synonyms and Homonyms* (Fritz Machlup ed., W. W. Norton & Company 1967); Sylla, *supra* note 148, at 211-12. Indeed, Sylla himself may fall into this tradition, conceptualizing money creation as a stage of intermediation.

²²⁰ See, e.g., CALOMIRIS & HABER, *supra* note 105, at 7-9.

²²¹ BAGEHOT, *supra* note 37, at 7.

²²² For important efforts to isolate the impact of liquidity, see Nuno Palma, *Money and Modernization in Early Modern England*, 25 FIN. HIST. REV. 231(2018); see also Rondo Cameron, *Banking in the Early Stages of Industrialization: A Preliminary Survey*, XI SCANDINAVIAN ECON. HIST. REV. (1963) (emphasizing note issue).

agents who most effectively, let alone most justly, distribute the money supply created for the public.²²³

Modern banking thus escapes scrutiny as a distributive agency making a public medium. Banks are an expensive set of delegates in ordinary times, measured by the administrative apparatus that supports them. The cost of banking crises is enormous; public debt taken on in response rises an average of more than 86% in their aftermath.²²⁴ The expanding number of agents involved in money creation escalates the difficulty, as monetary policy tuned to the 2008 and 2020 crises demonstrates.²²⁵ And those burdens attend an industry – banking and now shadow banking – that makes equitable distribution no part of its mission. A preference for moneyed parties is built into the incentives that maximize security in lending, the preference for collateral, and realities of economies of scale in lending, let alone access to the capital markets.

The result is the strange spectrum of politics around money creation. We construct public spending in order to subordinate money creation to borrowing in existing funds: the U.S. must issue a public bond rather than spend tax anticipation currency. That mandate exists at a structural level and, in the U.S., as a legal matter. We scrutinize monetary finance that supports public expenditures, properly illuminating their collective character. At the same time, we obfuscate the existence of private money creation at the daily level: the conventional account of commercial banks omits that characteristic, distinctive to them as lenders. Finally, we classify monetary finance that supports private money creation – discounting, open-market operations, and quantitative easing by the Fed -- as administratively obvious rather than politically loaded.

As Roy Kreitner has pointed out, where we assign public authorities to make distributive determinations through money creation, we clearly debate and weigh the normative values. But where we delegate those distributive determinations to private actors, we shed competing values and concerns, content to rely on private calculations of profit as the appropriate mechanism.²²⁶ In fact, we obscure our delegation, little recognized and less debated, in the first place. The absence of justification for banks' role, given its material consequences, fails at the elemental level a democracy should demand.

²²³ In lieu of the intermediation claim, one could imagine an argument that justified banks' role as liquidity producers instead. But modern polities have no shortage of base money, given its production against public debt. Perry Mehrling's work stands out for its focus on modern banks as creators of elasticity. E.g., MEHRLING, *supra* note 78; Mehrling, *supra* note 75. The next step would be to vet modern banks against alternatives.

²²⁴ CARMEN REINHART & KENNETH ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY 231 (Princeton University Press 2009); see also TURNER, *supra* note 53, at 3 (public debt increased on average 34% between 2007 and 2014).

²²⁵ See *supra* TAN 4-47.

²²⁶ Roy Kreitner, Money and Capitalism: Comment on the Code of Capital (Safra Center 2020).

IV. Public Spending within the Modern (Financial) Economy

As the Crises in 2008 and 2020 made clear, a banked system of private spending requires direct support of apparently increasing magnitudes. But the banked system also absorbs indirect support from the structure of public spending: public spending occurs in ways that expand the reach and consolidate the operation of finance.

The economic toll since the COVID-19 crisis has reinforced the need for direct public outlays. Against the baseline of virtually unlimited support for finance and continuing concern for businesses, Congress passed a series of acts, including the CARES Act (March 2020), the Response and Relief Act (December 2020), and the American Rescue Act (March 2021), that allocate a significant amount of cash support for individuals. Because of the very way that it issues, spending in that dimension configures our exchange economy as certainly as it delivers an end product.

Comparing the modern mode of public spending with the strategy of using tax anticipation alone – what we might call a “direct-issue” strategy -- illustrates the stakes.²²⁷ The government can fund a project conventionally, as it did in its recent legislation. In that case, it operates within the financial architecture defined by banks and bonds. The government can also fund a project directly, as it has at critical moments in American history; the next section considers that option. In that case, the government borrows and spends outside the financial architecture using its capacity to fund expenses with credit written against future revenues.

In legislation like the CARES Act, we can assume the simplest case: the government wants to spend money on recipients, a straightforward grant (as opposed to low-cost loans). In order to spend when it does not have savings, the Treasury borrows dollars against newly created public debt. The Treasury takes money from private investors, providing them a bond in return. The government then uses the borrowed money, returning it to circulation. The newly created bond adds to the stock of private financial assets, providing returns to those holding them.²²⁸

So far, so good. But we need to add another layer. In times of massive public spending, government borrowing would likely drive up demand for money – and thus its price. In other words, interest rates would rise. That increasing cost for money would further harm an economy already in trouble. In order to keep interest rates low, the government acts to increase the resources available to banks, the main lenders in society. The government acts, in the modern, financialized, world through its central bank. The Fed buys Treasury bonds held by commercial banks, crediting them with addition reserves. In other words, the bonds issued by the Treasury

²²⁷ For previous use of the term in the same way, *see* Graham, *supra* note 97, at 434.

²²⁸ *E.g.*, TURNER, *supra* note 53, at 114-15.

when it borrowed initially become the medium used by the Federal Reserve to expand the money supply: the central bank literally creates new money when it buys bonds from banks and credits them with dollar reserves.²²⁹ Over the course of spring 2020, the Fed bought about \$1.6 trillion in longer-term federal debt, effectively monetizing a significant portion of federal COVID-19 spending.²³⁰

Conventional public spending implicates the financial machinery immediately. The government, simply by disbursing support to some citizens, affects the lending capacities and calculations of commercial banks. It triggers compensatory action by the central bank. It does each through the set of financial instruments that make the government's spending possible – the bonds that can be held by investors, commercial banks, and the Fed; the bank reserves that the Fed creates when it buys bonds (or other financial assets) from the banks; and the currency that people claim when they cash a check from the government.

If and as we use the conventional financial architecture, we also augment it. Commercial banks purchase and place much of the public debt and make their own loans to private borrowers. The flow of funds through their hands strengthens their capacity as purveyors of credit. As essential conduits, they benefit as well from measures made necessary by new modes of monetary policy: the Fed's purchase of assets to staunch the damage of the 2008 crisis has fed bank reserves, obsoleting traditional tools for managing the interest rate.²³¹ In response, the Fed in 2009 innovated administered rates: it began paying commercial banks interest on the reserves they held at the Fed, a first in American history. In consequence, as commercial bank reserves expand during a large spending event, the government now increases payments to reserve-holding banks.²³² Bank reserves increased in spring 2020 with the government's purchase of bonds.²³³

At the same time, the bonds and debt-based securities created and brokered by banks furnish investment vehicles for those who can afford them. Recall the Fed's initiative buying up Treasury bonds to keep the interest rates low and stable when the government borrowed a large amount to spend. The Fed can and will sell those Treasuries back into the hands of investors

²²⁹ See, e.g., Scott Fullwiler, *Modern Central Bank Operations - The General Principles*, in *ADVANCES IN ENDOGENOUS CREDIT ANALYSIS* (Louis-Philippe Rochon & Sergio Rossi eds., 2017).

²³⁰ Committee for a Responsible Federal Budget, *Who is Buying Our New COVID-19 Debt?*(2020), available at <https://www.slideshare.net/CRFBGraphics/crfb-who-owns-the-debt-webinar-slide-deck-233594050>.

²³¹ Ricks, *supra* note 103, at 782-86.

²³² *Id.* at 786-801.

²³³ U.S. Department of the Treasury. Fiscal Service, Federal Debt: Total Public Debt [GFDEBTN], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GFDEBTN>, January 18, 2022.

when it chooses. For example, when banks start lending more expansively to entrepreneurs, and entrepreneurs start borrowing for increasingly risky projects at low rates, the Fed could increase interest rates by selling Treasuries back to banks and decreasing their reserves, tightening up their ability to lend. That would be increasingly likely in a recovery, as central bank struggles to “take away the punch bowl” from investors gaining enthusiasm about the economy. (Today, the process is a bit different because the banks hold so many reserves that the Fed instead affects the interest rates by raising or lowering its administered rate.²³⁴)

As the 2008 crisis reminds us, there is a third layer to the monetary circuitry affected when the government spends. The financial industry long ago learned to use the excess cash held by large businesses and pension pools. Brokers in the capital markets funnel that cash to borrowers who want to purchase securities, including the Treasury bonds created by the government in our first round. Those assets supply the collateral used to secure their own purchase to the tune of trillions of dollars. That shadow banking activity is, at bottom, parasitic on the securities made when the federal government borrows in order to spend.²³⁵ In other words, even public spending uses banks and shadow banks as the critical conduits, the central channels for carrying money.

Last but not least, the financial architecture compiles and preserves public debt in the form of financial assets; Treasury securities comprise the national debt (31 U.S.C. §3101). Before the COVID-19 Crisis, the U.S. deficit had reached the trillion-dollar level.²³⁶ That fiscal deficit was extraordinary for an economy that was running at peak capacity; the conventional wisdom called for tax increases and tighter public spending to make room to cut taxes and increase spending in harder times – a pandemic, for example.²³⁷ Public spending in the wake of COVID-19 layers several trillion atop the inherited deficit, and Congress has projected many more expenditures.

According to some commentators, this debt overhang will threaten both public and private recovery.²³⁸ According to others, we can borrow now at such low rates that the burden will be negligible: as we recover, we will be able to service the debt easily out of an increasingly productive economy.²³⁹ The point here is somewhat different: whichever prognosis is correct, using the conventional circuitry for the simplest public outlay – one that seeks to get cash to individuals immediately -- directs money through the financial infrastructure. Along the way, that architecture absorbs taxpayer money and bureaucratic manpower, distributes interest to investors, runs business through the banking sector and the shadow banking industry, pays banks

²³⁴ Ricks, *supra* note 103, at 786-91.

²³⁵ See sources *supra* note 82.

²³⁶ U.S. Department of the Treasury, *supra* note 233.

²³⁷ Liz Mineo, *Why Odds of a Coronavirus Recession Have Risen*, HARV. GAZETTE, March 17, 2020.

²³⁸ TURNER, *supra* note 53.

²³⁹ Paul Krugman, *In Praise of Smoke and Mirrors*, N.Y. TIMES, August 5, 2021.

for the reserves they hold at the Fed, and channels investment towards the capital markets, guided by the Fed's support for certain assets.

In short, the COVID-19 Crisis raises the issue whether we should continue to spend through the existing hardwiring. On one hand, the question is one for long-term reform and re-thinking. Should we restructure the current financial architecture given the banking system's selective reach, the vast public investment required to maintain it, the escalating inequality associated with its operation, and the system's apparent incapacity to nourish many individuals and households?

On other hand, the question invites experiments that are immediate, even one-off. Why, for example, shouldn't we move beyond finance if only in conditions that call for spending to urgent ends? We could reach directly those most affected by COVID-19 and the economic devastation brought in its wake simply by spending outside the current system. Other variations on the exclusivity of banked money creation are also possible. The point is to recognize that money's design has determining impact, one that must accord with democratic principles.

V. Public Spending Outside of the Financial System: Direct-Issue Dollars

Instead of making another outlay through the hardwiring we have inherited, the United States should use the strategy that has saved the nation repeatedly. Congress can authorize dollars that are spent directly to Americans, circulated, and returned to pay off public obligations. The strategy distills the definition of a dollar to its core. Setting aside its financial intermediation, each dollar we hold in cash is simply a small government credit, good on upcoming taxes and suitable for use between individuals in the meantime. A "direct-issue" dollar would make that transparent. The approach would also avoid increasing the bonded national debt; there is no long-term instrument issued against the currency. More generally, that dollar would consolidate the distributive choices made when the public chooses without diversion into the finance industry. It would place appropriate responsibility for spending outside finance with Congress, with consequences monitored by the Fed. Finally, a direct-issue dollar invites innovation to re-imagine avenues for money creation in the modern world.

The logic is straightforward. It builds on the fact that a government can always create a medium with value by supplying credit and ensuring demand for that credit: the government pays someone for goods or services with a dollar I.O.U. and commits to take the I.O.U. back for value owed itself. That gives the I.O.U. fiscal value.²⁴⁰ The U.S. enforces the dollar note as the

²⁴⁰ Without that money, they will have to come up with another way to pay their public tab or risk forfeiting material goods of equivalent value. See 12 U.S.C. §411; DESAN, *supra* note 55, at 43-50.

country's money in the meantime, ensuring its easy currency for ordinary exchange. That gives the I.O.U. its cash premium.²⁴¹ As the Court described the strategy in *Julliard*:

Congress has authority to issue these obligations [of the United States] in a form adapted to circulation from hand to hand in the ordinary transactions of commerce and business. In order to promote and facilitate such circulation, to adapt them to use as currency, and to make them more current in the market, it may provide for their redemption in coin or bonds, and may make them receivable in payment of debts to the government.²⁴²

Compare the practice of direct-issue credit money with our current practice. When a government buys goods or services with an I.O.U., it is borrowing directly from the person to whom it gives the I.O.U. In effect, the government is stripping banks and investors out of the equation. Rather than borrowing funds from banks or investors by way of a bond, and then increasing the credit commitments it has outstanding when a central bank “monetizes” the bond, the government simply borrows *in goods*, expanding its credit obligations immediately when it gives someone an I.O.U. that it will treat as money and it will take back in the future. The I.O.U. comprises the debt directly; it is not booked as national debt owned by bond-holders.

Americans have long targeted direct-issue money at essential public uses. The early American settlers, the revolutionary generation, the federal government during the War of 1812 and the next decades, the North during Civil War – all created currency issued outside the financial system. They called the currency by different names. Some labels, like “bills of credit” or “tax anticipation currency,” emphasized the nature of the money as a credit. Other names, like the “Treasury notes” of the ante-bellum period and the “U.S. notes” issued during the Civil War (aka greenbacks) stressed the stature of money's source, the federal government or its financial stronghold, the Treasury. As for the authority to make money out of credit, the Supreme Court long ago pronounced it one “possessed by every independent sovereignty,” powerfully effective in times of exigency, and deeply rooted in the constitutional capacity of Congress to carry “aggregate powers of the government” into effect.²⁴³

American experience with credit money furnishes a model for its practice today. Early American settlers recognized that when their provincial government issued I.O.U.s, pledging that they would be good in the future, it should make that pledge meaningful by creating public demand for the medium. Imposing taxes or other fees payable in the medium worked towards that end. The match need not be, in fact should not be, arithmetic. A wealth of factors

²⁴¹ See *supra* TAN 57, 91.

²⁴² *Julliard v. Greenman*, 110 U.S. 421, 444-445 (1884).

²⁴³ *Knox v. Lee*, 79 U.S. 457 (1870).

influences monetary value, including private demand and expectations about value.²⁴⁴ But colonial communities that kept their commitment created paper moneys that worked; colonial communities that disconnected currency from public demand produced paper moneys that lost value, sometimes disastrously.²⁴⁵

The same was true during the Civil War. The Union government advertised its commitment on the of the greenbacks (“*This Note is Legal Tender for All Debts Public and Private Except Duties On Imports And Interest On The Public Debt; And Is Receivable In Payment Of All Loans Made To The United States*”) and kept its pledge with enough credibility to limit inflation in its paper money. Prices rose between 80 to 100% by War’s end, respectable for an existential national crisis and nothing close to hyperinflation. By contrast, the Confederate government, disorganized and with fading legitimacy as its defeats mounted, failed to tax and watched its dollar lose 9000% of value by War’s end.²⁴⁶

The same episode reveals that direct-issue dollars can meet private demand, offering services as cash and a convenient mode of payment that people want and are willing to pay for. In areas with well-managed credit money, Americans took direct-issue cash and held it without a discount, even if it was only going to be “redeemed” when they used it to pay a tax sometime in the future. In fact, early Americans learned to *delay* taxes that contracted a money stock in high demand. Soon after the Civil War, the federal government accelerated taxing in U.S. notes to bring down inflation – and immediately regretted it. By 1868, the government had reversed

²⁴⁴ Farley Grubb models the complexities in Grubb, *supra* note 61. Abba Lerner’s “functional finance” theory makes the argument in a modern vein, as does much economic scholarship. See Abba P. Lerner, *Functional Finance and the Federal Debt*, in SELECTED ECONOMIC WRITINGS OF ABBA LERNER (1943); Scott Fullwiler, et al., *Modern Money Theory: A Response To Critics*, POLITICAL ECONOMY RESEARCH INSTITUTE WORKING PAPER SERIES (2012).

²⁴⁵ For colonial success at meeting private demand through a direct-issue government medium when responsibly managed, see, e.g., Grubb, *supra* note 61; Lester, *supra* note 67; E. James Ferguson, *Currency Finance: An Interpretation of Colonial Monetary Practices*, 10 WM. & MARY Q. (1953). For work tracking the impact of tax anticipation on money’s value and debate over whether to characterize the public commitment as taxing or as limiting supply, see Bruce D. Smith, *The Relationship Between Money and Prices: Some Historical Evidence Reconsidered* § 26 (Federal Reserve Bank of Minneapolis 2002); Scott Sumner, *Colonial Currency and the Quantity Theory of Money: A Critique of Smith’s Interpretation*, 53 JOURNAL OF ECONOMIC HISTORY (1993); Calomiris, *supra* note 89.

²⁴⁶ TURNER, *supra* note 53, at 112; TIMBERLAKE, *supra* note 145, at 85-86, 102-03. According to recent scholarship, populations in the North debated taxation more robustly than in the South, accepted its legitimacy more deeply, and carried higher tax burdens. Ron & Valeonti, *supra* note 175.

course to stave off dropping prices, *i.e.*, deflation. The greenbacks would remain in circulation for several decades, providing essential liquidity to a growing economy.²⁴⁷

As the historical experience demonstrates, directly issuing dollars does not equate with “printing money” or monetary finance. In principle and optics, direct-issue eschews backing on longer-term debt but anticipates future taxation, unlike monetary finance.²⁴⁸ The practices are often conflated because future taxation can always be deferred.²⁴⁹ In addition, the most famous image of money directly and publicly produced comes from Milton Friedman, who recognized that monetary expansion pure and simple could act as a stimulus in economies with capacity left to grow. As he argued, a government could goose demand by printing dollars bills and dropping them from a helicopter while leaving taxes unchanged. The lucky bunch collecting the dollars would suddenly be wealthier compared to their peers; they would spend their new-found riches and, if the economy was not at full capacity, economic output would increase along with some degree of inflation.²⁵⁰

Friedman’s helicopter was aimed as much to provoke as to propose policy. The hypothetical dropped out the government’s agency in affecting public demand or gaging private demand. As an economic matter, where inputs were fully employed, monetary expansion could simply drive up prices, as more dollars chased the same number of goods. That effect, and the ease of “printing money,” suggested that inflationary abuse was likely. At a political level, proposals for monetary finance raise the issue whether the Federal Reserve would be accumulating even more power, displacing decision-making that should be political.²⁵¹

²⁴⁷ BENSEL, *supra* note 62, at 289-92. As the post-Civil War economy grew, demand for the dollar outstripped the supply – the government had stopped spending greenbacks into circulation. The economy expanded as Americans produced more goods, grew more crops, and made more deals. The U.S. should have pumped even more money into circulation to support the boom, as Friedman himself pointed out. MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867-1960* 133-34 & n.52 (Princeton University Press 1963).

²⁴⁸ While most forms of monetary finance posit the monetizing of long-term debt, Bernanke notes that the Fed could also simply increase the Treasury’s bank account. Ben B. Bernanke, *What tools does the Fed have left? Part 3: Helicopter money* § 2020 (Brookings 2016). Presumably, that money would read, however, as liabilities of the Fed rather than the Treasury.

²⁴⁹ *See, e.g.*, TURNER, *supra* note 53, at 13.

²⁵⁰ *Id.* at 218-19. As Bernanke emphasizes, the economy must be operating “below potential,” *i.e.*, with a shortfall in aggregate demand as opposed to slow growth due to weak productivity or other problems. Bernanke, *supra* note 248. If the money is spent into circulation, output will increase because of effects on public works spending on jobs and income; increased consumer spending without offset because of anticipated taxes; and increased investment because expected inflation will imply lower real interest rates if nominal rates are fixed. *Id.*

²⁵¹ Bernanke, *supra* note 248. *See, e.g.*, Mark Blyth, et al., *Now the Bank of England Needs to Deliver QE for the People*, THE GUARDIAN, May 21, 2015.

On both economic and political counts, direct-issue by earlier governments diverged. As a matter of economics, the tax anticipatory principle of direct-issue mattered. Unlike helicopter money, sustainable direct-issue arrangements came with the commitment to pull money back in when demand for it diminished, although governments surely could -- and did -- mix some monetary finance into their policies.²⁵² At the political level, direct-issue dollars were authorized and allocated by legislatures. The strategy of direct-issue predated the Federal Reserve – and has not been used since. (The correlation is surely not accidental.)

But if monetary finance is distinct, its economics and its politics illuminate the problem of modern money creation. At the economic level, there should be leeway for fiscal action — money creation -- without the creation of long-term debt.²⁵³ In ways prescient to the COVID-19 Crisis spending, Adair Turner portrays the dilemma when politics already deep in debt struggle with recessionary conditions. Every fiscal outlay made within the current architecture drives up public debt burdens, the amount owed bondholders. Monetary policy offers no good alternative because while looser money would be tonic, including low interest rates and quantitative easing, it would also fuel the very private credit creation practices that create instability and exacerbate inequality.²⁵⁴ By contrast, monetary finance works by creating money while vitiating the bonded public debt that accompanies modern money. Thus Friedman omitted a bond backing for his helicopter money; later writers do the same or stipulate a non-functional bond as backing for a transfer of electronic money to citizens.²⁵⁵ As Turner points out, that strategy would allow a government to dissipate the debt overhang dragging down its economy.²⁵⁶

Like monetary finance, spending direct-issue dollars avoids creating bonded debt (or bonded debt that matters). But using direct-issue dollars is transparent about the debt it does create and its effects. Direct-issue dollars are clearly sovereign liabilities, I.O.U.s that can be retired through taxation. Historically, communities that used direct-issue dollars debated the way they injected the cash into circulation and the extent to which they taxed them out.²⁵⁷ That debate put

²⁵² See *supra* note 245. As for mixing in monetary finance, notice that the decision to tax -- or issue bonds for that matter -- could well accommodate some amount of monetary expansion absorbed either by private demand or in rising prices.

²⁵³ See, generally, the agreement that “in theory at least, helicopter money could prove a valuable tool,” and will work when monetary policy does not. Bernanke, *supra* note 248; see, e.g., William Buiter, *The Simple Analytics of Helicopter Money: Why It Works -- Always*, 8 *ECONOMICS: THE OPEN-ACCESS, OPEN-ASSESSMENT E-JOURNAL* (2014).

²⁵⁴ TURNER, *supra* note 53, at 12, 215-18.

²⁵⁵ *Id.*, at 219 & n.15.

²⁵⁶ *Id.*, at 12, 215-22; Bernanke, *supra* note 248.

²⁵⁷ The post-Civil War debate over the contraction of greenbacks and, in turn, resumption is the most famous episode. See *supra* note 247. But the issue fanned commentary during in early America as well. See, e.g., Cotton Mather, *Some Considerations on the Bills of Credit Now*

at issue the nature of money, the role of credible commitment, and the complexity of monetary value. Today, discussion of those issues takes place only as filtered through a money supply built on longer-term debt, the frame of private claims to repayment, and the interests dividing bond-holders from taxpayers, obscuring the basics.

As for the effects of direct-issue dollars, earlier Americans recognized the link between spending direct-issue dollars, tax commitments, and political viability. They often conditioned redemption or retirement over time – a commitment to tax in money at the end of a war, for example, or over a certain number of years. The tools to support monetary value are much broader today; monetary policy as well fiscal policy could be used as well to respond to conditions like inflation.²⁵⁸ According to that mix, some part of direct-issue debt could be retired as directly as it is issued, through taxation or other public payments, without returns to bondholders. Other parts of the debt could be carried indefinitely (and without interest payment), insofar as an expanding economy and the private demand that accompanies it absorb the increased money supply.

For advocates of monetary finance, the transparency of direct-issue dollars as tax anticipation currency may undermine its ability to create economic stimulus. According to the theory of Ricardian equivalence, individuals with rational expectations will neutralize any difference between public spending that is funded by taxation and that funded by borrowing, including direct-issue dollars. That is because, if the government uses borrowing, people will cut down on future consumption as they budget for future taxation (to pay off the borrowing).²⁵⁹ If that is so, monetary expansion must advertise itself as permanent, as does monetary finance, if it is to have any stimulative effect. But the problem overstates the force of the theory, given the limited empirical evidence for it.²⁶⁰ That is especially true if an increase in taxation is conditional; contingency would further dilute any impact on expectations. The sheer size of the modern economy would weaken the effect still further. In addition, money spent on public works, unlike

Passing in New-England, in COLONIAL CURRENCY REPRINTS (Andrew McFarland Davis ed. 1691) (advocating popular support of taxation to support direct-issue bills' value).

²⁵⁸ The infrastructure of modern finance poses problems as well as tools for implementing either monetary finance or direct-issue dollars. For example, once money is publicly created, whether by monetary finance or by direct-issue, it can add to bank reserves, expanding banks' capacity to lend. See Graham, *supra* note 97, at 434. The greenback became part of the monetary base in just that way. As Turner argues, the government can neutralize that effect by raising reserve requirements and declining to pay interest on such reserves. TURNER, *supra* note 53, at 220-22. For purposes of this discussion, I assume the implementation solutions that advocates of monetary finance propose for similar problems.

²⁵⁹ See, e.g., Bernanke, *supra* note 248; TURNER, *supra* note 53, at 215-216.

²⁶⁰ TURNER, *supra* note 53, at 216 (summarizing research by Brad DeLong and Larry Summers).

monetary finance that may take place through tax cuts, has stimulative effects because of job creation.²⁶¹

In fact, monetary expansion targeted at those of lower income would be far more likely spent not saved.²⁶² According to Mark Blyth, Eric Lonergan, and Simon Wren-Lewis, consumers put to use between a half and a third of cash windfalls, making expansion targeted to them far more efficient than quantitative easing.²⁶³ That efficacy would be increased for those with a higher need to spend for current needs. That is particularly true given that the same lower-income group could anticipate protection from a tax increase. Directly issuing dollars, as opposed to monetary finance, invites that kind of tailoring, as discussed below. Further, if money arrives during a recession, “rational individuals and businesses” – the premise of the Ricardian equivalence -- will recognize that there is capacity for growth and employment. They will spend rather than save, thus stimulating the economy.²⁶⁴

The escape from recessionary paralysis without debt build-up may be the biggest distributive gift that direct-issue dollars could deliver. But the distributive economics of direct-issue dollars brings us back to the political dimension. Money creation is manifestly a political matter. That is true whether it is done by the Fed or by commercial banks. That argument is the burden of the paper. The proposal for direct-issue dollars is only exposing the stakes.

Given its political character, a democratic legislature is the most appropriate agent to directly issue dollars. The federal Congress in the Civil War, provincial assemblies in early America, each created and took responsibility for direct-issue dollars. Those bodies, flawed as they were as representative institutions, were the most viable forums for determining the politics of money creation. In recessionary times like spring 2020, Congress could target those dollars at those in the most need or with the most desert according to public-regarding criteria.

The strategy, deployed in a world with powerfully independent central banks, would actually divide power over money creation in a new way. Unchecked power over money’s expansion stokes fears of abuse. But with the exception of the assignat, modern episodes have actually been carried out by central banks, acting at the behest of political actors.²⁶⁵ The ease of

²⁶¹ Bernanke, *supra* note 248, at n.7.

²⁶² *See, e.g.*, TURNER, *supra* note 53, at 120-122. For the targeting of lower-income individuals, *see infra* TAN 270 to 274.

²⁶³ Increasing consumption by 1% of GDP thus requires monetary expansion of 3% GDP, a figure they contrast with the fading efficacy of QE, 20% of Britain’s GDP when they wrote. MARK BLYTH, *AUSTERITY: THE HISTORY OF A DANGEROUS IDEA* (Oxford University Press 2013).

²⁶⁴ *See, e.g.*, TURNER, *supra* note 53, at 216; BLYTH, *supra* note 263.

²⁶⁵ The Hanke-Krus table records 56 episodes of hyper-inflation; 47 clearly occurred after those polities had established central banks. Steve Hanke & Nicholas Krus, *World Hyperinflations*.

monetizing long-term debt may well contribute to the pattern: the technique is both indirect and anonymized by the administrative actors who carry it out. As an accounting operation, it also fades from popular view.

By contrast, Congress would take responsibility when it issued money directly. That mechanism answered in 18th and 19th century Britain and the United States: Britain with its Exchequer bills and the U.S. with its Treasury notes and greenbacks do not appear on the Hanke-Krus table of hyperinflations.²⁶⁶ Like other politically sound regimes, those orders did not turn towards proliferating the money supply.²⁶⁷ In fact, direct-issue makes salient the role of taxes and other forms of public demand in supporting money's value.²⁶⁸ That changes their valence in public debate, underscoring their importance to a functioning monetary system and their character as obligations of citizenship. Those elements apparently gave the Union a robust advantage over financing the Civil War compared to the Confederacy.²⁶⁹

But while Congress would take democratic initiative, it would do so within a bureaucratic architecture designed to stabilize monetary value. Unlike the 19th century U.S. or U.K., where central banks either did not exist or, as in the U.K., had only rudimentary notions of their function, the Federal Reserve is mandated to use monetary policy toward that end. The central bank has a panoply of tools to manage interest rates and target inflation, although the strategy advocated here -- money creation aimed at recessionary shortfalls in aggregate demand -- would likely be tonic rather than troublesome. In fact, the strategy would make expansionary monetary

(2012). As the Bank of International Settlement documents, central banks in such polities furnish the liability that is assimilated to base money. A Bank for International Settlements, *The Role of Central Bank Money in Payment Systems* 1, 7-8, 13-14 (BIS 2003); *see also* Desan, *supra* note 59, at [17]. The remaining 9 cases in the table appear to involve central bank-issued money as well, produced at city or regional levels or in politically transitional or tumultuous periods. *See* Pavle Petrović, et al., *The Yugoslav Hyperinflation of 1992–1994: Causes, Dynamics, and Money Supply Process*, 27 J. COMPAR. ECON. (1999); Peter Bernholz, *Inflation, Monetary Regime and the Financial Asset Theory of Money* § 41 (Blackwell Publishing Limited 1988); THOMAS SARGENT, *RATIONAL EXPECTATIONS AND INFLATION* 60-64 (Princeton University Press 2013); Gail E. Makinen & G. Thomas Woodward, *The Taiwanese Hyperinflation and Stabilization, 1945-1951*, J. MONEY, CREDIT, & BANKING, 91-93 (1989).

²⁶⁶ *See* Hanke & Krus, *supra* note 265. For the reasonable record of the early American provinces, where money was also issued by legislative assemblies, *see, e.g.*, E. JAMES FERGUSON, *THE POWER OF THE PURSE; A HISTORY OF AMERICAN PUBLIC FINANCE, 1776-1790* 1-24 (University of North Carolina Press 1961).

²⁶⁷ *See* WOODRUFF, *supra* note 61 (tracing link between disarray in Soviet Union and the demise of the ruble); Paul Krugman, *Is Government Money Creation Actually Enabling Deficit Spending?*, N.Y. TIMES, January 17, 2022 (noting link between regime strength and hyperinflation).

²⁶⁸ *See supra* TAN 56 to 59.

²⁶⁹ *See supra* note 246.

policy less necessary; that would reduce the difficulty (economic and political) of weaning the financial sector from abundant public support. Direct-issue would thus operate symbiotically with the Fed: its effects would be subject to the Fed's management, while easing the over-dependence on monetary policy that currently burdens the central bank.

When Congress did use money creation, its political agency and accountability would allow it to channel that money to targeted ends. By contrast, advocates of monetary finance generally argue that it should be deployed diffusely; central bankers are appropriately queasy about preferring certain portions of the population over others when they consider it. Thus advocates like Friedman, Turner, Blyth and others assume a strategy that would put new money into "the hands of a broad swath of households and businesses."²⁷⁰ Doing so would deliver benefits effectively because money arrives directly rather than by way of finance (higher asset prices, credit expansion by banks), but it would deliver them widely as well.²⁷¹

A democratically legitimate body could spend direct-issue dollars more selectively for more distributive impact, a particularly important point in recessionary dynamics that are escalating inequality. The poor, as well as those with the need to finance urgent and productive endeavors – education, community welfare, public health – are "rational individuals and companies" who will use funds to increase capacity rather than stash it in anticipation of future taxes. Similarly situated are households dealing with job loss during a pandemic, where dollars directly issued to people would prevent essential spending from falling further. That is especially necessary when banks pull back their own lending. As in 2008, the 2020 Crisis made lenders cautious and borrowers with productive projects were unlikely to choose the moment to expand. The plethora of programs rolled out by the Fed aimed at overcoming exactly just such obstacles. Faced with that problem the Fed has injected billions since 2008 to promote bank lending; Congress added billions with the 2017 tax cuts.²⁷² Neither succeeded in connecting banks with populations currently underserved.

When earlier governments directly issued dollars, they selected recipients carefully rather than dropping money indiscriminately from helicopters. As they confronted war, threats to security, and other exigencies, governments spent to compensate soldiers, suppliers, and other essential creditors -- bills of credit, Treasury notes, and greenbacks issued to those groups. The conditions that officials confronted, in other words, determined how they defined the category of recipients who merited direct-issue dollars.

More creatively, officials also designed programs to inject direct-issue dollars through lending programs. From the 1720s until the eve of the Revolution, provincial governments across the

²⁷⁰ TURNER, *supra* note 53, at 220.

²⁷¹ *Id.*

²⁷² *See supra* TAN 108-119.

mid-Atlantic fashioned credit schemes that catered to entrepreneurs in need of capital, publicizing criteria. “Loan offices” advanced newly created cash to farmers on security of mortgaged land. That cash credit came with a variety of conditions. Provinces attached lending ceilings on borrowed amounts to ensure wide dispersal of the funds; they created different ways to decentralize access; they seized land for nonpayment or treated noncompliance more leniently.²⁷³ Each policy put different policies into effect, the product of public debate over priorities. Early agrarian communities favored farmers, as well as carrying forward the racialized and gendered cruelties of the day.²⁷⁴ Early land loan offices spread access to credit inclusively within those flawed terms.

Provincial legislatures aimed to irrigate communities where the existing money pooled at the top. Their credit currencies, wrote one enthusiast, enabled settlers “to tear up trees by the roots, and to split the rocks in pieces, clear their land, fence it in, plow, sow, reap, and mow, build houses, ships.”²⁷⁵ Per capita income exceeded those in Britain and, according to recent research “probably had the most equal distribution of income in the Western world.”²⁷⁶

As the early American experience shows, direct-issue dollars open the door to more creative thought about credit allocation. In the provincial system, dollars loaned by land banks were issued directly in response to private demand. That is, communities designed them to provide elasticity in the money supply.²⁷⁷ Commercial banks currently monopolize that function: they expand credit in the form of money when times are good and reduce their lending when demand for credit subsides. The strategy provides crucial monetary inflows to fuel productivity. But as we have seen, banks select for certain kinds of productivity: their orientation towards legible profits has produced a record of discriminatory and limited access.²⁷⁸ Bank lending is also notoriously “procyclical”: in good periods, banks overshoot by expanding credit in increasingly speculative ways, while in bad periods, banks are overly cautious, holding back recovery.²⁷⁹ The financial crises that result devastate public budgets and can exacerbate inequality.²⁸⁰

Dollars that issued directly according to different gages of private demand could remedy both issues. The basic idea is straightforward, although developing it is beyond the scope here. (The

²⁷³ See, e.g., Grubb, *supra* note 61; Lester, *supra* note 67.

²⁷⁴ See, e.g., K-Sue Park, *Money, Mortgages, and the Conquest of America*, 41 L. & SOC. INQUIRY: J. AM. BAR FOUND. (2016).

²⁷⁵ ANONYMOUS, A COPY OF A LETTER FROM QUEBEC (1747).

²⁷⁶ The finding holds even when the slave population, nearly bereft of resources, is included. See Peter H. Lindert & Jeffrey G. Williamson, *American Colonial Incomes, 1650-1774* 3-4 (NBER 2014).

²⁷⁷ See *supra* TAN 63-65.

²⁷⁸ See *supra* TAN 111-118.

²⁷⁹ See, e.g., MEHRLING, *supra* note 78, at 15-17.

²⁸⁰ See, e.g., BLYTH, *supra* note 263; PIKETTY, *supra* note 87, at 294-98, 544-47.

paper is, after all, only about the first trillion dollars of spending.) The federal government could create public credit facilities that lent dollars according to pre-specified and public-regarding criteria. Those criteria could be tied to productivity measured in ways beyond commercial profitability. Dollars for education, for example, could issue directly instead of against Treasury securities.²⁸¹ Likewise, dollars to increase food security or to fund climate change amelioration. Just so, agrarian populists advocated direct government dollars when faced with exploitative bank policies. They proposed that the government issue that money against credit in crops during harvest, a period when banks otherwise raised interest rates.²⁸² The device would have rescued the United States from seasonal fluctuations in the money supply that destabilized the economy in the late nineteenth century.²⁸³

More speculatively, an inflow of dollars produced according to different criteria should be able to buffer the economy from the procyclical effects of banked money creation. In other words, we could diversify the avenues for money's inflow and contraction. Commercial banks' current exclusivity as agents of money creation needlessly exposes our economies to the instability generated by banking practices. In turn, that exclusivity restricts the tools we can use to remedy problems, as Turner makes so clear in his case for monetary finance.²⁸⁴ By contrast, gaging private demand according to different criteria may dampen speculative spikes and cushion the lagging lending that follows busts.

A direct-issue dollar is radically transparent. It works without compounding public debt. It locates authority appropriately in hands democratically accountable, even as it makes use of central banking safeguards. It can target immediate needs. It could issue in ways that respond to private demands currently unmet. It could remedy the brittle dynamics of a design that puts money creation singularly in commercial banks. The experiment is well-worth the price.

* * *

Considering proposals for central bank digital currencies, a group of central banks and the Bank for International Settlements recently adopted a Hippocratic Oath for finance, a pledge to "do no harm." The Oath dictated a rather astonishing precondition. "First and foremost," the general manager for the BIS stipulated, any design change could "not disintermediate commercial

²⁸¹ Student debt is currently funded by government bonds and comes within the debt limit. *See* Peer, *supra* note 46, at 108-11. That said, certain kinds of government lending today, while not direct-issue, are not booked as part of the government debt. *See id.*, at 6-9.

²⁸² Coordinating their credit denials, banks promoted debt peonage across swaths of the South and Southwest. *See* GOODWYN, *supra* note 105.

²⁸³ *See* Mehrling, *supra* note 75.

²⁸⁴ *See supra* TAN 254.

banks.”²⁸⁵ In other words, reforms should not alter – or, we might add, question -- the role held by commercial banks in creating and distributing the money supply.

The issue raised here is whether that precondition complies with the Oath itself. Our monetary hardwiring depends on commercial banks as both compass and conduit; they determine who will receive the credit that comprises our public medium and they disseminate that money into circulation. The magnitude of their role and the defining nature of its distributive impact make all the more striking the inadequacy of their democratic justification.

Proposals for reform are multiplying. “FedAccounts” aim at stabilizing the system and reaching those currently shut out of it. Offering individuals bank accounts at the Federal Reserve would give them access to the payments system and move control over money creation to the central bank, leaving banks to operate only as experts in allocating credit.²⁸⁶ State and municipal public bank proposals aim to supplement commercial banks by joining them as lenders. While they would work within the existing system, joining rather than displacing private banks as money creators, they would lend according to different criteria and for different ends.²⁸⁷ Virtual currencies, issued by central banks or by private networks, open up opportunities for money transfer outside the “rails” and switches of the existing system.²⁸⁸ All differ from the proposal I make here and some, like cryptocurrencies, seem more speculative asset than sustainable money. But each invites us to us to reconsider the role of commercial banks and, in fact, of the financial system more generally.

The COVID spending of 2020, like the Financial Crisis of 2008, exposed profound problems with our monetary circuitry. Money captures value, distributes resources, and makes equality real or ever illusory. As a medium public in its engineering and penetrating in its reach, it is basic as elections to our political economy. As much as the way we vote, it needs a democratic design.

²⁸⁵ Agustin Carstens, Digital Currencies and the Future of the Monetary System 14 (Hoover Institutions Policy Seminar 2021); *see also id.*, at 9-13. (emphasizing concern to protect private role).

²⁸⁶ *See* Morgan Ricks, et al., *A Public Option for Bank Accounts (Or Central Banking for All)* Vanderbilt Law Research Paper at <https://ssrn.com/abstract=3192162>.

²⁸⁷ *See, e.g.*, An Act to Establish a Public Bank, Senate Bill 665 (filed 2021).

²⁸⁸ *See, e.g.*, Bill Maurer, *Chartalism Revisited: Payment Infrastructures, Tribute, Tithe and Tally* (forthcoming).