

The Hidden Monetary State

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Money is a motley. While the state enjoys a monopoly on issuing new physical currency, a variety of instruments serve money-like roles in the financial system. The commercial banking system significantly augments the money supply through issuing deposits. Alongside it, a shadow banking system has also developed, offering a range of deposit substitutes.

This Article seeks to cast new light on the U.S. financial system by exploring how, over the course of the twentieth century, federal policymakers engaged in a series of distinct and largely uncoordinated monetary experiments. As we show through historical case studies, federal authorities designed, promoted, and repurposed financial instruments, endowing them with money-like characteristics by providing them with liquidity support, credit support, or both.

In essence, policymakers created special purpose moneys to further national policy ambitions. The result of each intervention was a debt instrument with monetary properties. Market participants understood, in part due to these instruments' implicit federal guarantees, that they would be rapidly convertible into base money under a wide range of circumstances. In short, the market treated these instruments as money substitutes.

Yet the creation and use of these instruments was not coordinated and controlled by the United States' central bank and formal monetary authority, the Federal Reserve, nor was it subject to the same level of scrutiny and supervision as the banking system. Almost invariably, these special purpose monies proved less visible than traditional monetary policy. Hence our description of it as a kind of submerged or "hidden monetary state."

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This historical account enriches our understanding of the costs and benefits of such approaches. As a normative matter, we show how pursuing public ends by means of special money creation is generally more complex, less visible, and more regressive than most monetary policy. We also show, however, that these policies have led to important public benefits that are not always recognized. These relate to the international role of the dollar and the functioning of the U.S. Treasury and mortgage markets. As a policy matter, our account helps clarify how shadow banking emerged in ways that can inform policy making. In particular, crypto assets present many of the same challenges that policymakers faced in the 1960s and 1970s. We also link shadow banking to broader debates about the nature of the state and public policy.

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INTRODUCTION

If the paper of a bank is to be permitted to insinuate itself into all the revenues and receipts of a country; if it is even to be tolerated as the substitute for gold and silver—in all the transactions of business; it becomes, in either view, a national concern of the first magnitude. As such, the ordinary rules of prudence require, that the government should possess the means of ascertaining, whenever it thinks fit, that so delicate a trust is executed with fidelity and care.

—Alexander Hamilton (1790)¹

Money is a motley. While the state typically enjoys a monopoly on issuing new physical currency, a variety of instruments serve money-like roles in the financial system. Most familiarly, the United States relies heavily on its commercial banking system to augment the money supply through issuing deposits. Alongside, and on top of the commercial banking system, the shadow banking system has developed, offering a range of deposit substitutes.²

This Article seeks to cast new light on the U.S. financial system by exploring how, over the course of the twentieth century, federal policymakers engaged in a series of distinct and largely uncoordinated monetary experiments. These policymakers found that money-like instruments could be directed in service of economic and other national ambitions. As we show through historical case studies, federal authorities designed, promoted, and repurposed financial instruments, endowing them with money-like characteristics by providing these instruments with some measure of liquidity support, credit support, or both. The result of each intervention was an instrument, almost always some kind of debt, with monetary properties.

1. ALEXANDER HAMILTON, THE REPORT OF THE SECRETARY OF THE TREASURY ON THE SUBJECT OF A NATIONAL BANK 35 (N.Y., Whiting & Co. 1811), <https://fraser.stlouisfed.org/title/report-secretary-treasury-alexander-hamilton-subject-a-national-bank-3677> [<https://perma.cc/3R9Y-TRF5>].

2. See, e.g., Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Rsrv. Sys., Speech at the Fourteenth Jacques Polak Annual Research Conference, Washington, D.C.: The Crisis as a Classic Financial Panic (Nov. 8, 2013) (stating that “in the recent [2008 global financial] crisis, much of the panic occurred outside the perimeter of traditional bank regulation, in the so-called shadow banking sector”); see also MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION (2016) (arguing that shadow banking is the central cause of financial instability); Daniel K. Tarullo, Member, Bd. of Governors of the Fed. Rsrv. Sys., Speech at the Federal Reserve Bank of San Francisco Conference on Challenges in Global Finance: Shadow Banking After the Financial Crisis (June 12, 2012) (discussing shadow banking and the need to study “intermediaries behaving like banks but without bank-like regulation”). See generally Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, BROOKINGS PAPERS ON ECON. ACTIVITY 261 (2010).

Market participants understood, in part due to the implicit federal guarantees, that these instruments would be rapidly convertible—including at size, at low cost, and at stable prices—into base money under a wide range of circumstances—characteristics often summarized as a “deep and liquid” market. In short, the market treated these instruments as money substitutes. Policymakers did this in service of national economic ambitions.

In essence, the government created special purpose moneys to further policy goals.³ Issuing debt with some, if not all, of the characteristics of “money” is, familiarly, a cheap form of financing.⁴ There is strong demand for the convenience and safety of money-like assets, and a financial institution that issues debt claims with this convenience yield will enjoy a lower cost of funding.

These special purpose monies were deployed in pursuit of economic ambitions that were usually related, either directly or indirectly, to fiscal policy.⁵ For example, in several cases the goal involved the facilitation of mortgage finance and thus of widespread home ownership. The means chosen, however, were paradigmatically monetary in character. Yet the creation and use of these instruments was not coordinated and controlled by the policy apparatus of the United States’ central bank and formal monetary authority, the Federal Reserve. These instruments were also not generally subject to the same level of scrutiny and supervision as the banking system. Almost invariably, these special purpose monies are less visible and more complex than traditional monetary policy. Hence our description of it as a kind of “hidden monetary state.”⁶

We focus on four of the most prominent forms of federal government-supported debt financing—repurchase agreements (“repos”), Eurodollars, the Federal Home Loan Banks (“FHLBs”), and the mortgage-backed securities

3. “Special purpose monies” is a clunky phrase. But it avoids the pitfalls of using terms whose definitions are vague—like “shadow banking”—and for which regulators and scholars have strong and conflicting views. By special purpose monies we mean financial instruments for which federal policymakers provide credit and/or liquidity support in pursuit of some specific economic ambition.

4. See RICKS, *supra* note 2.

5. The two primary tools by which federal policymakers can shape the economy are monetary and fiscal policy. See Gabriel Rauterberg & Joshua Younger, *What Is the Law’s Role in a Recession?*, 135 HARV. L. REV. 1351, 1356–57 (2021). Monetary policy typically involves a central bank influencing the economy by altering interest rates and the money supply. *Id.* at 1357. Fiscal policy involves the government borrowing, taxing, and spending. *Id.*

6. We build on the prior work of historians, and in particular on three previously disconnected literatures. First, the small but important literature exploring the origins of the Eurodollar market, the larger literature exploring the birth of the MBS market, and the historical analysis of repos. See *infra* notes 17, 128, 195–218, 423.

(“MBS”) market. These are economically and financially consequential markets. The FHLBs, with more than \$1.3 trillion in total consolidated assets as of the fourth quarter of 2023,⁷ would be the fifth largest commercial bank in the U.S. if combined;⁸ repos, which are a form of lending secured by the transfer of an underlying security, constitute a roughly \$5 trillion market;⁹ government-sponsored MBS clock in at a multi-trillion dollar market;¹⁰ Eurodollars, which are U.S. dollars deposited in banks outside U.S. territory and regulation, are perhaps the largest form of shadow banking, and conservative estimates suggest they amount to \$10 trillion.¹¹ In total, these four forms of specialized and directed financial intermediation represent a significant portion of the entire financial system.

This Article shows how each of these forms of special purpose money were invented or promoted by federal policymakers at crucial junctures in their early development. While the Article will develop this argument in depth, it is worth taking a few paragraphs to sketch the basics.

Consider our first example—*Eurodollars*. More technically, “Eurodollars” is a term for depository claims¹² issued by banks or bank branches outside of the United States that are nonetheless denominated in U.S. dollars. The name is doubly misleading. First, the phenomenon is not confined to Europe in any way; it is the creation of bank accounts in U.S. dollars anywhere outside of the framework of U.S. regulation and law. Second, the innocuous term fails to convey the global importance of the phenomenon. Catherine Schenk has called the growth of fiat currency

7. FED. HOME LOAN BANKS, COMBINED FINANCIAL REPORT FOR THE YEAR ENDED DECEMBER 31, 2023, at 6 (2024), https://www.fhlb-of.com/ofweb_userWeb/resources/2023Q4CFR.pdf [<https://perma.cc/KG5H-NPTV>].

8. Cassidy Horton, *Largest Banks in the U.S. 2024*, FORBES ADVISOR, <https://www.forbes.com/advisor/banking/largest-banks-in-the-us/> [<https://perma.cc/W9XL-L2XF>] (Mar. 13, 2024, 2:18 PM).

9. *See infra* Section I.B.

10. *See infra* Section I.D.

11. *See infra* note 128 and accompanying text.

12. Eurodollars are typically fractionally reserved, meaning they are liabilities that support non-cash assets, at least in part. This distinguishes them from correspondent banking accounts (*nostro* and *vostro*), which are issued in U.S. dollars by banks abroad but are balanced on the asset side as fully liquid cash assets. In that sense, correspondent banking accounts are more of a pass-through instrument for facilitating cross-border payments, to be contrasted with Eurodollars, which fund true credit intermediation and maturity transformation. For a primer on correspondent banking, see COMM. ON PAYMENTS & MKT. INFRASTRUCTURES, BANK FOR INT’L SETTLEMENTS, CORRESPONDENT BANKING 6–39 (2016), <https://www.bis.org/cpmi/publ/d147.pdf> [<https://perma.cc/3D52-LTG2>].

deposits without accompanying regulation “arguably the most dramatic financial innovation in the post-war period.”¹³

Eurodollars are, in a sense, U.S. currency. But they fall outside the explicit environment of U.S. banking regulation. They split the currency atom held together in the United States. If you issue a U.S. dollar bank deposit in the U.S., you must be a chartered bank regulated by the vast apparatus of U.S. banking regulation. That is not true of a U.S. dollar issued by a bank outside the U.S. (i.e., a Eurodollar). Unsurprisingly, the total amount of Eurodollars is difficult to estimate and track, but at its peak the quantity of these offshore dollars likely exceeded those produced by the U.S. domestic banking system—and by a significant margin.¹⁴ The Eurodollar market may now be \$10 trillion in size¹⁵—still significant compared to the \$16 trillion of deposits issued by domestically chartered U.S. banks.¹⁶

Eurodollars are typically thought to have emerged from a growing London-based financial market facilitating international flows of funds.¹⁷ In other words, extra-territorial dollars grew out of market forces. The real story, however, is more complex. The Eurodollar market’s rapid growth relied on a high degree of confidence that offshore dollars could be exchanged on demand for their onshore equivalents—i.e., freely convertible into the high-powered money at the top of the monetary hierarchy.¹⁸ After all, banks do not just take deposits—they lend them out. Depositors, however, require a high degree of confidence that they can have their U.S. dollars returned to them when requested. Yet only the involvement and support of the United States’

13. Catherine R. Schenk, *The Origins of the Eurodollar Market in London: 1955–1963*, 35 EXPLS. ECON. HIST. 221, 221 (1998).

14. As of year-end 2007, total dollar liabilities held by non-U.S. banks exceeded the amount held by the U.S. by \$12.5 trillion. Iñaki Aldasoro & Torsten Ehlers, *The Geography of Dollar Funding of Non-US Banks*, BIS Q. REV., Dec. 2018, at 15, 18. Broad money supply (including paper currency, bank reserves, and most bank deposits) was less than \$7.5 trillion. See *M2*, FRED (Jan. 1, 2024), <https://fred.stlouisfed.org/series/WM2NS> [<https://perma.cc/HK8A-9YCW>].

15. IÑAKI ALDASORO ET AL., GLOBAL BANKS’ DOLLAR FUNDING NEEDS AND CENTRAL BANK SWAP LINES 1, 2 (2020), <https://www.bis.org/publ/bisbull27.pdf> [<https://perma.cc/T9KE-6RZV>].

16. *Assets and Liabilities of Commercial Banks in the United States – H.8*, BD. GOVERNORS FED. RSRV. SYS. (Jan. 5, 2024), <https://www.federalreserve.gov/releases/h8/20240105/> [<https://perma.cc/CEN8-W3G3>].

17. Paulina Restrepo-Echavarría & Praew Grittayaphong, *Bretton Woods and the Growth of the Eurodollar Market*, FED. RSRV. BANK ST. LOUIS: ECON. BLOG (Jan. 20, 2022), <https://www.stlouisfed.org/on-the-economy/2022/january/bretton-woods-growth-eurodollar-market> [<https://perma.cc/FC35-BHS5>].

18. Hierarchies of money in the U.S. were discussed extensively by Milton Friedman and Anna Schwartz in their seminal work. MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES: 1867–1960 (1963).

central bank, the Federal Reserve (“Fed”), could provide that kind of assurance.

We describe how during the critical early years of the Eurodollar market in the early 1960s, the Fed decided to extend U.S. dollar liquidity support to foreign central banks, which could lend those dollars to their own local banks.¹⁹ Some have argued that this put the Fed, which was designed to backstop and stabilize the U.S. banking system, in the broader role of “lender of last resort” to the global dollar system itself. This was true to some extent in the 1960s,²⁰ became more explicit in the 1970s,²¹ and took on greater force in the global financial crisis (“GFC”) of 2007–2008.²² Policymakers were willing, in principle, to partially sacrifice U.S. sovereignty over the dollar in service of other policy goals—first buttressing the post-War international monetary order, and later, facilitating the flow of oil from East to West.²³ The subsequent growth of the Eurodollar market has proved astonishing. Figure 1

19. For important work that we draw on here, see *infra* note 128.

20. Fred Klopstock, a senior official at the Federal Reserve Bank of New York, described the use of swap lines to support liquidity in offshore U.S. dollar-based financial markets, including Eurodollars, in a 1968 monograph. “At times, in order to stabilize the market, the BIS has employed dollars obtained under swaps with the Federal Reserve System; thus, for brief periods, the available supply in the Euro-dollar market has been augmented by Federal Reserve credit.” Fred H. Klopstock, *The Euro-Dollar Market: Some Unresolved Issues*, in 65 ESSAYS ON INTERNATIONAL FINANCE 1, 3 (1968).

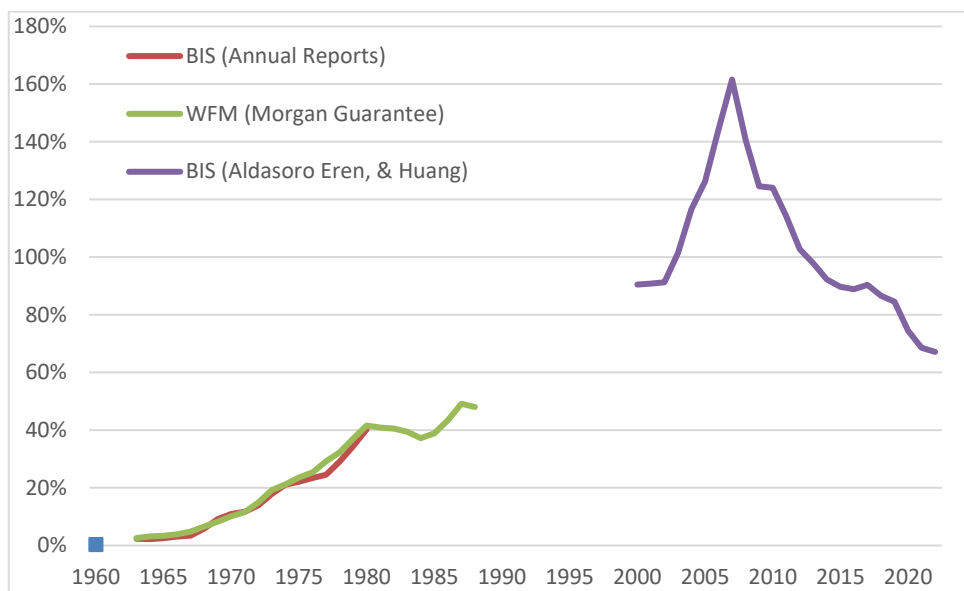
21. In 1974, in response to escalating stress in financial markets, the Group of Ten Central Banks, including the Fed, issued a communiqué in which they explicitly committed to act as lender of last resort to the Eurodollar market. *Communiqué Issued by Central Bank Governors of the Group of Ten and Switzerland*, in FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 10, attach. B (1974), <https://www.federalreserve.gov/monetarypolicy/files/fomcmod19740910.pdf> [<https://perma.cc/T5SS-WVK6>].

22. As Michael Bordo, Owen Humpage and Anna Schwartz describe, “What started out as a device to provide central banks with cover for unwanted dollar positions had returned as a way to finance global lender-of-last-resort operations in U.S. dollars.” Michael D. Bordo et al., *The Evolution of the Federal Reserve Swap Lines Since 1962*, 63 IMF ECON. REV. 354, 354 (2015). They continue, “The Federal Reserve’s decision to finance global lender-of-last-resort operations reflected its fear that disorder in foreign money markets could spill over into the United States, thereby further complicating monetary policy, and the Federal Reserve’s perceived responsibility as issuer of the world’s key international currency.” *Id.* at 366. Adam Tooze similarly argues that the use of swap lines to backstop the U.S. dollar liquidity to foreign central banks effectively remade the Fed into a “global lender of last resort,” thereby “confirming the centrality of the Fed to the global financial system.” Adam Tooze, *The Forgotten History of the Financial Crisis: What the World Should Have Learned in 2008*, 97 FOREIGN AFFS. 199, 207–08 (2018). Daniel McDowell examines this dynamic in more detail. Daniel McDowell, *The United States as an ILLR during the Great Panic of 2008–2009*, in BROTHER, CAN YOU SPARE A BILLION? THE UNITED STATES, THE IMF, AND THE INTERNATIONAL LENDER OF LAST RESORT (2016).

23. This is often referred to as “petrodollar recycling.” See, e.g., DAVID E. SPIRO, THE HIDDEN HAND OF AMERICAN HEGEMONY: PETRODOLLAR RECYCLING AND INTERNATIONAL MARKETS 1 (2019).

presents a time series of various measures of outstanding Eurodollars as a percentage of “M2,” a broad measure of the domestic U.S. money supply including savings deposits, money market deposits, and retail money market funds.²⁴ In the mid-1980s, well before the market had reached its zenith, Eurodollars were already recognized as foundational to the global financial system—“comparable to . . . coke smelting in the development of iron and steel, the steam engine in the development of railways, and the computer in information processing.”²⁵ By the mid-2000s there were far more “dollars” manufactured offshore than by domestic U.S. banks.

Figure 1. Outstanding Eurodollars as a Percentage of M2



Another useful case study in special purpose monies is the creation and evolution of the FHLB System. The FHLBs were designed to address a specific and acute concern: the collapse of housing finance at the onset of the Great Depression.²⁶ Policymakers had two clear and relatively narrow goals: first, to expand the availability of residential mortgages; second, to better align the typical terms for those loans with the personal finances of ‘ordinary

24. A more precise definition is available at FRED, *supra* note 14.

25. T.M. PODOLSKI, FINANCIAL INNOVATION AND THE MONEY SUPPLY 113 (1986).

26. *See infra* text accompanying notes 275–82.

Americans.’²⁷ Rather than do so through government expenditures or regulations, policymakers opted to create a new system of regional bankers’ banks, modeled after the Fed. The FHLBs did not make these loans directly. Instead, the FHLB system was designed to work through the existing banking system by selectively offering member institutions (thrifts, specifically) access to the funding advantage conveyed by their status as federal “instrumentalities”²⁸ with (eventually) a central bank backstop.²⁹ That access was intended to expand the home finance system, while the “strings attached” were designed to adjust the characteristics of new loans in favor of borrowers. In other words, policymakers deployed quasi-monetary funding for certain private lenders’ activities, channeling the terms for that lending so as to further policymakers’ broader goals.

Although initially narrow in scope, as Susan Hoffman and Mark Cassell describe, the reach and mission of the FHLBs has expanded dramatically.³⁰ They are a large component of the banking system in their own right: for instance, Figure 2 displays a time series for the assets of the federal home loans banks as a percentage of the assets of M2.³¹ The FHLBs have grown, as shown in Figure 3, by taking on increasing amounts of leverage. But the FHLB System has played an arguably more consequential role as the de facto lender of next-to-last resort to the private banking system—a role which was on full display during the three major stress episodes of the past fifteen years (the Global Financial Crisis (“GFC”), COVID market panic, and regional banking stress of 2023). Hoffman and Cassell put it succinctly: the FHLBs may be “arcane institutions,” but “they make a difference in what gets done in the world.”³²

27. See FED. HOUS. FIN. AGENCY, FHLBANK SYSTEM AT 100: FOCUSING ON THE FUTURE 2 (2023); see also U.S. GEN. ACCT. OFF., FEDERAL HOME LOAN BANK SYSTEM: REFORMS NEEDED TO PROMOTE ITS SAFETY, SOUNDNESS, AND EFFECTIVENESS 2–3 (2023).

28. The concept of a federal instrumentality dates back to the early nineteenth century. See *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 354 (1819). Their status is primarily established by treatment under the Tax Code. The Internal Revenue Service, for example, describes them as an organization created pursuant to statute that “performs governmental functions, but does not have the full powers of a government.” *What Are Government Entities and Their Federal Tax Obligations?*, IRS, <https://www.irs.gov/government-entities/federal-state-local-governments/government-entities-and-their-federal-tax-obligations> [<https://perma.cc/PEA3-HEX7>] (Apr. 23, 2024).

29. As we will see, authorizing open market operations in FHLB debt came later in the mid-1960s and was enacted by Congress over the objections of the Federal Reserve itself. See *supra* Section I.C.

30. SUSAN M. HOFFMANN & MARK K. CASSELL, MISSION EXPANSION IN THE FEDERAL HOME LOAN BANK SYSTEM 9 (2010).

31. A more precise definition is available at FRED, *supra* note 14.

32. HOFFMANN, *supra* note 30, at 2.

Figure 2. Assets of the Federal Home Loan Banks Relative to M2 and S&L Assets

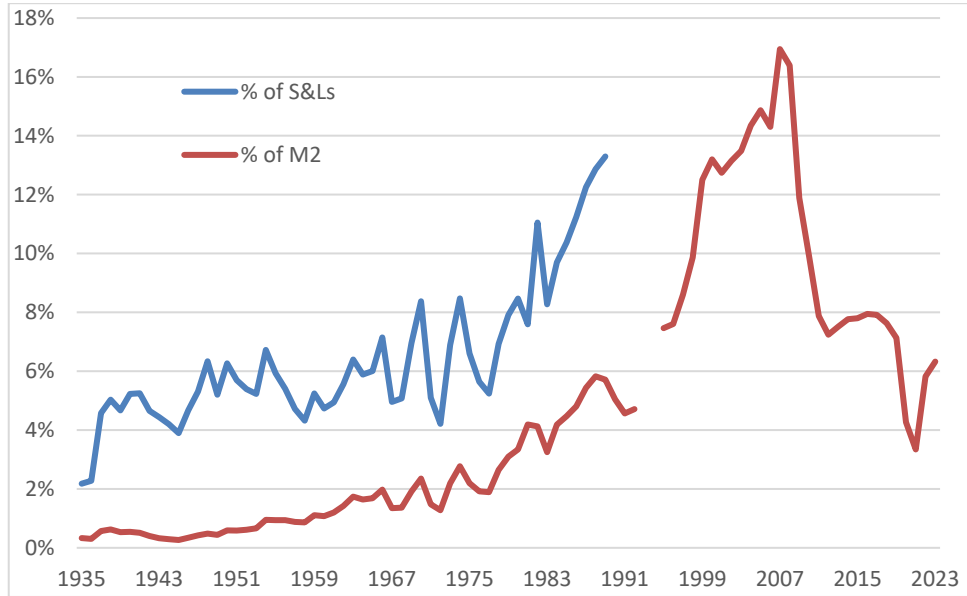
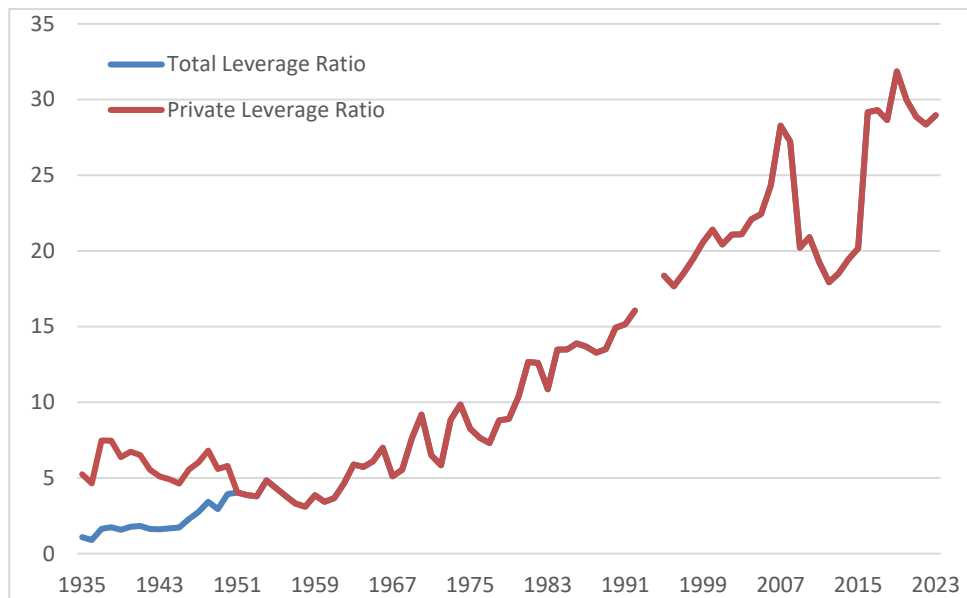


Figure 3. Leverage Ratios of the Federal Home Loan Banks



A related form of special purpose money creation is the MBS market. In essence, MBS constitute a pool of residential mortgage loans, which, after being bundled up and transformed into securities, can be more easily traded and held by a broader range of investors.³³ The market exploded into public consciousness during the GFC when a decline in the value of U.S. subprime mortgages precipitated a near collapse of the financial system.³⁴ The collapse itself was triggered by non-agency MBS, or MBS without implicit government backing or agency underwriting standards. However, the dramatic expansion and increasing complexity of MBS can arguably trace its origins to the first generation of those instruments in the 1970s. The development of that market allowed major non-bank financial institutions to play a large role in the provision of mortgage credit through securitizing mortgage loans and financing themselves in significant part through very short-term loans backed by those mortgages.³⁵ It was this conduit that allowed MBS to play a central role in shadow banking, and to evolve into the highly levered alphabet soup of instruments that, by the mid-2000s, was central to shadow banking. When mortgage prices declined, short-term lenders withdrew their financing *en masse*, quickly rendering major investment banks like Bear Stearns and Lehman Brothers unable to meet their obligations.³⁶

Drawing on prior historical work, we describe how the MBS market was *invented* by federal policymakers during the Johnson administration. In an effort to promote nationwide access to mortgages and home ownership, federal officials proposed new forms of financial engineering and backstopped them with federal guarantees. The centerpiece of the administration's proposal was a new type of security—the MBS—which would later play a major part in American capital markets. Creating the MBS market was a *project of federal policymakers*, and they successfully promoted its early growth and acceptance. Indeed, it was precisely their shadow bank-like qualities that attracted them to building this market. They reasoned that the more riskless and liquid these instruments seemed—the more money-like—the better this market would function.³⁷

33. Gary Gorton & Andrew Metrick, *Securitization*, in 2 HANDBOOK OF THE ECONOMICS OF FINANCE 1 (George Constantinides et al. eds., 2011).

34. *Id.*

35. *Id.*

36. See *infra* text accompanying notes 397–98.

37. Sarah Quinn offers incisive analysis of the origins of the MBS market and the late history of American mortgage finance. Sarah Lehman Quinn, *Government Policy, Housing, and the Origins of Securitization, 1780–1968* (2010) [hereinafter Quinn, *Origins of Securitization*] (Ph.D. dissertation, University of California, Berkeley) (on file with the University of California, Berkeley Digital Library); SARAH L. QUINN, *AMERICAN BONDS: HOW CREDIT MARKETS SHAPED*

The market for repos represents our last illustration of the symbiosis between federal economic policy and market actors. A repo is a form of short-term secured lending in which a borrower sells a security to a lender under an agreement to buy it back at a higher price.³⁸ Repos were quickly recognized as a convenient way for the Fed to support the trading of U.S. government debt securities (called “Treasuries”).³⁹ The federal debt had grown enormously during World War II, as had the degree of federal involvement in the Treasury market.⁴⁰ With the War’s end, the federal government sought to wean the market off Federal Reserve support by increasing the base of potential buyers for Treasury debt. Expanding that base required a well-functioning secondary market for trading Treasuries—a distribution mechanism to achieve broader and deeper ownership. The obstacle to that active market was a problem in the financing of the market-making dealers who facilitated Treasury trading. Dealers required continuous and reliable access cheap financing, but the market for bank-intermediated, short-term call loans imposed high costs. The Fed saw an urgent need to provide dealers with low-cost funding to ensure the public goal of a well-functioning Treasury market.

The Fed might have preferred to directly supply that funding through its statutory authority to lend to financial institutions.⁴¹ But dealers are not banks, and the Fed’s authority to lend to non-banks was largely limited to “unusual and exigent” circumstances.⁴² The solution was repo, which is technically a sale and not a loan, allowing the Fed to freely engage in the repo market.⁴³ Simply by participating, the Fed gave strong impetus to a significant reallocation of corporate cash holdings away from bank deposits and into repo. Access to a deep and broad pool of repo funding dramatically expanded the ability of dealers to intermediate the trading of Treasury securities. The

A NATION 192–93 (2019) [hereinafter QUINN, AMERICAN BONDS]. Bruce MacLaury, then-President of the Federal Reserve Bank of Minneapolis, noted of MBS that “the ultimate objective is to create securities that are indistinguishable from direct government debt, and yet still preserve some rationale for not counting the issues . . . against the Federal debt ceiling.” Bruce K. MacLaury, *Federal Credit Programs—The Issues They Raise*, in FEDERAL RESERVE BANK OF BOSTON, CONF. SERIES ISSUES IN FEDERAL DEBT MANAGEMENT 205, 210 (1973).

38. See *infra* Section I.B.

39. See *infra* Section I.B.

40. See *infra* text accompanying notes 190–93.

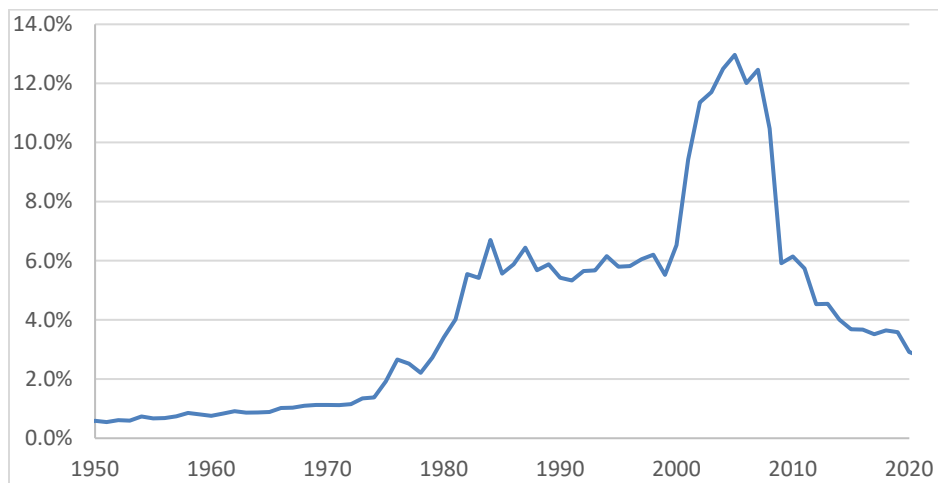
41. 12 U.S.C. § 347b(a) (originally enacted as the Glass-Steagall Act, ch. 58, sec. 2, § 10(b), 47 Stat. 56, 56–57 (1932)).

42. 12 U.S.C. § 343 (the now famous Section 13(3) of the Federal Reserve Act, as amended). For a review of the origins of this authority, see Parinitha Sastry, *The Political Origins of Section 13(3) of the Federal Reserve Act*, 24 ECON. POL’Y REV. 1, 1–33 (2018).

43. See *infra* text accompanying notes 216–27.

long-term effects on the Treasury market were transformative. Foreign investors increased from less than 2% in 1950 to 44% today.⁴⁴ As the Federal Reserve Bank of New York later explained, broad “participation in the [r]epo market” was a core element of internationalizing Treasuries.⁴⁵ Internationalization, in turn, not only reduced the cost of financing federal deficits, but helped cement the preeminent role of the dollar in the global financial system.⁴⁶ Figure 4 presents a time series of turnover in the repo market.⁴⁷

Figure 4. Daily Average Trading Volume in the Treasury Market Relative to Outstanding Stock



44. U.S. DEP'T OF THE TREASURY, ESTIMATED TOTAL FOREIGN HOLDINGS OF TREASURY SECURITIES, 1939–1999, https://treasury.gov/resource-center/data-chart-center/tic/Documents/fht_1939-1999.csv [<https://perma.cc/QL9U-8BJY>]. *Compare Federal Debt Held by Foreign and International Investors*, FRED, <https://fred.stlouisfed.org/series/FDHBFIN> [<https://perma.cc/LB4C-HXG8>] (data updated Mar. 2024), with *Market Value of Marketable Treasury Debt*, FRED, <https://fred.stlouisfed.org/series/MVMTD027MNFBDAL> [<https://perma.cc/HN5A-M4V2>] (data updated Feb. 2024).

45. Brief for the Federal Reserve Bank of New York as Amici Curiae at 10–11, *In re Lombard-Wall Inc.*, 23 B.R. 165 (No. 82 B 11556 (EJR)) (Bankr. S.D.N.Y. 1982) [hereinafter *Fed Amici*].

46. *Id.*

47. Turnover is calculated as gross trading volume of Treasuries in repo as a percentage of outstanding Treasuries. The data has been presented in previously co-authored work; we also rely on that analysis of the repo market. Lev Menand & Joshua Younger, *Money and the Public Debt: Treasury Market Liquidity as a Legal Phenomenon*, 2023 COLUM. BUS. L. REV. 224, 301 (2023).

Although different in their particulars, these four episodes have important elements in common. They show that private money is often not a pure product of private ordering, but the result of a complex type of public-private partnership. This arrangement is analogous to the “franchise”⁴⁸ or “joint venture”⁴⁹ frameworks that other authors have used to understand the relationship between the traditional banking system and the state. In addition to facilitating a dynamic and elastic banking system, this partnership allows shadow banks to issue liabilities that resemble “money” in many ways, including a certain degree of official support and backing.⁵⁰ Yet, in certain cases, by exercising some degree of control over how these privileges were administered, policymakers sought to further broad policy goals.

For those who doubt whether forms of market activity can profitably be understood as extensions of government policy, an analogy may be useful. In analyses of developed nations’ welfare states, the U.S. has long served as the counter-example—a large, wealthy country with a small, poorly funded welfare system.⁵¹ Beginning in the late 1990s, however, revisionist literature in political science persuasively showed that the U.S. welfare state was not so much small as “hidden, divided, submerged, delegated, invisible, [and] expensive.”⁵² Christopher Howard provided perhaps the single most powerful illustration in his famous book, *The Hidden Welfare State: tax expenditures*.⁵³ The U.S. government funds mortgages, charitable giving, and employer-provided healthcare not primarily through direct budgetary outlays, but through their conceptual equivalent—by *not* taxing private expenditures that they otherwise would.⁵⁴ In many other ways, political scientists have realized

48. Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1194–1201 (2017); Lev Menand, *Why Supervise Banks? The Foundations of the American Monetary Settlement*, 74 VAND. L. REV. 951, 975–80 (2021); Morgan Ricks, *Money as Infrastructure*, 2018 COLUM. BUS. L. REV. 757, 758–64.

49. Morgan Ricks, *Money and (Shadow) Banking: A Thought Experiment*, 31 REV. BANKING & FIN L. 731 (2012).

50. Ricks, *supra* note 2 at 3–4.

51. Monica Prasad, *American Exceptionalism and the Welfare State: The Revisionist Literature*, 19 ANN. REV. POL. SCI. 187, 187–88 (2016) (noting that because the American welfare state “functions through tax expenditures and public-private partnerships, it is less visible than welfare states that operate on the principle of direct spending”); *see also supra* note 452 and accompanying text.

52. *Id.* at 189.

53. CHRISTOPHER HOWARD, *THE HIDDEN WELFARE STATE: TAX EXPENDITURES AND SOCIAL POLICY IN THE UNITED STATES STATE* (Ira Katznelson et al. eds., 1997).

54. *Id.* at 3–4.

that the U.S. government manages its administrative state through indirect means and by conscripting market actors to serve public ends.⁵⁵

For these reasons we refer to the forms of specialized money creation facilitated by policymakers as the “hidden monetary state.” To be sure, our point is not that issuers of these instruments are direct instrumentalities of the federal government, but rather that they emerged as, and have often functioned as, *de facto* tools of federal policy. As a result, sharply distinguishing between them and federal policy, and treating shadow banking as a more pristine product of private, market forces, misses the institutional reality.

The seeds of much of the contemporary shadow banking system lie in these experiments. “Shadow banking” refers to financial intermediation that functions much like traditional banking (i.e., maturity transformation, liquidity transformation, and credit intermediation) but takes place outside the banking sector itself.⁵⁶ That puts it largely outside the reach of banking regulation and supervision—beyond the “bank regulatory perimeter,” to use a term of art.⁵⁷ Shadow banking has been at the center of numerous episodes of financial instability, most notably the GFC in 2008 and COVID market panic of 2020.⁵⁸ Shadow banking often develops out of special purposes monies, leveraging their implicit or explicit governmental backing to grow far beyond what might otherwise be possible.⁵⁹ In that sense, the “hidden monetary state” and shadow banking are not one in the same, but they are connected.

Our account also informs the posture regulators have taken regarding the shadow banking system. Many commentators have taken federal support for

55. *Id.*; Prasad, *supra* note 51, at 189.

56. See e.g., Gorton & Metrick, *supra* note 2, at 261–63; Gary Gorton et al., *The Run on Repo and the Fed’s Response*, 48 J. FIN. STABILITY (2020). Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Rsrv. Sys., Speech at the Russell Sage Foundation and The Century Foundation Conference on “Rethinking Finance,” New York, New York: Some Reflections on the Crisis and the Policy Response (Apr. 3, 2012), <https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm> [<https://perma.cc/J332-MTJ5>]; Zoltan Pozsar et al., *Shadow Banking*, FED. RES. BANK N.Y. ECON. POL’Y REV., Dec. 2013, at 1, 2.

57. See Gorton & Metrick, *supra* note 2, at 261–62.

58. Rajdeep Sengupta & Fei Xue, *The Global Pandemic and Run on Shadow Banks*, FED. RSRV. BANK KAN. CITY (May 11, 2020), <https://www.kansascityfed.org/research/economic-bulletin/global-pandemic-run-shadow-banks-2020/> [<https://perma.cc/S32U-W8S8>]; Gregg Gelzinis, *Strengthening the Regulation and Oversight of Shadow Banks*, AM. PROGRESS (July 18, 2019), <https://www.americanprogress.org/article/strengthening-regulation-oversight-shadow-banks/> [<https://perma.cc/ND7J-U5UE>].

59. Gorton & Metrick, *supra* note 2, at 270–76.

the shadow banking system to be a result of its “too big to fail” status.⁶⁰ This is, however, often an ahistorical understanding or, worse, an inversion of the historical reality. Much of the shadow banking system appears to have grown to its meaningful, systemically important size in large part because it enjoyed implicit or explicit federal support.⁶¹ Without such support, it is difficult for debt to obtain money-like status, at least for any extended period of time.

The cumulative result of these experiments is a massive, complex, and heterogeneous ecology of competing and interacting money-like instruments. For us, the complexity and unwieldiness is, in a sense, the point. It provides a dose of realism about the complicated political economy of the American monetary system.

In fact, appreciating the history calls a variety of widely held academic narratives into question. It casts some doubt on the plausibility of aspiring to fully centralize and coordinate the federal government’s control over the monetary system. It also raises questions about the ability of federal policymakers to control how the special purpose monies they create evolve.

We also gesture at some of the broader lessons of these experiments. This account of the history of shadow banking has important lessons to teach us about today’s special purpose monies, about how it might be reformed, and about how policymakers should approach newly emerging forms of shadow banking. For example, our account allows us to evaluate the indirect use of shadow banking *as policy*, that is, its success and failure as an instrument of statecraft.⁶² In general, the three forms of shadow banking we study prove *less visible, more complex, and more regressive* than direct U.S. monetary and fiscal policy.

Alongside seeing new costs, our account also shows that there are important benefits to shadow banking that are often missed. Because the conventional history of shadow banking views it as emerging from market forces, that history leads to a normative calculus that contrasts social costs with private benefits: financial instability imposes broad harms on society, but the benefits of shadow banking accrue solely to the financial sector.⁶³ This is not quite accurate. We discuss specific ways in which shadow banking serves certain U.S. interests more widely, as Eurodollars facilitate a global dollar-based financial system, or the repo market acts as a powerful channel

60. See generally Emerich Gutter, IX, *Too-Big-To-Fail and the Financial Stability Oversight Council*, 30 REV. BANKING & FIN. L. 73 (2010).

61. *Id.* at 73.

62. These features are shared more broadly with the institutions studied by the literature on the “hidden” welfare state. See Prasad, *supra* note 51, at 191–92.

63. See generally *id.*

of monetary policy transmission. The bottom line is that a sound understanding of the nature of shadow banking, and of all the costs and benefits it creates, has been hindered by an incomplete narrative of its historical genesis and causes.

It is worth emphasizing that appreciating public policy's role in the origins of shadow banking does not change the optimal regulatory posture. The institutions of shadow banking have been, during times of instability, profoundly run-prone.⁶⁴ They impose significant costs on society even when they can be stabilized, and truly enormous costs when they precipitate a crisis.⁶⁵ Seeing some of their underappreciated benefits does not mean the tradeoffs tip in their favor, only that we can better appreciate the stakes.

Given the many costs of shadow banking, why were such tools attractive in the first place? Here, our answer is a simple one. When more direct interventions appeared impracticable for political or legal reasons, these indirect tools became attractive.⁶⁶ Yet this origin has an important lesson for the political economy of shadow banking and the prospects for reform. As we discuss, monetary officials' use of shadow banking for public ends means that there are obstacles to reforming shadow banking that go beyond industry resistance or regulatory capture.⁶⁷

Lastly, how to approach new forms of shadow banking remains the subject of considerable debate. The most recent example of shadow banking lies in the rise of stablecoins. A stablecoin is a digital asset that is often designed to trade at the same value as a unit of fiat currency, like the U.S. dollar. Usually, they are also backed by a claim on a pool of short-term, low-risk financial assets.⁶⁸ Regulators clearly recognize the risks of stablecoins,⁶⁹ as well as

64. Zoltan Pozsar et al., *supra* note 56, at 1–3.

65. *Id.*

66. *See infra* notes 452–53 and accompanying text.

67. *See infra* Section I.B.

68. There are several different flavors of stablecoin, including crypto-backed, commodity-backed, algorithmic, and fiat asset-backed. Mike Antolin & Toby Bochan, *Fiat-Backed Stablecoins: What You Need to Know About Tether, USD Coin and Others*, COINDESK (Mar. 22, 2023), <https://www.coindesk.com/learn/fiat-backed-stablecoins-what-you-need-to-know-about-tether-usd-coin-and-others/> [<https://perma.cc/2MWC-NZM4>]. Fiat asset-backed arrangements, in which a reserve account holds assets to back tokens, is by far the most popular. *Id.* The two largest stablecoin issuers (Tether and Circle) use this format and constitute nearly 90% of outstanding float. *Top Stablecoin Tokens by Market Capitalization*, COINMARKETCAP <https://coinmarketcap.com/view/stablecoin/> [<https://perma.cc/W389-MC8D>].

69. *See generally* U.S. DEP'T OF THE TREASURY, THE FUTURE OF MONEY AND PAYMENTS (2022); PRESIDENT'S WORKING GRP. ON FIN. MKTS., FDIC & OFF. COMPTROLLER CURRENCY, REPORT ON STABLECOINS, at 12–14 (2021) [hereinafter STABLECOINS REPORT].

their demonstrated potential for exponential growth.⁷⁰ Yet, in an echo of our analysis, regulators also appreciate that stablecoins could further broad policy goals of “faster, more efficient, and more inclusive payments.”⁷¹ Our historical account offers potentially useful lessons for regulators as they consider how to address stablecoins.

This piece is also a kind of companion to other work by one of us. That work documented the extent to which American public finance, particularly the market for Treasuries—marketable debt securities of the federal government—had been historically intertwined with the American monetary framework.⁷² Specifically, the liquidity of Treasuries was in significant measure a legal phenomenon—a product of easy convertibility between Treasuries and cash engineered by the federal government, rather than simply a product of market forces and private ordering.⁷³ This project continues to show the intertwinement of American public finance, especially mortgage finance, and the dollar’s global role, with the national monetary framework.

The paper proceeds as follows. Part I describes “the hidden monetary state” by analyzing the important role played by federal policymakers in the early growth of the Eurodollar, the FHLBs, MBS, and repo markets. Part II discusses the lessons of this account for understanding the past of shadow banking, appreciating its contemporary structure, and more effectively regulating it in the future. We then conclude.

I. UNDERSTANDING THE HIDDEN MONETARY STATE

Our principal historical claim concerns the origins and growth of major forms of shadow banking as part of deliberate federal projects. In this Part, we provide four case studies of how special purpose monies originated or were transformed by the intervention of federal policymakers. In Sections I.A and I.B, we focus on U.S. monetary officials’ pivotal role in the growth of the Eurodollar market and repo market, respectively. In Sections I.C and I.D, we discuss monetary experiments ultimately aimed at promoting home finance in the U.S. Section I.C discusses the FHLBs. Section I.D addresses how officials in the Johnson administration invented the modern MBS market and successfully promoted its early growth. Together, the case studies show vividly how principal forms of shadow banking exist *because* federal

70. STABLECOINS REPORT, *supra* note 69, at 14.

71. *Id.* at 1; U.S. DEP’T OF THE TREASURY, *supra* note 69.

72. Menand & Younger, *supra* note 47.

73. *Id.* at 230.

policymakers promoted their creation or growth in pursuit of national economic ambitions.

A. The Eurodollar Market: Promoting Global Dollar Dominance

Eurodollars are bank deposits at commercial banks outside U.S. jurisdiction *denominated in U.S. dollars*.⁷⁴ Just like dollars issued by American banks, they can be used as a store of value and medium of exchange.⁷⁵ They are, in that sense, identical to an ordinary dollar-denominated bank account in a U.S. bank. As Milton Friedman described it in a more “homely parallel,” the relationship between Eurodollars and domestic dollars is analogous to the difference between “New York dollars” and “Chicago dollars”—both can be held by residents and non-residents alike and owe their creation to the “magic of fractional reserve banking . . . the bookkeeper’s pen at work.”⁷⁶

There is, however, a key difference between Eurodollars and “Chicago dollars.” Eurodollars exist outside the reach of U.S. law and regulators.⁷⁷ They do not enjoy the various government supports given to money issued by domestic banks.⁷⁸ They are not, for instance, insured by the Federal Deposit Insurance Corporation (“FDIC”), nor do their issuers have direct access to dollar-based central bank liquidity at the Federal Reserve.⁷⁹ They are bank accounts that, in some respects, function like an ordinary U.S. bank account but in other respects are estranged from the institutional relationships with U.S. monetary authorities that exist for domestic U.S. bank accounts. Eurodollars are, in a formal sense, on their own.⁸⁰

But that is not entirely true in practice. Shortly after their emergence in the 1950s, the Fed recognized the potential for Eurodollars to further a broader policy goal: the construction of a global dollar system, of a financial and trading system based on the U.S. dollar. Establishing and entrenching the dollar as the global reserve currency (i.e., the currency typically held in

74. Milton Friedman, *The Euro-Dollar Market: Some First Principles*, FED RSRV. BANK ST. LOUIS REV., July 1971, at 17.

75. John H. Makin, *Demand and Supply Functions for Stocks of Euro-Dollar Deposits: An Empirical Study*, 54 REV. ECON. & STATS. 381, 381 (1972).

76. Friedman, *supra* note 74, at 18–19.

77. James Chen, *Eurodollar: Definition, Why It’s Important, and Example*, INVESTOPEDIA (Jan. 31, 2021), <https://www.investopedia.com/terms/e/eurodollar.asp> [<https://perma.cc/7R88-LY4B>].

78. *Id.*

79. *Id.*

80. *Id.*

central bank reserves) and the medium of exchange for international trade offered enormous benefits along a range of dimensions—from economic and fiscal policy⁸¹ to national security.⁸² It was, in the words of the French, an “exorbitant privilege.”⁸³

To further that goal, over roughly fifteen years starting in the early 1960s, the Fed took deliberate and significant steps to support the growth and development of the Eurodollar market.⁸⁴ In that sense, Eurodollars, like repo and other aspects of shadow banking, are not a cancer on the financial system that emerged from unchecked (or insufficiently checked) market forces because it was left unchecked; Eurodollars grew because they were, in part, a political project that furthered broader policy goals. To see this, one must begin with the early history of Eurodollars.

Eurodollars are an outgrowth of the early years of the Cold War. Declassified intelligence from the Central Intelligence Agency shows that, as early as 1949, the United Soviet Social Republic (“U.S.S.R.”) moved dollar balances from New York to Europe to reduce the risk that American authorities might seize those accounts.⁸⁵ They placed these funds in banks across the Continent and London, but especially in the Banque Commerciale pour l’Europe du Nord (“BCEN”).⁸⁶ It is, in fact, from BCEN’s telex signifier (“EURBANK”) that Eurodollars derive their name.⁸⁷

This first generation of Eurodollars was small because there were few uses for dollar-denominated accounts outside the U.S. The assets supported by Eurodollars consisted primarily of lending related to financing the trade of

81. See STEPHANIE E. CURCURU ET AL., ON RETURNS DIFFERENTIALS (2013), <https://www.federalreserve.gov/pubs/ifdp/2013/1077/ifdp1077.pdf> [<https://perma.cc/CHH4-N5DM>].

82. NICHOLAS MULDER, THE ECONOMIC WEAPON: THE RISE OF SANCTIONS AS A TOOL OF MODERN WAR 115 (2022).

83. BARRY EICHENGREEN, EXORBITANT PRIVILEGE: THE RISE AND FALL OF THE DOLLAR AND THE FUTURE OF THE INTERNATIONAL MONETARY SYSTEM 4 (2011). Empirically, perhaps the most familiar manifestation of this privilege is that dollar safe assets pay lower interest rates than other assets. See Gita Gopinath & Jeremy C. Stein, *Banking, Trade, and the Making of a Dominant Currency*, 136 Q.J. ECON. 783, 785 (2021).

84. See *infra* notes 127–29.

85. CIA, CIA-RDP78-01617A000400130001-9, EXTERNAL FINANCING OPERATIONS OF THE USSR AND THE SATELLITES at 1–2 (1949).

86. CIA, CIA-RDP08S01350R000601990001-2, SOVIET-OWNED BANKS IN THE WEST at 3 (1969); Ioan Achim Balaban, *The Establishment of the Eurodollar Market in Paris and the Failure of Regulation and Reform, 1959–1964*, BUS. HIST., Apr. 26, 2023, at 2, <https://www.tandfonline.com/doi/full/10.1080/00076791.2023.2202909>.

87. Gary Burn, *The State, the City and the Euromarkets*, 6 REV. INT’L POL. ECON. 225, 229 (1999).

goods across the Iron Curtain.⁸⁸ Owing to a deliberate policy of self-reliance across the Soviet Bloc, these flows were very limited.⁸⁹ For Eurodollars to become a global market it needed both sources to supply funds to banks (depositors) and uses for those banks (opportunities for lending).⁹⁰ In the highly restricted and controlled world of post-War foreign exchange, that was unlikely.

The first important development came in the closing weeks of 1951, when the U.K. reopened the London Foreign Exchange Market, which had been closed since 1939.⁹¹ Critically, the reopened market for trading currencies was also liberalized in other important respects. U.S. dollars and British pounds could trade freely for a broad swath of contracts, and banks were authorized to trade actively for their own accounts.⁹² That flexibility opened up an entirely new use for Eurodollar borrowings that was certainly less legally fraught, more scalable, and more economically compelling than helping Soviet apparatchiks evade Western sanctions. Banks could now profit from making markets for currency exchange resulting from imbalances in trade between U.S. and U.K. merchants.⁹³

Eurodollars were a compelling means by which to borrow foreign currency in this way. By the spring of 1954, after further liberalization of foreign exchange trading, *The Economist* reported more than \$100 million of “foreign money temporarily employed [in London] on arbitrage operations.”⁹⁴ These flows accelerated as London-based banks found they could easily source dollar funding by offering much higher rates of remuneration than their highly restricted American counterparts.⁹⁵ A year

88. *Id.* at 4.

89. A State Department estimate found \$1.7 billion of net exports from the non-Communist West to Soviet Bloc countries in 1950. U.S. DEP’T OF STATE, OFF. OF THE HISTORIAN, NSC NO. 104, U.S. POLICIES AND PROGRAMS IN THE ECONOMIC FIELD WHICH MAY AFFECT THE WAR POTENTIAL OF THE SOVIET BLOC 12 (1951).

90. Robert Hockett and Saule Omarova term this the ‘credit creation’ channel of banking as a franchise arrangement with the state. Hockett & Omarova, *supra* note 48, at 1198.

91. Money Market Editor, *Foreign Exchange Market Reopens*, FIN. TIMES, Dec. 17, 1951, at 8; BANK FOR INT’L SETTLEMENTS, TWENTY-SECOND ANNUAL REPORT 136–38 (1952).

92. *The Foreign Exchange Market*, ECONOMIST, Dec. 22, 1951, at 1538.

93. Although still true to a great extent today, *The Economist* described this dynamic as it existed in the late 1950s. *Hot Money and the Reserves*, ECONOMIST, Mar. 1, 1958, at 776.

94. *More Gold Flows In*, ECONOMIST, Apr. 10, 1954, at 137. There are reports of accelerated inflows from New York (presumably referring to dollars) and associated demand for forward Sterling (likely associated with interest rate arbitrage) around the same time. Money Mkts. Ed., *Growing Demand for Sterling*, FIN. TIMES, May 1, 1954, at 1.

95. The most important constraint on American banks was Regulation Q, a depression era rule that limited the rate they could pay on deposits. R. Alton Gilbert, *Requiem for Regulation Q: What It Did and Why It Passed Away*, FED. RSRV. BANK ST. LOUIS REV., Feb. 1986, at 22. U.S.

later, dollars were flowing into London at a rate of nearly \$150 million over just three months.⁹⁶

Over the next few years, a handful of important developments produced a significant acceleration in these U.S. dollar inflows to London. The first was in 1958 with the restoration of full convertibility among European currencies—essentially a return to a free market in foreign exchange.⁹⁷ The second was a decision by U.K. authorities to substantially widen the range of commercial activities for which they allowed hedging in FX markets.⁹⁸ The third was a dramatic acceleration in global trade flows across a wide range of countries.⁹⁹ The result was a much more diverse set of potential uses for dollar-denominated liabilities among foreign banks, particularly in trade finance. Fourth, a rise in short-term U.S. dollar market interest rates relative regulatory caps on the rates U.S. domestic banks could pay their depositors¹⁰⁰ motivated savers to go abroad in search of higher returns.¹⁰¹ Finally,

banks were also subject to reserve requirements and deposit insurance premiums that limited the rate they could pay on depository liabilities.

96. See *Foreign Money in London*, ECONOMIST, June 4, 1955, at 867.

97. Paul Bareau, *World Flow of Capital: Less Control and Sounder Investment*, FIN. TIMES, July 25, 1960, at 28.

98. *Bank of England Eases Foreign Exchange Rule*, WALL ST. J., Mar. 23, 1959, at 6.

99. BANK FOR INT'L SETTLEMENTS, THIRTY-FIRST ANNUAL REPORT 44 (1961).

100. We are referring, of course, to the infamous 'Regulation Q,' which was implemented by the Fed in the 1930s to mitigate race-to-the-bottom competition among domestic commercial banks by imposing regulatory ceilings on the rates they could pay depositors. See, e.g., Gilbert, *supra* note 95; Jürgen Eichberger & Ian R. Harper, *On Deposit Interest Rate Regulation and Deregulation*, 38 J. INDUS. ECON. 19 (1989).

101. Although the Fed raised Regulation Q limits effective January 1957, they remained well below the rates of remuneration available from other short-term money-like instruments such as Treasury bills. In that sense, Regulation Q can be said to have been 'binding' from about early 1957 to early 1960. That dynamic persisted until the first half of the 1960s, during which the Fed tended to raise deposit rate ceilings to keep pace with increases in market interest rates. Jimmie R. Monhollon, *Regulation Q: An Instrument of Monetary Policy*, FED. RSRV. BANK RICH. REV., July 1970, at 2. When Regulation Q is binding, it creates a strong incentive for U.S.-based savers to find short-term investments yielding closer to market rates outside the domestic banking system. Later scholars have cited this dynamic as a key early catalyst for the growth of Eurodollars, which were out of scope of Regulation Q and therefore could be offered with rates above those ceilings. See, e.g., SUSAN STRANGE, INTERNATIONAL MONETARY RELATIONS 180–81 (1976). Some contemporaries cited this dynamic as a key factor driving the early formation and growth of the Eurodollar market. J. ECON. COMM., 87TH CONG., ECONOMIC REPORT OF THE PRESIDENT WITH MINORITY AND OTHER VIEWS 21 (J. Comm. Print 1962) (noting outbound U.S. savings in search of higher returns); *Higher Interest Rates on the Time Deposits of Foreign Governments: Hearings on H.R. 12080 12, 18 Before the Comm. on Banking and Currency*, 87th Cong. 18 (1962) [hereinafter *Higher Interest Rates*] (statement of Robert Roosa, testifying in his capacity as Undersecretary of the Treasury for Monetary Affairs, arguing the Euro-dollar market "probably never would have developed in the form in which it did if the Federal Reserve Board had had the power to raise limits selectively and thereby deter the growth of this so-called special

Eurodollars were simply more convenient for use in dollar-based foreign payments, in no small part reflecting the operational concerns such as collateral management across differing time zones,¹⁰² not to mention the relative lack of efficient, real-time transatlantic communications infrastructure.¹⁰³

By the late 1950s, London-based branches of overseas banks dominated the issuance of Eurodollars and a relatively small fraction (15% as of 1960) swapped back into Sterling for local deployment.¹⁰⁴ By 1960, Eurodollars were, in *The Economist's* words, a “very well organised” market of \$1 billion to \$2 billion.¹⁰⁵

A billion-dollar number caught the attention of the Federal Reserve Bank of New York.¹⁰⁶ The New York Fed sent two senior officials on a fact-finding

market abroad”). David Rockefeller, President of the Chase Manhattan Bank, and David L. Grove, Vice President at Bank of America, expressed a similar view at the same hearing. *Id.* at 64–65, 71–72.

102. Fred H. Klopstock, *The International Money Market: Structure, Scope and Instruments*, 20 J. FIN. 182, 198 (1965) (discussing the “ease and convenience of placing funds in commercial banks” as a major factor driving the growth of the Eurodollar market). Relative to relying on New York banks, which were only open for part of the European day, it was “much simpler to lay off funds with a few banks in Europe that are continuously in the market.” *Id.*

103. The first transatlantic telephone cable, TAT-1, was completed in September 1956 with thirty-six open circuits. Homer Bigart, *First Call Made by Cable to Europe*, N.Y. TIMES, Sept. 26, 1957, at 1–2. A second was completed three years later, roughly doubling capacity. Will Lissner, *Paris is Ready—Opens Phone Link*, N.Y. TIMES, Sept. 23, 1959, at 1. With only a few dozen open lines available at any given time, transatlantic phone calls could be subject to hours long wait times as users queued up waiting for open circuits. Scott Welch, *Was It Possible to Make a Phone Call from Germany to the U.S. in 1946?*, SLATE (Nov. 14, 2014), <https://slate.com/human-interest/2014/11/was-it-possible-to-make-a-phone-call-from-germany-to-the-u-s-in-1946.html> [<https://perma.cc/6BMJ-URUX>]. Service could also be severely delayed or suspended entirely for weeks due to cable damage, which was not uncommon. There were several significant such incidents in the late-1950s and early-1960s. *See U.S. Note to Soviet Union on Breaks in Trans-Atlantic Cables*, N. Y. TIMES, Mar. 23, 1959; *Ocean Phone Cable Repaired*, N.Y. TIMES, Nov. 19, 1959; *Trans-Atlantic Cable Breaks*, N.Y. TIMES, Apr. 17, 1960; *Trans-Atlantic Calls Delayed*, N.Y. TIMES, Dec. 5, 1960; *Ice May Have Cut Cable off Canada*, N.Y. TIMES, Mar. 25, 1961; Ira Henry Freedman, *Ice Field Delays Repair of Cable*, N.Y. TIMES, Mar. 31, 1961; *see also* Jill Hills, *Regulation, Innovation and Market Structure in International Telecommunications: The Case of the 1956 TAT1 Submarine Cable*, 49 BUS. HIST. 868 (2007).

104. Schenk, *supra* note 13, at 230–31.

105. *A Billion Eurodollars*, ECONOMIST, Nov. 19, 1960, at 817.

106. The New York Fed was initially approached by the Commission on Money and Credit but found that the Federal Reserve had “an interest in this field and a responsibility for keeping fully informed” and preferred that trip occur under the auspices of the central bank. BD. OF GOVERNORS OF THE FED. RESRV. SYS., MEETING MINUTES FOR MAY 43, at 3–4 (1960), <https://fraser.stlouisfed.org/title/minutes-board-governors-federal-reserve-system-821/meeting-minutes-may-4-1960-515514> [<https://perma.cc/92Q9-Z8DA>]. The Commission on Money and Credit was a private sector effort to study the monetary system and make recommendations for

mission to Europe, and they reported back that dollars were indeed being manufactured outside the U.S., principally in Paris and London.¹⁰⁷ Fatefully, rather than chafe at this violation of U.S. monetary sovereignty, they were intrigued. The officials observed that the availability of offshore deposits—*of U.S. dollar bank accounts outside U.S. territory and law*—had made the dollar “more useful,” which “added to the importance of the dollar as an international currency.”¹⁰⁸

More immediately, Eurodollars yielding relatively high rates of interest provided an attractive outlet for excess dollars held abroad among net exporter countries as well as an alternative but still dollar-based capital market. Both offered U.S. policymakers flexibility in managing the American balance of payments. They were particularly concerned about global demand for non-monetary gold generating price distortions that drained U.S. reserves and threatened the stability of the dollar system.¹⁰⁹ That vicious cycle had one incoming senior official of the Kennedy Administration “scared to death,”¹¹⁰ and the President himself saw the potential collapse of the international monetary system as a threat second only to nuclear war.¹¹¹

One potential solution was direct capital controls to restrict the movement of dollars across U.S. borders and forcibly stem the tide. Such a heavy-handed approach was, however, seen as ideologically fraught and too potentially damaging to domestic economic activity, and was summarily

its improvement. It received national attention, including the personal and public appreciation of President Kennedy. President John F. Kennedy, *Remarks to the Members of the Commission on Money and Credit*, AM. PRESIDENCY PROJECT (June 19, 1961), <https://www.presidency.ucsb.edu/documents/remarks-the-members-the-commission-money-and-credit> [<https://perma.cc/U6GE-HCVE>].

107. Alan R. Holmes & Fred H. Klopstock, *The Market for Dollar Deposits in Europe*, 42 FED. RESRV. BANK N.Y. MONTHLY REV. 197, 197 (1960).

108. *Id.* at 201.

109. CHARLES A. COOMBS, *THE ARENA OF INTERNATIONAL FINANCE* 1–15 (1976). President Kennedy highlighted this risk as one of his key policy priorities in his first State of the Union Address. President John F. Kennedy, Annual Message to the Congress on the State of the Union (Jan. 30, 1961).

110. Joseph W. Barr, Chairman, Fed. Deposit Ins. Corp., *The Background of the Interest Equalization Tax Proposal* 3 (July 20, 1964).

111. Arthur Schlesinger, a historian special assistant to Kennedy throughout his short Administration, later recalled, “[t]he balance of payments remained a constant worry to Kennedy. . . . He used to tell his advisers that the two things which scared him most were nuclear war and the payments deficit.” ARTHUR M. SCHLESINGER JR., *A THOUSAND DAYS: JOHN F. KENNEDY IN THE WHITE HOUSE* 654 (1965). He once reportedly quipped, “What really matters . . . is the strength of the currency . . . Britain has nuclear weapons, but the pound is weak, so everyone pushes it around.” *Id.*

rejected by the President.¹¹² Instead, the Administration searched for a more indirect means to address what increasingly referred to as the “balance of payments problem.” They sought to maintain the vibrance and reach of the global dollar system but reduce the need for that system to support itself by drawing on domestic U.S. dollars and, by extension, the U.S. stockpile of monetary gold. Technocrats identified Eurodollars as a potentially useful tool to do just that—a means by which to impose some capital controls without severely adverse impacts.¹¹³

The operative question, however, was whether the Eurodollar market could scale to accommodate a sufficient share of U.S. dollar capital markets activity. Offshore banks offering dollar-denominated deposits had one critical advantage: they were relatively unconstrained by regulations and other costs compared to U.S. domestic depositories.¹¹⁴ “Eurobanks” could, as a consequence, operate on thinner margins than their American counterparties, offering higher rates to depositors and lower rates to borrowers. That allowed them to attract funds from New York and other money centers. It also led to a reallocation of foreign savings away from local currency and quasi-monetary (e.g., gold) investments.¹¹⁵

112. In a Special Message to Congress in July 1963, Kennedy argued direct capital controls would amount to “damaging the economy of every free nation” and were “contrary to our basic precept of free markets. We cannot take this route.” President John F. Kennedy, Special Message to the Congress on Balance of Payments (July 18, 1963).

113. Anthony M. Solomon, *Foreign Investment Controls: Policy and Response*, 34 LAW & CONTEMP. PROBS. 118, 120–21 (1969). Solomon was Assistant Secretary of State for Economic Affairs from 1963 to 1968.

In short, the investment program appears to be working as we had hoped it would, not by checking desirable expansion but by shifting the source of financing to countries with strong balance of payments and reserve positions, mainly European countries. . . . The history of the past five years would indicate that the scope of the Euro-currency market for providing both short and long-term funds is extraordinary and growing wider, faster, and larger. It has widened sources of capital available to borrowers of all nationalities and broadened the array of investment opportunities for foreign lenders.

Id.; see also Paul Einzig, *Some Recent Changes in the Euro-Dollar System*, 19 J. FIN. 443, 445 (1964); Fred H. Klopstock, *Impact of Euro-Markets on the United States Balance of Payments*, 34 LAW & CONTEMP. PROBS. 157, 170 (1969).

114. Bank deposit rates in the U.S. were limited by Regulation Q, which was introduced during the Great Depression to ward off races to the bottom to attract market share. As offshore institutions, Eurodollar issuers were not in-scope of those caps. Gilbert, *supra* note 95, at 26.

115. Wright Patman articulated this logic in a 1962 hearing related to providing exemptions from Regulation Q ceilings on rates paid on deposits held by foreign governments and other official institutions. “The hope and intention of this bill was to find a way to discourage foreign purchases of our gold without having to raise interest rates across the board. As you know, the

But that flexibility came at a cost. As pure offshore institutions, foreign bank issuers of dollar-denominated deposits lacked the central bank backstop and insurance coverage that protected their domestic counterparts, leading market participants to view Eurodollars as decidedly risky and potentially unstable.¹¹⁶ Higher levels of risk suggested deposits would presumably—if not initially¹¹⁷ then eventually—demand higher yields as compensation. In that sense, it was not so much whether Eurodollar issuers *could* pay higher rates to their depositors, but whether they *would have to pay rates so high* that it made lending uneconomic.¹¹⁸ What the market needed, if it was to grow, was security from the willingness and ability of the official sector to provide liquidity during times of stress. In other words, it needed a lender of last resort.

There were a range of legal concerns, however, standing in the way of the Fed lending to foreign banks that offer U.S. dollar accounts. In principle, Fed loans could be justified under section 13(3) of the Federal Reserve Act as extensions of credit to non-banks, but would then only be available under “exigent circumstances” provided the Board could produce “evidence” that the borrowers were “unable to secure adequate credit accommodations from other banking institutions.”¹¹⁹ As with repo in the 1950s, it was much easier to argue that swaps were, from a strictly legal standpoint, two open market operations—one in spot FX markets, the other in forwards. Those were authorized under section 14 with few restrictions.¹²⁰ In a late 1961 memo, the Fed’s General Counsel, Howard Hackley, argued that there was “no legal

idea was that by permitting U.S. banks to pay foreign governments a higher interest rate on their deposits than these banks may pay other depositors, those governments might be encouraged to leave their surplus dollars on deposit rather than using them to buy our gold.” See *Higher Interest Rates*, *supra* note 101, at 133. Bill Martin agreed with Patman’s logic several times during his testimony, although with some additional caveats. *Id.* at 81–82, 102, 105. Douglas Dillon, Secretary of the Treasury later applied it to Eurodollars only a few months later. *Recent Changes in Monetary Policy and the Balance-of-Payments Problems: Hearings Before the H. Comm. on Banking & Currency*, 88th Cong. 153 (1963) (“By increasing the usefulness of the U.S. dollar in international markets, it [the Eurodollar market] has tended to . . . [diminish] the pressure on the U.S. gold stock.”). For a more comprehensive summary of Regulation Q, see Gilbert, *supra* note 95.

116. Einzig, *supra* note 113, at 446–47; Julien-Pierre Koszul, *Euro-Dollar Market Risky but Likely to Last*, EURO. CMTY., Aug. 1964, at 8.

117. Paul Einzig, a well-known financial journalist and observer of the Eurodollar market at the time, noted a surprising level of complacency around liquidity risk among depositors. See Einzig, *supra* note 116, at 446–47.

118. See *id.*; Julien-Pierre Koszul, Director-General of Foreign Services at the Banque de France, came to a similar conclusion around the same time. Koszul, *supra* note 116, at 8–9.

119. 12 U.S.C. § 343(3)(A).

120. *Id.* § 353.

question” as to this being an appropriate interpretation.¹²¹ That conclusion was critical, because the Board itself had argued that the Reserve Banks were only authorized to open foreign bank accounts for conducting section 14 open market operations.¹²² Hackley also cited the precedent of a swap line set up with the Bank of England in 1925 with the full knowledge of Congress.¹²³ Taken together, he argued the Board’s proposed foreign exchange operations were “consistent with the law.”¹²⁴

Armed with Hackley’s memo, the Federal Open Market Committee (FOMC) approved swap operations in February 1962¹²⁵—although not without considerable internal debate.¹²⁶ The FOMC sent Charlie Coombs, who had recently been placed in charge of foreign exchange operations for the New York Fed, to negotiate a series of reciprocal currency agreements with foreign central banks.¹²⁷ The arrangements Coombs negotiated paired spot and forward transactions to replicate the loan of one currency collateralized by an equivalent amount (at the start of the trade, at least) of another. They allowed the Fed to send new dollars abroad to other central banks, which could in turn lend them out to their own local banking system. Although the Fed was wary of being publicly associated with supporting the Eurodollar market, they set up a swap line with the Bank for International

121. Memorandum from Howard H. Hackley to the Federal Open Market Committee, Legal Aspects of Proposed Plan for Federal Reserve Operations in Foreign Currencies 148 (Nov. 22, 1961).

122. *Id.* at 145.

123. FED. RSRV. BD., TWELFTH ANNUAL REPORT OF THE FEDERAL RESERVE BOARD COVERING OPERATIONS FOR 1925, at 2, 12–14 (1926). Hackley argued specifically that, because Congress was fully informed as to the fact that while the swap line with the Bank of England might be used for purposes other than purchases of foreign bills of exchange, the fact that they took no action was evidence of intent. He therefore concluded that, at a minimum, the Section 14(e) restrictions should be interpreted as requiring only that foreign bank accounts be reasonably expected to potentially, but not certainly or exclusively, deal in foreign bills of exchange. Hackley, *supra* note 121, at 147.

124. Hackley, *supra* note 121, at 144.

125. FED. OPEN MKT. COMM., MEETING MINUTES FOR FEBRUARY 13, at 82–86 (1962).

126. Robert L. Hetzel, *Sterilized Foreign Exchange Intervention: The Fed Debate in the 1960s*, FED. RSRV. BANK. RICH. ECON. Q., Spring 1996, at 21, 31–38; Michael D. Bordo et al., *U.S. Intervention During the Bretton Woods Era, 1962-1973*, in STRAINED RELATIONS: US FOREIGN-EXCHANGE OPERATIONS AND MONETARY POLICY IN THE TWENTIETH CENTURY 137–48 (Bordo et al. eds., 2015).

127. FED. OPEN MKT. COMM., MEETING MINUTES FOR JANUARY 23, at 40–41 (1962), <https://www.federalreserve.gov/monetarypolicy/files/fomchistmin19620123.pdf> [<https://perma.cc/4H7K-VQ7J>].

Settlements (“BIS”) specifically for this purpose.¹²⁸ Not only was it used frequently in the mid-1960s, but often at the Fed’s direction.¹²⁹ In that sense, these arid sounding agreements represented the extraordinary decision by U.S. officials to indirectly backstop the issuance of dollar deposits by foreign banks.

The swap lines thus constituted an arm’s length type of bank lending facility—not a direct extension of Federal Reserve credit to foreign banks, but (assuming it was used) a de facto source of official liquidity¹³⁰ when markets were tight.¹³¹ As Coombs once described it to the FOMC, swap lines were “a painless way for the System to join with other central banks in dealing with the problem of restoring liquidity to the Euro-dollar market.”¹³² Kennedy himself highlighted the burgeoning central bank swap network (he called them “reciprocal credit arrangements”) as an important means by which to “meet instantly any disruptive disturbance to international payments.”¹³³ The Fed had made clear to the world that it would, albeit indirectly, support a global dollar financial system, even when that system operated beyond the formal confines of U.S. regulation.

Over the next few years, the Eurodollar market grew rapidly, and the Fed’s swap lines grew in tandem. What had begun with less than \$1 billion of available dollar liquidity around the middle of 1962¹³⁴ had, by 1970, grown to a nearly \$11 billion potential commitment.¹³⁵ Private market participants credited central bank support as a critical component of Eurodollar growth.

128. Robert N. McCauley & Catherine R. Schenk, *Central Bank Swaps Then and Now: Swaps and Dollar Liquidity in the 1960s* 20–38 (Bank for Int’l Settlements, Working Paper No. 851, 2020), <https://www.bis.org/publ/work851.pdf> [<https://perma.cc/L6G6-LWDV>].

129. In late 1966, one senior official recalled “channeling [U.S. dollar funds] into various markets” at the request of the New York Fed, which was “anxious that markets outside the United States shall not suffer unduly by the behavior of . . . U.S. bank branches abroad.” Letter from Gabriel Ferras to Dr. M.W. Holtrop, President of The Netherlands Bank N.V. (Dec. 2, 1966) (on file with the Bank of International Settlements Archives). He went on to add in a post-script, “This is not the first time the Federal has acted in conjunction with us in channeling U.S. dollars into the Euro-markets.” *Id.*

130. As Fred Klopstock observed as few years later, “for brief periods, the available supply in the Euro-dollar market has been augmented by Federal Reserve credit.” Klopstock, *supra* note 20, at 3.

131. A detailed history of Fed swap lines is provided in McCauley & Schenk, *supra* note 128.

132. FED. OPEN MKT. COMM., MEETING MINUTES FOR NOVEMBER 22, at 15 (1966).

133. President John F. Kennedy, Special Message to the Congress on Balance of Payments (July 18, 1963).

134. Michael D. Bordo et al., *The Evolution of the Federal Reserve Swap Lines Since 1962*, at 5 (Nat’l Bureau of Econ. Rsch., Working Paper No. 20755, 2014), https://www.nber.org/system/files/working_papers/w20755/w20755.pdf [<https://perma.cc/L549-PZFB>].

135. *Id.* at 4–5.

One observer noted that it “enhanced the Euro-dollar market’s growth and stability.”¹³⁶ In the meantime, the world had increasingly coalesced around the U.S. dollar as the preferred currency for invoicing global trade. By the mid-1960s, *The Economist* estimated that Sterling-settled trade had dropped from “half” to 25%, while the dollar represented “well over one-third” of global flows.¹³⁷ At the same time, the offshore U.S. dollar financial system, exemplified by the burgeoning Eurobond market, was deepening and broadening beyond what many thought possible only a couple of years earlier.¹³⁸ The reliance on and ability of Euro-currency issuers to accommodate the growth of the offshoring of international U.S. dollar based financial activity was at the core of the plan—the program was “working as [U.S. policy makers] had hoped it would.”¹³⁹ Thus, as *The Wall Street Journal*

136. CHASE MANHATTAN BANK, EURO-DOLLAR FINANCING 10 (1968).

137. *Financing World Trade*, ECONOMIST, June 8, 1966, at x.

138. As Paul Einzig described it in September 1964, a bit more than a year into Kennedy’s capital controls program:

Another very important new development has been the increasing use of Euro-dollars in connection with issues of foreign dollar bonds in Europe. The number of such loans increased considerably towards the end of 1963 and during 1964, especially in London, as a result of the diversion of foreign long-term borrowing in New York through the announcement of the IET proposal in July 1963. Euro-dollars have come to play a dual role in such transactions. They are borrowed by issuing houses and members of underwriting syndicates for the temporary financing of their participations, until they are able to place the bonds with investors. The latter, on that part, often pay for the bonds with the aid of their Euro-dollar deposits which they thus convert into long-term loans.

Einzig, *supra* note 113, at 445. One banker around the same time observed, “If you had said that nearly half a billion dollars of securities would be sold in the European markets back when the tax was first announced, nobody in New York would have thought it possible. . . .” John H. Allen, *Tax Clamps a Lid on Foreign Bonds*, N.Y. TIMES, Sept. 27, 1964, at F1.

139. Solomon, *supra* note 113, at 120.

In short, the investment program appears to be working as we had hoped it would, not by checking desirable expansion but by shifting the source of financing to countries with strong balance of payments and reserve positions, mainly European countries. The Eurobond market has significantly supplemented the New York market as a source of long-term financing not only for U.S. investors but for European, Japanese, and other investors as well. There is no evidence that this market is suffering from indigestion.

Id.

later recalled, “Eurodollar lore holds that the most fundamental impetus came, ironically, from the Fed and the U.S. Treasury Department.”¹⁴⁰

By the early 1970s, however, policy makers were growing increasingly concerned about the disruptive potential for Eurodollar markets to facilitate speculation and “hot money” flows. Eurodollars were increasingly portrayed as the “villain” of an approaching crisis;¹⁴¹ or, as the consistently colorful¹⁴² French Finance Minister Valéry Giscard d’Estaing put it, a “hydra-headed monster.”¹⁴³ But attempts to regulate the market largely failed as the requisite international consensus proved elusive.¹⁴⁴ Despite some short-lived attempts¹⁴⁵ to slow the growth of the market, particularly among central banks depositing their own excess dollars, in the end all the international community was able to muster was an agreement to collect more data.¹⁴⁶

Then, in the fall of 1973, everything changed. In early October, Egyptian and Syrian forces launched a surprise attack on Israel. As hostilities intensified, the Organization of Arab Petroleum Exporting Countries (“OAPEC”)—a predecessor to today’s Organization of Petroleum Exporting Countries (“OPEC”)—warned that any nation offering support for Israel would face supply cuts.¹⁴⁷ In mid-October, after the U.S. refused to abide by their ultimatums, Saudi Arabia suspended all exports of oil to the U.S.¹⁴⁸ Oil

140. Richard F. Janssen, *Tracking a Trend: Rapid Growth of Eurodollar Market Prompts Debate over the Wisdom of Imposing Controls*, WALL ST. J., Aug. 3, 1979, at 34.

141. John M. Lee, *The ‘Villain’ of the Crisis: Eurodollars*, N.Y. TIMES, May 10, 1971, at 1.

142. Giscard also reportedly coined the term “exorbitant privilege” in reference to benefits of issuing the world reserve currency. EICHENGREEN, *supra* note 83, at 4.

143. Clyde H. Fransworth, *Money Ailment is Hard to Cure*, N.Y. TIMES, Apr. 5, 1971, at 49.

144. See Benjamin Braun et al., *Financial Globalization As Positive Integration: Monetary Technocrats and the Eurodollar Market in the 1970s*, 28 REV. INT’L POL. ECON. 794, 812–13 (2020).

145. The “standstill agreement,” negotiated among the Group of Ten countries in June 1970, consisted of a voluntary cessation of new Eurodollar deposits by its signatories except for “exceptional reasons,” subject to renewal every three months. *Id.* at 808; see FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 21, at 4–5 (1971). It was described at the time as the “first concrete move to limit the phenomenal growth of the Eurodollar market.” Paul Lewis, *Group of Ten Central Banks Agree on Eurodollar Curbs*, FIN. TIMES, June 15, 1971. At the first opportunity, however, it was quietly discontinued, with the former signatories all agreeing not to publicize the breakdown. See FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 21, at 4–5.

146. FED. OPEN MKT. COMM., MEETING MINUTES FOR APRIL 18, attach. C (1972) (Mr. Daane’s Statement on September Basle).

147. See Edward Cowan, *A Saudi Oil Threat Reported*, N.Y. TIMES, Oct. 16, 1973, at 89.

148. *Oil Flows to U.S. Halted by Saudis*, N.Y. TIMES, Oct. 21, 1973; see William D. Smith, *The Arab Oil Weapon Comes Into Play*, N.Y. TIMES, Oct. 21, 1973, at 185.

markets reacted violently, and prices more than doubled by the end of the year.¹⁴⁹

Massive, rapid increases in the dollar value of oil exports were a critical test of the global financial system. Oil exporters suddenly found themselves flush with excess savings—much more than they could ever hope to invest at home¹⁵⁰—and went in search of investment opportunities of commensurate size. Oil importers, meanwhile, needed a mechanism with which to source sufficient dollar-denominated credit to buy much more expensive oil in order to sustain their own economic activity. The market needed an intermediary to bridge that gap, to “recycle” oil revenues from exporters to importers to keep the global economy running. Whether the system was up to the task was an open and frightening question. Soon, worries about monetary collapse and a new Great Depression went from the back to the front burner.¹⁵¹ Once again, global monetary instability presented a national security problem, this time in as much as it affected the smooth flow of oil around the world.¹⁵² It was, in the view of Secretary of State Henry Kissinger and others, the most significant threat to global security since the Second World War.¹⁵³

149. Smith, *supra* note 148.

150. According to the IMF, net oil revenues (often referred to as “rents”) collected by Arab countries totaled roughly 47% of GDP (68% for just Saudi Arabia) in 1974 alone. *Adjusted Net Savings*, WORLD BANK, <https://databank.worldbank.org/source/adjusted-net-savings/Series/NY.GDP.PETR.RT.ZS> [<https://perma.cc/EJX7-2C8N>].

151. Richard F. Janssen, *Eurojitters: Fears About Stability of the Banking System in West Are Spreading*, WALL ST. J., July 26, 1974, at 1.

152. There are numerous references to energy security, national security, and other implications of any interruption in U.S. and Western access to oil. For example, a report prepared for Congress noted that interruptions in the flow of global oil supply could “raise national security questions.” AD HOC COMM. ON THE DOMESTIC & INT’L MONETARY EFFECT OF ENERGY & OTHER NAT. RES. PRICING OF THE H. COMM. ON BANKING & CURRENCY, 93D CONG., OIL IMPORTS AND ENERGY SECURITY: AN ANALYSIS OF THE CURRENT SITUATION AND FUTURE PROSPECTS 152 (Comm. Print 1974). An article published in the Naval War College Review made similar arguments: “In addition to the threat of an actual oil supply cutoff, a more subtle long-term risk to national security exists in the possibility that the threat of a cutoff will influence the foreign policy decisions of the United States, the oil exporters, and other interested parties.” Barry M. Blechman et al., *Oil and National Security*, 26 NAVAL WAR COLL. REV. 8, 23 (1974). Further, starting in 1974 with the then-secret “add-on” arrangement with Saudi Arabia, petrodollar recycling became a key element of wider U.S. federal fiscal deficits. Andrea Wong, *The Untold Story Behind Saudi Arabia’s 41-Year U.S. Debt Secret*, BLOOMBERG (May 30, 2016), <https://www.bloomberg.com/news/features/2016-05-30/the-untold-story-behind-saudi-arabia-s-41-year-u-s-debt-secret>; see also David E. Spiro, *Policy Coordination in the International Political Economy: The Politics of Recycling Petrodollars* 401–34 (1989) (Ph.D. dissertation, Princeton University).

153. In a speech delivered in November of 1974, Kissinger observed:

For many in the international monetary and regulatory community, the Eurodollar market was the key to solving the problem. William E. Simon, Nixon's recently appointed Secretary of the Treasury, was a particularly vocal and public advocate. One of his first acts after having been sworn in was to commend the "flourishing" Eurodollar market for its demonstrated elasticity and management of the attendant risks.¹⁵⁴ Others were more concerned given the scale of oil rents to be recycled. The CIA, for their part, was concerned about the lack of an explicit commitment to support the market from a lender of last resort.¹⁵⁵

It didn't take long for events to provoke that commitment. A few years earlier, in the summer of 1971, the Nixon Administration had unilaterally decided to suspend the convertibility of U.S. dollars into gold.¹⁵⁶ With the anchor removed, pegs collapsed and speculation and volatility increased dramatically. Some banking houses saw this as an opportunity to seize, rather than a risk to manage. Although some booked massive profits, others took on bad positions. One small German Bank—Bankhaus Herstatt—was particularly aggressive and interconnected in newly volatile foreign exchange markets. As their bets on the U.S. dollar soured, a series of desperate attempts to hide losses were ultimately revealed, and the bank was closed by German regulators in late June 1974.¹⁵⁷

A generation ago the Western world faced an historic crisis—the breakdown of international order in the wake of world war. Threatened by economic chaos and political upheaval, the nations of the West built a system of security relations and cooperative institutions that have nourished our safety, our prosperity, and our freedom ever since. A moment of grave crisis was transformed into an act of lasting creativity. We face another such moment today. The stakes are as high as they were 25 years ago. The challenge to our courage, our vision, and our will is as profound. And our opportunity is as great.

Henry A. Kissinger, U.S. Sec'y of State, Address at the University of Chicago Board of Trustees Banquet: The Energy Crisis: Strategy for Cooperative Action (Nov. 14, 1974).

154. William E. Simon, Sec'y of the Treasury, Welcoming Address to the International Monetary Conference 12 (June 4, 1974).

155. CIA, ER-IR 74-19, PROBLEMS WITH GROWING ARAB WEALTH (1974), *reprinted in Federal Response to OPEC Country Investments in the United States (Part 1: Overview): Hearings Before the Subcomm. on Com., Consumer, and Monetary Affs. of the H. Comm. on Gov't Operations*, 97th Cong. 870 (1981).

156. Sandra Kollen Ghizoni, *Nixon Ends Convertibility of U.S. Dollars to Gold and Announces Wage/Price Controls*, FED. RSRV. HIST. (Aug. 1971), <https://www.federalreservehistory.org/essays/gold-convertibility-ends> [<https://perma.cc/W68A-RV7R>].

157. *See Big Bank Closed by West Germany*, N.Y. TIMES, June 27, 1974, at 65.

Herstatt was far from the largest bank in Germany, let alone Europe or the world.¹⁵⁸ But it was much more interconnected in foreign exchange markets than its size alone would suggest.¹⁵⁹ Herstatt's failure thus severely disrupted foreign exchange markets and precipitated a "breakdown" in the international payments system.¹⁶⁰ That in turn put the squeeze on Eurodollars, which were intimately tied to foreign exchange market functioning.¹⁶¹ Within weeks, Charlie Coombs told the FOMC that events in Europe were an "emergency situation"¹⁶² and the press predicted "a world banking crisis."¹⁶³

As the temperature continued to rise, global central banks arguably faced their first "whatever it takes" moment (in reference to the now famous comments by Mario Draghi, then-President of the European Central Bank).¹⁶⁴ They rose to the occasion: on September 10th, the day after their monthly meeting in Basel, the Group of Ten central bank governors (and Switzerland) released a rare joint statement:

The Governors also had an exchange of views on the problem of the lender of last resort in the Euromarkets. They recognized that it would not be practical to lay down in advance detailed rules and procedures for the provision of temporary liquidity. But they were satisfied that to that end means are available and will be used if and when necessary.¹⁶⁵

That statement, which at the time was referred to simply as "the communiqué," was striking as a statement of principles and priorities. It was also an implicit commitment on the part of the Fed, as the only true source of U.S. dollar liquidity, to take on ultimate responsibility for the Eurodollar market. The leadership of the Fed was clearly cognizant of that underlying reality. When the FOMC discussed the communiqué, Governor Wallich

158. See Emmanuel Mourlon-Druol, *'Trust Is Good, Control Is Better': The 1974 Herstatt Bank Crisis and Its Implications for International Regulatory Reform*, 57 BUS. HIST. 311, 313 (2015).

159. *Id.*

160. Clyde H. Farnsworth, *Bank Failure in Germany Jars Confidence Abroad*, N.Y. TIMES, July 5, 1974, at 31.

161. *Crisis After Herstatt*, ECONOMIST, July 13, 1974, at 68.

162. See FED. OPEN MKT. COMM., MEETING MINUTES FOR JULY 16, at 5 (1974).

163. *A World Banking Crisis?*, ECONOMIST, Aug. 3, 1974, at 55.

164. In a now famous speech, Mario Draghi, then President of the European Central Bank, asserted his willingness to use monetary policy to avoid a breakup of the Eurozone. Carlo Alcaraz et al., *Whatever It Takes: What's the Impact of a Major Nonconventional Monetary Policy Intervention?* 2 (Eur. Cent. Bank, Working Paper No. 2249, 2019).

165. Communiqué Issued by Central Bank Governors of the Group of Ten and Switzerland (1974), reprinted in FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 10, at 96 (1974).

noted that foreign central banks providing liquidity to Eurodollar issuers “might well have to draw on [their] swap line with the Federal Reserve to obtain the dollars needed.”¹⁶⁶

The period starting with the oil embargo and proceeding through the Herstatt failure and official reaction to it constituted a firm shift in regulatory posture. After it, the world could not risk the disruption greater regulatory intervention might cause. “The right policy is not to say ‘we must tighten controls on the Euromarkets,’” one editorial observed, “[i]t is now in some respects the reverse: to make sure that money supply is not cut by large amounts by accident.”¹⁶⁷ The official sector appears to have generally shared that sentiment: a confidential BIS report issued a few years after the oil shock, for example, recalled that “the role of banks was thus so obviously welcome” that it “pushed into the background” any concerns about the impact of Eurodollars on monetary policy.¹⁶⁸ Regulators had, in a sense, missed their moment. By 1980 the Eurodollar market had grown ten-fold since 1970.¹⁶⁹ International trade and capital flows grew ever more intertwined with a global dollar-based financial system built largely on top of the Eurodollar market. That sustained and accelerated its further expansion; by the mid-2000s, there were substantially more dollar-denominated bank deposits overseas than in the U.S.¹⁷⁰

The story is, of course, more complicated, with more twists and turns, than briefly elaborated here. But the principle is clear: Eurodollars were a form of money issued outside the purview and vision of the Federal Reserve but thought to be a useful tool to further other goals. Thus, the Fed not only accommodated intrusions into its monetary sovereignty—it actively encouraged them by providing access to liquidity support through its balance sheet. In effect, they volunteered to act as the ultimate lender of last resort to an offshore market that created U.S. dollars without U.S. law. A variety of other factors, some intended and others likely not, gave the Eurodollar market

166. *Id.* at 48.

167. *A World Banking Crisis?*, *supra* note 163, at 57.

168. BANK FOR INT’L SETTLEMENTS, THE DEVELOPMENT OF THE EURO-CURRENCY MARKET AND INTERNATIONAL BANK LENDING SINCE THE OIL PRICE INCREASE AND ITS MACRO-ECONOMIC POLICY IMPLICATIONS 3–4 (1978).

169. *Compare* BANK FOR INT’L SETTLEMENTS, FIFTY-FIRST ANNUAL REPORT 118 (1981), https://www.bis.org/publ/arpdf/archive/ar1981_en.pdf [<https://perma.cc/ZAP6-NSDQ>], *with* BANK FOR INT’L SETTLEMENTS, FORTY-FIRST ANNUAL REPORT 161 (1971), https://www.bis.org/publ/arpdf/archive/ar1971_en.pdf [<https://perma.cc/BR9C-CBEG>].

170. *Compare* Aldasoro & Ehlers, *supra* note 14, *with Domestically Chartered Commercial Banks*, FRED, <https://fred.stlouisfed.org/series/DPSDCBW027SBOG> [<https://perma.cc/L6N6-US9E>] (showing deposits in domestically chartered commercial banks in the US of approximately 4.2 trillion in 2004 to 5.3 trillion in 2006).

impetus to grow, but it was this commitment that allowed Eurodollars to reach their spectacular scale. As Adam Tooze later recalled, “[t]he foundation of the global dollar was the private banking and financial market network, materialized in the Wall Street-City of London nexus . . . a cocreation of American and European finance, deliberately erected beyond state control.”¹⁷¹

The real test of that arrangement came several decades later. In 2008, as run-like conditions developed in the shadow banking system, Eurodollar markets were threatened with collapse. Policy makers worried those stresses could spill over into domestic U.S. money markets, threatening financial stability and the Fed’s control over interest rates.¹⁷² The Fed not only provided emergency liquidity, but it did so on a massive scale. Starting in late 2007, the FOMC approved much larger swap lines with other major central banks.¹⁷³ In total, more than *\$500 billion* was drawn through at points in early 2009.¹⁷⁴ Usage dropped dramatically as markets stabilized. But, when the COVID-19 pandemic hit less than twelve years later, the swap lines were once again a critical element of crisis-fighting¹⁷⁵—this time topping out at *only* \$450 billion.¹⁷⁶ Eurodollar deposits were rewarded for their faith; the Fed acted vigorously as lender of last resort to a now massive global dollar market. But that episode has led some to argue that the global dollar system,

171. ADAM TOOZE, *CRASHED: HOW A DECADE OF FINANCIAL CRISES CHANGED THE WORLD* 219 (2018).

172. FED. OPEN MKT. COMM., MEETING MINUTES FOR DECEMBER 11, at 33 (2007), <https://www.federalreserve.gov/monetarypolicy/files/FOMC20071211meeting.pdf> [<https://perma.cc/4BCH-5MCB>]. In discussing the authorization of swap lines with the European Central Bank and Swiss National Bank, Brian Madigan, then Director of the Division of Monetary Affairs at the Board of Governors argued that doing so would provide “insurance that financial problems will remain contained.” *Id.* at 94. Ben Bernanke, chair of the Board of Governors at the time, had earlier referred to the swaps as part of the FOMC’s “plan to address money market issues” and also noted that they were “very important for [its] monetary control.” *Id.* at 13. Nathan Sheets, then Director of International Finance at the Board of Governors, made similar observations about opening several new swap lines in October 2008. *See* FED. OPEN MKT. COMM., MEETING MINUTES FOR OCTOBER 28–29, at 10 (2008), <https://www.federalreserve.gov/monetarypolicy/files/FOMC20081029meeting.pdf> [<https://perma.cc/AGP7-C4VJ>].

173. Nathan Sheets et al., *The Federal Reserve’s Swap Lines: Lender of Last Resort on a Global Scale 2* (Sept. 11–12, 2018) (unpublished manuscript), <https://ypfsresource.library.blob.core.windows.net/fcic/YPFS/14%20B%20International%20Swaps%20Prelim%20Disc%20Draft%202018.09.11.pdf> [<https://perma.cc/ES8G-YYHB>].

174. *Id.* at 6.

175. Joshua Aizenman et al., *Central Bank Swap Arrangements in the COVID-19 Crisis*, 122 J. INT’L MONEY & FIN. 1, 1 (2022).

176. Chris Marsh, *Fed Swap Lines During the 2020 Global Pandemic*, MONEY: INSIDE & OUT (Jan. 29, 2021), <https://moneyinsideout.exantedata.com/p/fed-swap-lines-during-the-2020-global> [<https://perma.cc/873U-ETKU>].

and in particular the Eurodollars which form its foundation, were at the heart of the collapse of Global Financial Crisis. To quote Tooze again: “What the Fed was struggling to contain in 2008 were not two separate American and European crises but one gigantic storm in the dollar-based North Atlantic financial system.”¹⁷⁷

B. The Repo Market: Building a New Treasury Market

Repos are a form of short term secured lending. In this Section, we discuss the mechanics and importance of repos before zeroing in on the early efforts of Treasury policymakers that were crucial to building the modern repo market. In a repo, borrower (or “seller”) sells a security (typically Treasuries or other bonds) to the lender (“buyer”) under an agreement to buy it back at an adjusted price.¹⁷⁸ The difference in price between the first and second transaction functions like an interest rate.¹⁷⁹ If the borrower were to go bankrupt before repurchasing the security, the lender could sell the security.¹⁸⁰ It is in this sense that the underlying security acts as collateral protecting the lender.

Because repos are both short-term and fully secured, they are usually seen as having essentially no credit risk.¹⁸¹ As a result, they are very popular among cash managers with a low tolerance for risk, who see repos as in many ways substitutes for insured bank deposits.¹⁸² The fact that repos function as near-substitutes for bank deposits imbues them with many of the features we typically associate with “money,” but without the explicit safety net (and

177. TOOZE, *supra* note 171, at 217–18.

178. In market jargon, descriptions of activity in repo typically follow the security leg rather than the cash leg—the seller is raising cash, the buyer is lending it. See VIKTORIA BAKLANOVA ET AL., REFERENCE GUIDE TO U.S. REPO AND SECURITIES LENDING MARKETS 1 (2015).

179. *See id.* at 4.

180. *Id.* at 20–21.

181. *See* Gorton & Metrick, *supra* note 33, at 49. As a caveat, repo lenders are exposed to volatility in the market value of collateral in the event of counterparty failure given the time needed to sell the underlying securities. *See* VIKTORIA BAKLANOVA ET AL., THE USE OF COLLATERAL IN BILATERAL REPURCHASE AND SECURITIES LENDING AGREEMENTS 21 (2017), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr758.pdf [<https://perma.cc/XF6N-FZXL>]. This is typically mitigated by haircuts, which can be calibrated to reduce the risk of loss by lending less than market value against certain securities. *Id.* at 4. In other words, repos can be sized to offer de facto overcollateralization. *Id.* at 2. That is not, however, always necessary in Treasury repo markets. *Id.*

182. *See* Gorton & Metrick, *supra* note 2, at 276.

regulation) afforded to traditional deposits.¹⁸³ Repo lies at the center of the shadow banking system.¹⁸⁴

Repo markets are also enormous, with more than \$5 trillion outstanding on a typical day.¹⁸⁵ They are also a critical piece of market infrastructure. As recent years have demonstrated, disruptions in repo markets are contagious with rapid spread of disruption to other elements of the financial system.¹⁸⁶ They are especially important to the proper functioning of government securities markets.¹⁸⁷ That has led to sizeable interventions by the Fed to stabilize repo markets when they are severely disrupted—first in 2019,¹⁸⁸ and again and more dramatically in 2020.¹⁸⁹

It is also far from being a new financial innovation. Although there is some evidence of transactions resembling modern repos as early as the eighteenth century,¹⁹⁰ the market's current form has its origins in the aftermath of World

183. *See id.* at 267–68.

184. *Id.* at 279.

185. *US Repo Statistics*, SIFMA (Feb. 9, 2024), <https://www.sifma.org/resources/research/us-repo-statistics/> [<https://perma.cc/QB7U-NY2E>].

186. Josh Younger, *Revisiting the Ides of March, Part I: A Thousand Year Flood*, COUNCIL FOREIGN RELS. (July 20, 2020, 7:40 PM), <https://www.cfr.org/blog/revisiting-ides-march-part-i-thousand-year-flood> [<https://perma.cc/5V5V-X59M>].

187. Fernando Avalos et al., *September Stress in Dollar Repo Markets: Passing or Structural?*, BANK FOR INT'L SETTLEMENTS (Dec. 8, 2019), https://www.bis.org/publ/qtrpdf/r_qt1912v.htm [<https://perma.cc/4DT8-VE5P>] (noting repo markets help other financial markets function smoothly); Memorandum from Kenneth Garbade et al. to Fed. Open Mkt. Comm., Treasury Market Functioning and the Zero Bound 94 (Dec. 5, 2008) (“Disruptions in these [repo markets have] degraded liquidity in Treasury cash markets and may increase the cost of Treasury issuance . . .”), <https://www.federalreserve.gov/monetarypolicy/files/fomc20081212memo11.pdf> [<https://perma.cc/CP4K-362A>]; Tobias Adrian et al., *Repo and Securities Lending*, in RISK TOPOGRAPHY: SYSTEMIC RISK AND MACRO MODELING 131, 131 (Markus Brunnermeier & Arvind Krishnamurthy eds., 2014), <https://www.nber.org/system/files/chapters/c12515/c12515.pdf> [<https://perma.cc/PEV5-9ZHJ>] (“The markets for repos and sec lending are crucial for the trading of fixed-income securities and equities.”); Telis Demo & Akane Otani, *The Repo Market: What It Is, and Why Everyone Is Talking About It Again*, WALL ST. J. (Sept. 17, 2019, 2:03 PM), <https://www.wsj.com/articles/the-repo-market-what-it-is-and-why-everyone-is-talking-about-it-again-11568743438> (“Repo is a vital cog in how Wall Street works . . .”); Menand & Younger, *supra* note 47, at 278–79.

188. Lorie K. Logan, Senior Vice President, Fed. Rsrv. Bank of N.Y., Money Market Developments: Views from the Desk, Remarks at the Federal Reserve Bank of New York's Annual Primary Dealer Meeting (Nov. 4, 2019).

189. Lorie K. Logan, Senior Vice President, Fed. Rsrv. Bank of N.Y., The Federal Reserve's Recent Actions to Support the Flow of Credit to Households and Businesses, Remarks Before the Foreign Exchange Committee (Apr. 14, 2020).

190. STEPHEN QUINN ET AL., FED. RSRV. BANK ATLANTA, POL'Y HUB, STANDING REPO FACILITIES, THEN AND NOW 13–14 (2020), <https://www.atlantafed.org/-/media/documents/research/publications/policy-hub/2020/01/17/standing-repo-facilities-then-and-now.pdf> [<https://perma.cc/WV5A-B265>].

War II. The war brought tectonic shifts to American public finance. First and foremost, there was explosive growth in U.S. government debt. From late 1941 through 1945, federal debt held by the public increased by nearly \$200 billion.¹⁹¹ For context, this sum was equivalent to roughly 150% of pre-War annual economic activity (measured as gross domestic product, or GDP).¹⁹² To give a contemporary analogue, it would be as if the past three years saw \$35 trillion in net issuance of government debt, and as if domestic purchasers had bought virtually all of it.¹⁹³ This volume of debt issuance was a spectacular feat, and one that Roosevelt's Treasury was only able to accomplish with the help of extraordinary central bank action.

Starting in early 1942,¹⁹⁴ the Fed deployed its balance sheet to set the interest rate the federal government paid on its debt.¹⁹⁵ It did so by making clear its intention to purchase government securities at prices implying a fixed rate of return. Arguably, this action made it possible for the government to undertake such a dramatic expansion of its debt burden by stabilizing the interest rate associated with national borrowing amidst a historic flood of supply. These central bank interventions also had dramatic side effects. The Fed 'bought' most of those securities by quite literally printing paper money¹⁹⁶; commercial banks did so by issuing new deposits, mostly to non-farm individuals and business involved in manufacturing and trade.¹⁹⁷ Monetizing a substantial portion of the debt—either directly through outright

191. CONG. BUDGET OFF., HISTORICAL DATA ON FEDERAL DEBT HELD BY THE PUBLIC (2010), <https://www.cbo.gov/publication/21728> [<https://perma.cc/4NXE-7G8S>].

192. *Id.*

193. Scaled to 2019 nominal GDP for the United States. FED. RSRV. ECON. DATA, GROSS DOMESTIC PRODUCT (May 30, 2024, 7:57 AM), <https://fred.stlouisfed.org/series/GDP> [<https://perma.cc/YA8S-UAWH>].

194. For a narrative account, see Elmus R. Wicker, *The World War II Policy of Fixing a Pattern of Interest Rates*, 24 J. FIN. 447, 447–58 (1969).

195. For a more detailed discussion, see KENNETH D. GARBADE, FED. RSRV. BANK N.Y., MANAGING THE TREASURY YIELD CURVE IN THE 1940S (2020), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr913.pdf [<https://perma.cc/TDX7-2RA3>]; Memorandum from Radha Chaurushiya & Ken Kuttner to Kos & Reinhart, Targeting the Yield Curve: The Experience of the Federal Reserve, 1942–51 (June 18, 2003), <https://www.federalreserve.gov/monetarypolicy/files/FOMC20030618memo01.pdf> [<https://perma.cc/MD7F-LJ7T>].

196. G.L. Bach, *Currency in Circulation*, 30 FED. RSRV. BULL. 318, 318–28 (1944).

197. Richard Youngdahl, *Ownership of Demand Deposits*, 32 FED. RSRV. BULL. 469, 469–72 (1946).

purchases by the Fed, or indirectly through the commercial banking system—led to an inflationary shock which persisted well after the war was over.¹⁹⁸

That put the Fed in a difficult situation. Even as prices started to rise rapidly, the FOMC and the Treasury remained concerned that the government securities market was not yet ready to stand on its own.¹⁹⁹ They had taken some initial steps to “free the market,” including allowing short-term interest rates to fully reflect the whims of private investors.²⁰⁰ But interest rates on the long-term debt that made up most of the market remained heavily controlled.²⁰¹ Congress was also growing impatient, with the Joint Economic Committee specifically concerned that “the vigorous use of a restrictive monetary policy as an anti-inflation measure has been inhibited since the war by considerations relating to holding down the yields and supporting the prices of United States Government securities.”²⁰² In essence, the war had seen a high degree of federal management of the Treasury market and policymakers wished to reduce their footprint.

Escalating pressure kicked off a frenetic inter-agency negotiation in search of a way for the Fed to extract itself from the government bond market without severely disruptive consequences.²⁰³ The result, announced in March 1951, was a “full accord with respect to debt-management and monetary policies.”²⁰⁴ In what became known simply as “the Accord,” the Fed and Treasury agreed in principle to liberalize the government bond market from aggressive federal management.²⁰⁵ As William M. Martin, chairman of the

198. For an overview, see MILTON FRIEDMAN & ANNA SCHWARTZ, *World War II Inflation, September 1939–August 1948*, in FROM NEW DEAL BANKING REFORM TO WORLD WAR II INFLATION 129 (1980).

199. FED. OPEN MKT. COMM., MEETING MINUTES FOR JUNE 5, at 3–4 (1947).

200. FED. OPEN MKT. COMM., MEETING MINUTES FOR JUNE 30, at 7 (1947); FED. OPEN MKT. COMM., MEETING MINUTES FOR JUNE 28, at 5 (1949); *Federal Reserve Board Moves to Increase Credit for Business*, N.Y. TIMES, June 28, 1949, at 41.

201. Allan Sproul described this state of affairs as only a “partial escape from the straightjacket [sic] of the fixed pattern of rates.” FED. OPEN MKT. COMM. MEETING MINUTES FOR OCT. 3, at 19 (1946). As of 1949, roughly 52% of the \$218 billion in marketable Treasury debt outstanding was in notes and bonds (which had original maturities beyond one year) which were still subject to price controls. U.S. TREASURY DEP’T, OFF. OF THE SEC’Y, TREASURY BULLETIN FEBRUARY 1950, at 27 tbl.3 (1950), https://fraser.stlouisfed.org/files/docs/publications/tbulletin/1950_02_treasurybulletin.pdf [<https://perma.cc/ZR3F-767E>].

202. S. REP. NO. 81-1843, at 19 (1950).

203. Robert L. Hetzel & Ralph F. Leach, *The Treasury-Fed Accord: A New Narrative Account*, FED. RSRV. BANK RICH. ECON. Q., Winter 2001, at 33–53.

204. Joint Announcement by the Sec’y of the Treasury and the Chairman of the Bd. of Governors, and of the Fed. Open Mkt. Comm., of the Fed. Rsrv. Sys. (Mar. 5, 1951), https://fraser.stlouisfed.org/files/docs/historical/ny%20circulars/1951_03665.pdf [<https://perma.cc/W8BB-9CFP>].

205. *See id.*

Fed Board of Governors at the time, described it, they aimed to “reduce to a minimum the monetization of the public debt without creating an adverse market psychology with reference to Government securities.”²⁰⁶ To paraphrase Martin, the Treasury agreed to accept the market’s judgment as to the appropriate interest rate on its debt, and in exchange the Fed committed to ensuring that price discovery process was orderly and not unduly influenced by speculation.²⁰⁷ As a statement of principles, the Accord was hard to argue with, but implementing its vague commitments was another matter.

For Martin, a key element of freeing the Treasury market was broadening the base of purchasers beyond commercial banks, or as he observed, “more bonds held by nonbank investors.”²⁰⁸ Banks had been the anchor of government debt markets for nearly a century by that point. But when banks buy Treasury securities, they do so by issuing deposits. Because those deposits did not exist before the purchase and can be used as a payment instrument and store of value by individuals and businesses, this is tantamount to “printing” money. In that sense, wartime spending was financed to a great extent simply by having the commercial banking system take on more leverage (i.e., increasing its total assets relative to capital) to accommodate new purchases of Treasuries.²⁰⁹ Martin and others blamed this “overexpansion of the money supply” for the post-war surge in inflation.²¹⁰ To keep the fiscal faucet flowing but get control over prices, the Fed needed to find a new set of non-bank buyers.

Yet expanding the potential base of purchasers of federal government debt required a deep and liquid trading market that provided a cheap and easy

206. See *Monetary Policy and the Management of the Public Debt: Their Role in Achieving Price Stability and High-Level Employment*, in J. COMM. ON THE ECON. REP., REPLIES TO QUESTIONS AND OTHER MATERIAL FOR THE USE OF THE SUBCOMMITTEE ON GENERAL CREDIT CONTROL AND DEBT MANAGEMENT, S. DOC. NO. 82-123, pt. 1, at 350 (1952) (giving the reply of the chairman of the Board of Governors of the Federal Reserve System to question about policy discussions with Treasury between end of war and “accord”).

207. *Id.* at 349–51.

208. *Nomination of William McChesney Martin, Jr.: Hearing Before the S. Comm. on Banking & Currency*, 82nd Cong. 11 (1951) (statement of William McChesney Martin, Jr., Assistant Sec’y, Dep’t of the Treasury).

209. Annual data for the consolidated balance sheet of commercial banks in the United States shows a declined in capital ratio (capital account as a percentage of total assets) from 5.4% in 1940 to 3.1% in 1945. See William McChesney Martin, Jr., Chairman, Bd. of Governors of the Fed. Rsrv. Sys., Remarks at the Luncheon Meeting of the Economic Club of Detroit: The Transition to Free Markets 2–3 (Apr. 13, 1953), https://fraser.stlouisfed.org/files/docs/historical/martin/martin53_0413.pdf [<https://perma.cc/2ZBU-R375>].

210. *Id.*

means by which these new investors could acquire new positions and dispose of old ones. Only a liquid secondary market would attract enough new investors to buy and sell Treasury securities in sufficient size. In practice that meant an enhanced role for dealers in government securities—the market intermediaries who facilitated trading in Treasuries. Government securities dealers used their extensive networks to match buyers and sellers and warehoused bonds that they had purchased but not yet sold. But dealers' ability and willingness to make markets in Treasuries had atrophied during the war years, as pegged rates rendered their businesses model essentially unprofitable.²¹¹

These issues were largely related to how dealers financed their market making activity. Since the advent of intermediated government debt markets, dealers depended on regular access to short-term borrowed funds from banks to support their activities.²¹² In the years immediately following the end of the war, those call loans were both unreliable and often too expensive.²¹³ That made it sometimes unprofitable for dealers to carry inventories,²¹⁴ which is a critical element of making markets in government securities. Some on the FOMC worried that the inability of dealers to obtain cheap funding for their market-making would prevent them from being able to operate effectively.²¹⁵ Without a diverse and active cohort of dealers, the secondary market might not function smoothly, and a broadened base of Treasury-holders would fail to materialize.

211. FED. OPEN MKT. COMM., MEETING MINUTES FOR MARCH 5, at 2 (1953), <https://www.federalreserve.gov/monetarypolicy/files/FOMChistmin19530305.pdf> [<https://perma.cc/6Z2H-DQ8X>].

212. Non-bank dealers in the 1950s typically had leverage ratios of more than 10:1, and sometimes more than 30:1. J. ECON. COMM., 86TH CONG., A STUDY OF THE DEALER MARKET FOR FEDERAL GOVERNMENT SECURITIES 90–91 (J. Comm. Print 1960).

213. Stanley L. Miller, *Financing Security Brokers and Dealers*, in FED. RSRV. BANK N.Y., MONEY MARKET ESSAYS 27, 33 (1952). Around the same time, the Ad Hoc Committee observed “[n]onbank dealers in Government securities, on the other hand, in the absence of an open market for call loans, have found it difficult on a number of recent occasions, and even for some sustained periods, to borrow money except at rates which penalize their functioning as dealers.” *The Federal Reserve System After Fifty Years: Hearings on H.R. 3783, H.R. 9631, H.R. 9685, H.R. 9686, H.R. 9687, and H.R. 9749 Before the Subcomm. on Domestic Fin. of the H. Comm. on Banking & Currency*, 88th Cong. 2053 (1964).

214. When the yield on securities held in inventory is less than the cost to finance those positions, dealers incur what is often referred to as “negative carry.” Under those circumstances, inventories became a net expense and a draft on profitability, which incentivizes holding as few securities as possible. Allan Sproul in particular was concerned about the instability this could generate in a world of volatile interest rates. FED. OPEN MKT. COMM., MEETING MINUTES FOR DECEMBER 9, at 4 (1947), <https://www.federalreserve.gov/monetarypolicy/files/FOMChistmin19471209.pdf> [<https://perma.cc/92HB-HP2W>].

215. *Id.*

One solution was for the Fed to facilitate an alternative source of funding for dealers that avoided these concerns—either directly, via extensions of credit by the Federal Reserve to non-bank dealers, or indirectly, via official backstops on certain types of short-term funding. Allan Sproul, President of the Federal Reserve Bank of New York, preferred the former: “it would be of assistance,” he argued, “if the Federal Reserve Banks were authorized to make loans to dealers” to avoid forced sales of inventory positions.²¹⁶ This was becoming a time-sensitive issue. Sproul and Rouse noted that money market dynamics at the time had made the need for such an authority “urgent.”²¹⁷

How to provide those loans was a complicated question. At the time, most intermediation in government securities was dominated by non-banks,²¹⁸ and this significantly limited the Fed’s options. As originally conceived, the central bank was only intended to extend credit to members of the Federal Reserve System—in rough terms, commercial banks.²¹⁹

Repo, on the other hand, was not, in the view of the Board and its Legal Department, an extension of credit. Rather, it was considered a true sale²²⁰ and therefore an open market operation, authorized under section 14 of the Federal Reserve Act.²²¹ It was not restricted to banks or exigent circumstances.²²² Section 14 could be used to finance government securities

216. *Id.*

217. *Id.* at 5.

218. J. ECON. COMM., *supra* note 212, at 2; CECILIA CAGLIO ET AL., *The Value of Internal Sources of Funding Liquidity: U.S. Broker-Dealers and the Financial Crisis*, in FED. RESRV. BANK N.Y. STAFF REPS. NO. 969, at 16, 32 (2021), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr969.pdf [<https://perma.cc/5ATB-ZCGA>].

219. In 1922, Carter Glass, one of the primary architects of the Federal Reserve System, described the Fed to the Senate by saying “they do not loan, can not loan, a dollar to any individual in the United States nor to any concern or corporation in the United States, but only to stockholding banks.” Sastry, *supra* note 42, at 9. On the legal situation of the Fed more broadly, see Peter Conti-Brown & David A. Wishnick, *Technocratic Pragmatism, Bureaucratic Expertise, and the Federal Reserve*, 130 YALE L.J. 636, 640 (2021); Peter Conti-Brown et al., *Towards an Administrative Law of Central Banking*, 38 YALE J. ON REGUL. 1, 5–6 (2021); and Steffi Ostrowski, *Judging the Fed*, 131 YALE L.J. 726, 728–81 (2021).

220. See Memorandum from George Vest on Legality & History of Repurchase Agreements of Federal Reserve Banks to Exec. Comm. of the Fed. Open Mkt. Comm. 28 (Oct. 14, 1954), <https://fraser.stlouisfed.org/archival-collection/records-federal-reserve-system-1344/discount-rates-operations-fr-banks-repurchase-paper-1942-1958-540597> [<https://perma.cc/6U8M-VGSG>]; see also Lev Menand, *The Federal Reserve and the 2020 Economic and Financial Crisis*, 26 STAN. J.L. BUS. & FIN. 295, 345 n.193 (2021).

221. Federal Reserve Act § 14(b), 12 U.S.C. § 355.

222. Federal Reserve Act § 14, 12 U.S.C. § 353. Section 14 extends that authority to “any obligation which is a direct obligation of, or fully guaranteed as to principal and interest by, any agency of the United States.” 12 U.S.C. § 355(2).

held by non-banks. Although their use had been discontinued in the 1930s, the FOMC had reinstated the repurchase facility in 1948.²²³ Sproul saw them as a useful tool with which to “facilitate the ready movement of Government securities in and out of dealers’ hands without the necessity of their being sold to the Federal Reserve Banks.”²²⁴ In that sense, as the New York Fed described it in a reply to the Ad Hoc Committee report, repo was an “indirect form of intervention designed to facilitate the functioning of the Government security market.”²²⁵ Despite being initially offered at or above prevailing discount rates, the FOMC later approved²²⁶ repos at below the discount rate to facilitate dealer inventories “if the bank lending rates to dealers should get out of line in relationship to market rates on short-term Government issues.”²²⁷

Although the Fed’s repo offering was itself rarely used, Sproul immediately recognized its utility in facilitating the transition to liberalized markets and fulfilling the promise of the Accord.²²⁸ Repo was a means by which to “make loans to dealers,” as he described it back in 1947.²²⁹ Further, the Fed could do so at an administered rate selected by the FOMC, rather than a market rate determined by the balance of supply and demand in money markets. Doing so would all but ensure dealers could finance their inventories of Treasury securities at a rate which maintained the overall economics of their franchise. That made them much more reliable and effective intermediaries—able to use their expanded balance sheets to smooth out timing gaps between supply and demand. More elastic dealer balance sheets would, it was hoped, dampen the impact of short-term imbalances and maintain low transaction costs. That was essential to achieving the “depth,

223. FED. OPEN MKT. COMM., MEETING MINUTES FOR JANUARY 20, at 9–10 (1948), <https://fraser.stlouisfed.org/title/federal-open-market-committee-meeting-minutes-transcripts-documents-677/meeting-february-27-1948-22707/content/pdf/19480120MinutesECv> [<https://perma.cc/T88K-MQUY>].

224. FED. OPEN MKT. COMM., MEETING MINUTES FOR DECEMBER 9, at 4 (1947), <https://www.federalreserve.gov/monetarypolicy/files/FOMChminec119471209.pdf> [<https://perma.cc/CZV7-AP83>].

225. *The Federal Reserve System After Fifty Years: Hearings Before the Subcomm. on Domestic Fin. of the Comm. on Banking and Currency*, 88th Cong. 2076 (1964).

226. FED. OPEN MKT. COMM., MEETING MINUTES FOR AUGUST 5, at 16–17 (1949), <https://fraser.stlouisfed.org/title/federal-open-market-committee-meeting-minutes-transcripts-documents-677/meeting-august-5-1949-22714/content/pdf/19490805Minutesv> [<https://perma.cc/SAB8-QXHX>].

227. *Id.* at 12–13.

228. FED. OPEN MKT. COMM., MEETING MINUTES FOR MARCH 8, at 4 (1951), <https://www.federalreserve.gov/monetarypolicy/files/FOMChistmin19510308.pdf> [<https://perma.cc/4E5R-K856>].

229. *Id.*

breadth, and resiliency” in Treasury markets that the Fed saw as a prerequisite to achieving the promise of the Accord.²³⁰

The Fed made extensive use of their expanded repo authority in late 1952,²³¹ and then again amidst the market dysfunction of April and May 1953.²³² Those initial interventions proved controversial, with one Governor going so far as to question the legality of offering repo to non-bank dealers.²³³ Ultimately, however, the FOMC not only coalesced around repo as a key tool for implementing monetary policy, but gradually expanded the range of collateral they would accept. Doing so served two purposes: ensuring the efficacy of repo as a tool of monetary policy and providing a more effective backstop to the Treasury market.²³⁴

That decision was fateful. The arrival of the Fed provided two foundational elements of the repo market: standardized terms and a liquidity backstop.²³⁵ This made repos attractive to cash-rich corporations as a higher-

230. *The Federal Reserve System After Fifty Years: Hearings Before the Subcomm. on Domestic Fin. of the Comm. on Banking and Currency*, *supra* note 225, at 2007.

231. Bd. of Governors of the Fed. Res. Sys., *Credit and Monetary Review for 1952*, 39 FED. RES. BULL. 91, 91 (1953).

232. See Menand & Younger, *supra* note 47, at 263; Tracy Alloway, *The Shadow Is Born: How the Fed Helped Spawn a \$23.7 Trillion Market*, BLOOMBERG (Nov. 7, 2022), <https://www.bloomberg.com/news/features/2022-11-07/the-shadow-is-born-how-the-fed-helped-spawn-a-23-7-trillion-market>; Tracy Alloway & Joe Weisenthal, *Transcript: Josh Younger on the Origin Story of the Shadow Banking System*, BLOOMBERG (Nov. 7, 2022), <https://www.bloomberg.com/news/articles/2022-11-07/transcript-josh-younger-on-the-origin-story-of-the-shadow-banking-system>.

233. Robertson felt that repos “constituted a loan” and therefore were “originally . . . an illegal arrangement.” FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 22, at 3 (1954), <https://www.federalreserve.gov/monetarypolicy/files/FOMChminec119540922.pdf> [https://perma.cc/ZE5J-7E6Y].

234. Alan Holmes, Manager of the System Open Market Account from 1965 to 1979, elaborated the logic for wider collateral eligibility at a June 1966 meeting of the FOMC. FED. OPEN MKT. COMM., MEETING MINUTES FOR JUNE 28, at 30 (1966), <https://www.federalreserve.gov/monetarypolicy/files/fomchistmin19660628.pdf> [https://perma.cc/3V9Z-GGXY]. He argued that shifts in dealer inventory positions could leave them without sufficiently short-dated collateral, rendering repos an ineffective means by which to manage reserve supply. *Id.* He also argued that offering repo against longer maturities could disincentivize sales by investors with short-term cash needs. *Id.* All limits on acceptable government securities collateral for Fed repos were removed temporarily at that meeting. *Id.* That change, which Holmes told the Committee “had proved, and was likely to remain, helpful,” was made permanent a bit less than a year later. FED. OPEN MKT. COMM., MEETING MINUTES FOR MARCH 7, at 12 (1967), <https://www.federalreserve.gov/monetarypolicy/files/fomchistmin19670307.pdf> [https://perma.cc/7HDG-GPPT]. For a detailed history, see Kenneth D. Garbade, *Repurchase Agreements as an Instrument of Monetary Policy at the Time of the Accord*, in FED. RSRV. BANK OF N.Y. STAFF REPS. NO. 780, 1, 35 (2016).

235. Writing in 1957, NYCHA observed that the pricing of private market repos was typically close to the rate set by the Fed. N.Y. CLEARING HOUSE ASS'N, A STUDY OF THE

yielding alternative to traditional bank deposits—the latter being largely uninsured²³⁶ with interest rates then legally capped well below money market rates (by Regulation Q).²³⁷ As the New York Clearing House Association (“NYCHA”) noted, repo was “recreat[ing] the interest-bearing deposit” that policymakers had supposedly “exorcized” in 1933.²³⁸ The nature of repo as shadow banking was thus crystal clear to market participants at the time. While federal policy barred bank accounts from offering substantial returns, they facilitated safe, short-term lending in other contexts with many of those very attributes.

Over the next few years, activity in repo expanded in tandem with the growth of government securities markets. But the vast majority of that funding came, not from the Fed, but from non-financial corporations.²³⁹ On the other side of those trades, Treasury dealers depended heavily on repo to finance their inventories. A joint report of the Treasury and Federal Reserve observed that repo generally accounted for 55%–70% of dealers’ total funding and sometimes was as high as 85%.²⁴⁰ Put simply, repo provided the majority or the vast majority of financing for Treasury dealers, and repo had been put in place as a dealer financing structure by Fed design.

That meant the health of the Treasury market, and by extension the ability of the federal government to fund itself, became tied to the health of the repo market. As a result, the Fed found itself increasingly sensitive to (and wary of) any risk of disruption. In the late 1960s, another joint study observed that “dealer financing has been a recurrent problem,” and requires “the System [to provide] temporary funds, as it has in the past . . . rather than let a disorderly Government securities market ensue.”²⁴¹

INTERRELATIONS OF THE MONEY MARKET AND GOVERNMENT SECURITIES MARKET 9 (1957). “The rate on repurchase agreements with the Federal Reserve Banks is typically the discount rate . . . the rate on repurchase agreements with corporations and out-of-town banks fluctuates near the discount rate.” *Id.*

236. FED. DEPOSIT INS. CORP., FEDERAL DEPOSIT INSURANCE CORPORATION: THE FIRST FIFTY YEARS 69 (1984).

237. See Gilbert, *supra* note 95, at 25–26.

238. See N.Y. CLEARING HOUSE ASS’N, *supra* note 235, at 34.

239. Roughly 90%–95% of the total funding in the late 1950s came from non-financial corporations. U.S. DEP’T OF THE TREASURY & FED. RSRV., TREASURY-FEDERAL RESERVE STUDY OF THE GOVERNMENT SECURITIES MARKET, pt. III, at 70 (1960).

240. *Id.*

241. U.S. DEP’T OF THE TREASURY & FED. RSRV., JOINT TREASURY-FEDERAL RESERVE STUDY OF THE U.S. GOVERNMENT SECURITIES MARKET 44 (1969).

Later, the failure of a leading Treasury dealer in 1982 led to concerns about certain legal risks in repo contracts.²⁴² For much of the prior thirty years, the market had assumed that, in being a purchase and sale rather than a loan, repo transactions would not be subject to automatic stays in bankruptcy.²⁴³ That gave participants confidence that, in the event of the failure of a counterparty, the affected positions could be liquidated quickly and easily by selling the collateral on the open market. Otherwise, lender liquidity could be locked up for an indeterminant period of time. This special treatment in bankruptcy was one of the features that gave repo its money-like status. Thus, when a federal court in New York surprised markets by applying the automatic stay to repo payables held by Lombard-Wall,²⁴⁴ many lenders simply exited the repo market.²⁴⁵

The Fed once again sprang into action, joining the private sector in an intense lobbying effort to formalize special treatment in bankruptcy for repo. That initially took the form of involvement with the bankruptcy court directly, arguing that applying the automatic stay to repo could have an “adverse impact” their ability to implement monetary policy²⁴⁶ and potentially “increase the cost of financing the public debt of the United States.”²⁴⁷ They went further, alluding to more fundamental risks to the global dollar system itself: given the scale of foreign official reliance on repo, they argued, a ruling jeopardizing its viability could have “international financial implications” resulting in “adverse impact of indeterminate proportion on direct financing of the public debt.”²⁴⁸ When that failed, they went to Congress for an explicit carve-out, including a personal and arguably impassioned appeal from the chairman.²⁴⁹ The resulting legislation, passed in 1984, explicitly exempted a broad range of repo transactions from the

242. *Repo Market Remains Weak as Legal Issues Trouble Many Dealers*, WALL ST. J., Jan. 30, 1984, at 1; Kenneth D. Garbade, *The Evolution of Repo Contracting Conventions in the 1980s*, 12 FED. RSRV. BANK N.Y. ECON. POL'Y REV. 27, 35–36 (2006).

243. Garbade, *supra* note 242, at 32–33.

244. *See id.* at 35; *In re Lombard-Wall Inc.*, 23 B.R. 165 (Bankr. S.D.N.Y. 1982).

245. Michael Quint, *Repo Backing Is Under Cloud*, N.Y. TIMES, Sept. 29, 1982, at D2; *Repo Market Remains Weak as Legal Issues Trouble Many Dealers*, *supra* note 242 at 1.

246. *Fed Amici*, *supra* note 45, at 1.

247. Quint, *supra* note 245.

248. *Fed Amici*, *supra* note 45, at 3, 14.

249. Letter from Paul A. Volker, Chair, Fed. Rsrv. Bd., to Hon. Robert J. Dole, Chair, Subcomm. on the Courts of the Senate Comm. on the Judiciary (Dec. 13, 1982).

automatic stay.²⁵⁰ This exemption, though controversial, remains foundational to the size and reach of the repo market.²⁵¹

As a matter of financing dealers, the Fed was successful. Introducing repo as a money-like way to fund dealing in Treasury securities clearly created deeper and more liquid markets. This is clear in long-run times series of turnover in government debt, which uses average daily trading activity as a proxy for the ease with which investors can buy and sell their holdings. That measure increased far more rapidly than the overall stock of those obligations:²⁵² in 1950, roughly 0.6% of the Treasury market changed hands on a daily basis;²⁵³ by 1960, after repo became the dominant means by which dealers funded their activities, it was 0.8%;²⁵⁴ by 1970, after the Fed significantly loosened its collateral requirements, it was 1.1%;²⁵⁵ and by the mid-2000s, it reached an apex of 13%.²⁵⁶ They also helped globalize the market from less than five billion held by international parties in 1950²⁵⁷ (roughly 3% of marketable Treasury debt outstanding²⁵⁸), to nineteen billion in 1970 (roughly 8%),²⁵⁹ and over two trillion in 2005 (nearly 50%).²⁶⁰ That

250. Debate over the treatment of repo in bankruptcy was triggered by court rulings related to the failure of Lombard-Wall, a government securities dealer, which applied the automatic stay to their repo positions. The Bankruptcy Amendments and Federal Judgeship Act of 1984 exempted repo from the automatic stay provisions of the bankruptcy code. Bankruptcy Amendments and Federal Judgeship Act of 1984, Pub. L. No. 98-353, § 392, 98 Stat. 333, 365. For details, see Garbade, *supra* note 242.

251. For a description of the pros and cons of exemptions from the automatic stay as applied to repo and other qualified financial contracts (“QFCs”) like over-the-counter derivatives, see Darrell Duffie & David Skeel, *A Dialogue on the Costs and Benefits of Automatic Stays for Derivatives and Repurchase Agreements*, in *BANKRUPTCY NOT BAILOUT* (Kenneth E. Scott & John B. Taylor eds., 2013).

252. This is typically taken to be the market value of marketable debt held by the public outstanding, excluding the holdings of the Federal Reserve.

253. J. ECON. COMM., *supra* note 212, at 58.

254. Christopher J. McCurdy, *The Dealer Market for United States Government Securities*, FED. RSRV. BANK N.Y. ECON. POL. REV., Winter 1977, at 35, 41–42.

255. *Id.*

256. *US Treasury Securities Statistics*, SIFMA (July 10, 2023), <https://www.sifma.org/resources/research/us-treasury-securities-statistics/> [<https://perma.cc/T672-TZ5U>].

257. U.S. Dept. of the Treasury, *Ownership of Federal Securities*, TREASURY BULL., Jan. 1964 at 67, 68.

258. *Federal Reserve Bank of Dallas, Market Value of Marketable Treasury Debt*, FRED, FED. RSRV. BANK ST. LOUIS (June 7, 2024), <https://fred.stlouisfed.org/series/MVMTD027MNFBDAL> [<https://perma.cc/9S54-L5JX>].

259. U.S. Dept. of the Treasury, *Ownership of Federal Securities*, TREASURY BULL., at 51, 52 tbl.OFS-2 (1982).

260. U.S. DEPT. OF THE TREASURY, MAJOR FOREIGN HOLDERS OF U.S. TREASURY SECURITIES, <https://treasury.gov/resource-center/data-chart-center/tic/Documents/mfhhis01.txt> [<https://perma.cc/GMW5-AR84>].

required substantial growth in the size and interconnectedness of the market, for which a deep and liquid repo market was seen as essential to that international expansion and the continued attractiveness and utility of U.S. dollar assets in general—and Treasury securities in particular—as a global reserve asset.²⁶¹ In 2023, for example, the repo market was roughly \$2.9 trillion in size on an average day, of which 90% is rolled daily (i.e., overnight maturity) and more than 73% of gross volume was backed by Treasury collateral.²⁶² That makes it among the most systemically important markets to the global financial system as a whole.

C. *The Federal Home Loan Banks: Transforming Mortgage Finance*

We have described several experiments by federal policy makers in specialized monetary augmentation. In addition to the global dollar system and Treasury markets, the modern housing finance system is arguably the result of some of these experiments. In this case, we are referring specifically to the Federal Home Loan Bank (“FHLB”) System. The FHLBs are a government-sponsored network of quasi-central banks²⁶³ created primarily to rescue a collapsing housing market in the 1930s. They do so by offering state-subsidized funding to financial intermediaries engaged in certain activities, specifically (at least in principle) housing finance.²⁶⁴ This is, in effect, a targeted expansion of the money supply to support the expansion and transformation of home lending. In fact, the broad access to long-term, fixed-rate, fully amortizing²⁶⁵ residential mortgages, which many take for granted at this point, owes to the influence of these special purpose moneys, created and supported (implicitly or explicitly) by the state. As Susan Hoffman and Mark Cassell put it in their book, *Mission Expansion in the Federal Home*

261. *Fed Amici*, *supra* note 45, at 13–14.

262. SIFMA RESEARCH, THE US REPO MARKETS: A CHART BOOK (2022), <https://www.sifma.org/wp-content/uploads/2022/02/SIFMA-Research-US-Repo-Markets-Chart-Book-2022.pdf> [<https://perma.cc/VU6J-BUAH>].

263. As we will see later in this Section, the structure, governance, and function of the FHLBs were modeled after the Federal Reserve System, albeit with some key differences.

264. *What We Do: Our Mission*, FHLBANKS, <https://fhlbanks.com/mission/> [<https://perma.cc/H7AY-Q6HA>].

265. Amortizing loans include small principal payments along with interest payments over some portion of their term. “Fully amortizing loans” refers to loans which have zero principal balance at maturity. Such a structure spreads the redemption payment over the lifetime of the loan, avoiding a larger “balloon” payment at the end which can be destabilizing for many retail borrowers.

Loan Bank System, the “[FHLBs] channel a noticeable share of society’s resources to particular substantive policy purposes.”²⁶⁶

Although initially small and narrowly targeted towards that specific goal, the footprint and impact of the FHLB System have grown substantially. FHLBs are now considered a core element of the U.S. financial system—a significant supplier of funding to banks,²⁶⁷ among the largest issuers of U.S. denominated debt in the world,²⁶⁸ and a lender of next-to-last resort during periods of acute stress.²⁶⁹ Their role in the latter regard was prominently on display during the banking turmoil that followed the receivership of Silicon Valley Bank (“SVB”) in March 2023.²⁷⁰ How this arrangement came to be is another useful case study in economic policy executed by monetary means.

Understanding the birth of the FHLB system, requires appreciating the strikingly immature state of the mortgage market in the United States around the time of their conception. In the 1920s, only a bit more than half non-farm residential mortgage debt outstanding was held by institutions—the rest was

266. HOFFMAN & CASSELL, *supra* note 30, at 2.

267. Stefan Gissler & Borghan Narajabad, *The Increased Role of the Federal Home Loan Bank System in Funding Markets, Part 1: Background*, FED. RSRV. (Feb. 26, 2018) [hereinafter Gissler & Narajabad, *Background*], <https://www.federalreserve.gov/econres/notes/feds-notes/the-increased-role-of-the-federal-home-loan-bank-system-in-funding-markets-part-1-background-20171018.html> [https://perma.cc/9C35-GUQV]; Stefan Gissler & Borghan Narajabad, *The Increased Role of the Federal Home Loan Bank System: Part 2: Recent Trends and Potential Drivers*, FED. RSRV. (Feb. 26, 2018), <https://www.federalreserve.gov/econres/notes/feds-notes/the-increased-role-of-the-federal-home-loan-bank-system-in-funding-markets-part-2-20171018.html> [https://perma.cc/HW87-GCRC].

268. In recent years, the FHLBs have been the second largest issuer of U.S. dollar debt in the world, behind only the U.S. Treasury. Bruce Cox & Ashish Tripathy, *How Insurance Companies Benefit from an FHLBank Membership: Q2 2019*, FHLBANK CHICAGO (May 2019), <https://www.fhlbc.com/solutions/details/how-insurance-companies-benefit-from-an-fhlbank-membership-q2-2019> [https://perma.cc/E23X-CWV3]. In fact, during the late 1990s, as Treasury issuance was slowing amidst persistent surpluses, the FHLBs eclipsed the federal government as the largest issuer of U.S. dollar-denominated debt. Press Release, Richard S. Carnell, Assistant Sec’y Treasury (Financial Institutions), U.S. Dept. of the Treasury, “Federal Home Loan Banks” (Sept. 24, 1998), <https://home.treasury.gov/news/press-releases/rr2705> [https://perma.cc/6CSE-37YP].

269. Kathryn Judge, *The Unraveling of the Federal Home Loan Banks*, 41 YALE J. REGUL. (forthcoming 2024), <https://ssrn.com/abstract=4626125> [https://perma.cc/3Z6T-WDKD]; Ashcraft et al., *supra* note 7, at 553–54; Stefan Gissler et al., *Federal Home Loan Banks and Financial Stability*, 9 J. FIN. REGUL. 1, 10 (2023).

270. Kathryn Judge, *The Problem Lender of Second-to-Last Resort*, AM. PROSPECT, Mar. 29, 2023, <https://prospect.org/economy/2023-03-29-problem-lender-federal-home-loan-banks/> [https://perma.cc/2HX3-F6EY]; Robin Wigglesworth, *Reforming America’s Lenders of Second-to-Last Resort*, FIN. TIMES (Nov. 14, 2023), <https://www.ft.com/content/8919735f-12d3-4ae0-9248-727215e3f24e> [https://perma.cc/BY7E-DWW9].

lent by individuals.²⁷¹ Those institutional holdings were dominated by savings and loan associations (“S&Ls”), which represented roughly half the market, with the rest split roughly evenly among life insurance companies, mutual savings banks, and commercial banks.²⁷² Importantly, both national and (most) state banks were highly restricted in what kinds of loans they could originate, mostly reflecting concerns about the liquidity risk posed by residential real estate security in the event of bankruptcy.²⁷³ That led to significant regional variation in the availability of mortgage credit, as evidenced by the rate of non-farm homes pledged as security for mortgage loans.²⁷⁴ Among those, only S&Ls offered the kind of long-term, fully amortizing mortgages we would recognize today.

The roots of the FHLBs lie in the immediate aftermath of the First World War. In January 1919, concerned about a shortage of housing, the Department of Labor under President Wilson convened a conference in Washington to recommend policy options.²⁷⁵ That group quickly settled on expanding the availability of mortgages by supplying new funds for onward lending by savings and loan associations. Their specific solution was a system of rediscount banks modeled after the Land Bank of the State of New York, a state-chartered S&L associated established just a few years earlier.²⁷⁶ That

271. J.E. Morton, URBAN MORTGAGE LENDING: COMPARATIVE MARKETS AND EXPERIENCE 35–36 (1956).

272. *Id.* at 170.

273. Both the Federal Reserve Act and McFadden Acts imposed limits on total national bank exposure to loans secured by real property as a fraction of their time deposit funding. Carl F. Behrens, COMMERCIAL BANK ACTIVITIES IN URBAN MORTGAGE FINANCING 17–19 (1952). This was designed to mitigate liquidity risk by implicitly supporting those assets with less runnable liabilities, giving more time for workouts in the event of borrower default. *See, e.g.*, 68 CONG. REC. 5818 (1927) (discussing the use of time and savings deposits to fund mortgage and other forms of secured credit). Further, while debating the McFadden Act, Loren Wheeler, Republican of Illinois, provided a succinct criticism that encapsulates these concerns: “National banks should have only liquid assets, and there is certainly nothing liquid in a real-estate mortgage having five years to run.” *Id.* at 3955. State banks were less strictly regulated, with significant variation among different jurisdictions, but were very frequently subject to some constraints along the same lines. Behrens, *supra*, at 16 (citing SAMUEL A. WELLDON, NAT’L MONETARY COMM’N, DIGEST OF STATE BANKING STATUTES, S. DOC. NO. 61-353 (1910)).

274. Morton, *supra* note 271, at 20–21.

275. FED. HOME LOAN BANK BD., THE FEDERAL HOME LOAN BANK SYSTEM, 1932–1952, at 57–58 (1952); *Investigation and Study of the Federal Home Loan Bank Board: Hearings Before a Subcomm. of the H. Comm. on Gov’t Operations*, 87th Cong. 613 (1962) [hereinafter *Home Loan Bank Hearings*] (This testimony refers to a 1918 federally sponsored conference but does not provide details. It is possible the witness is referring to the same Department of Labor conference in 1919 referenced in the 1952 report.).

276. *Home Loan Bank Hearings*, *supra* note 275, at 613; *see also* Ernest Bloch, *The Federal Home Loan Bank System*, in FEDERAL CREDIT AGENCIES: A SERIES OF RESEARCH OF STUDIES

push ultimately failed, however, as the housing boom of the Roaring Twenties obviated the need for federal support.

That original proposal came back, however, in the early years of the Great Depression. By the Spring of 1930, only a few months after the Great Crash, President Hoover was already looking for ways to juice the economy. Housing, it occurred to him, was a potential means to reduce unemployment. The problem, as Hoover saw it, was an inadequate credit mechanism for home building—“the most backward section of our whole credit system,” as he described it in a letter to chair of the Federal Reserve in 1930.²⁷⁷ Hoover pressed the Fed to use its monetary powers to support urban mortgages, going so far as to replace some policy makers with more sympathetically minded individuals.²⁷⁸ He met with some success, but as the crisis deepened, Hoover’s approach broadened.

By 1931, the housing market had deteriorated significantly: foreclosures had tripled relative to the mid-1920s, running at more than 500 per day, and the flow of mortgage credit had slowed by more than half.²⁷⁹ Hoover’s make-work program of supporting home mortgage credit had evolved into a crisis management tool. In September, he convened the President’s Conference on Home Building and Home Ownership, co-chaired by his Secretary of Commerce, to find a solution.²⁸⁰ Two proposals were floated. The home builders preferred a central mortgage bank to backstop a nationwide network of local mortgage lenders, while the savings and loan industry preferred a series of federally chartered associations to set standards among state-chartered lenders and create a more consolidated national pool of mortgage credit. In the end, the second proposal formed the basis for the Federal Home Loan Bank Act (“FHLBA”)²⁸¹, which Hoover highlighted in his State of the

PREPARED FOR THE COMMISSION ON MONEY 159, 166–67 (1963). For a description of the Land Bank of the State of New York, see generally JOHN J. DILLON, *THE LAND BANK OF THE STATE OF NEW YORK: A CO-OPERATIVE SYSTEM TO FINANCE REAL ESTATE MORTGAGES FOR LONG TERMS AND TO AMORTIZE THE DEBT BY SMALL ANNUAL PAYMENTS, WITH THE PRIVILEGE OF FULL LIQUIDATION AT ANY TIME* (1914).

277. EARL GLOCK, *THE DEAD PLEDGE: THE ORIGINS OF THE MORTGAGE MARKET AND FEDERAL BAILOUTS, 1913–1939*, at 108 (2021).

278. *Id.* at 108–09.

279. FED. HOME LOAN BANK BD., *SEVENTH ANNUAL REPORT FOR THE PERIOD JULY 1, 1938–JUNE 30, 1939*, at 164, 167 (1940).

280. Gerhard Peters & John T. Woolley, *Herbert Hoover Statement Announcing the White House Conference on Home Building and Home Ownership*, AM. PRESIDENCY PROJECT, <https://www.presidency.ucsb.edu/documents/statement-announcing-the-white-house-conference-home-building-and-home-ownership> [<https://perma.cc/YR4Y-7JAC>].

281. HOFFMANN & CASSELL, *supra* note 30, at 39–45.

Union Address a few days later as a “necessary companion in our financial structure of the Federal Reserve Banks and our Federal Land Banks.”²⁸²

The FHLBA itself was modeled explicitly after Federal Reserve Act (among other reforms).²⁸³ It was structured as a network of twelve regional home loan banks.²⁸⁴ Each of these regional FHLBs was (and still is) structured as a cooperative organization collectively owned by its members. Stock in the FHLBs could not be traded or transferred, but it could be redeemed (initially, with six months’ notice). An initial capital injection of \$125 million was to be provided by the government over a few years, but the plan was to eventually de-nationalize the FHLB System once private subscriptions were sufficient to retire that stock.

Governance of the FHLB System also mirrored that of the Federal Reserve. Each FHLB had its own Board of Directors, and the FHLB System was initially overseen by an FHLB Board. The FHLB Board was authorized to supervise and regulate the activity of the regional banks and their members (e.g., reserve and liquidity requirements). Its members were appointed by the President for staggered six-year terms (the Federal Reserve Act created a Board with five members, each appointed by the President to serve staggered ten-year terms).²⁸⁵

The FHLBs themselves were designed as specialized discount banks.²⁸⁶ They were funded by a mix of capital (including government seed capital and that provided by their members), deposits (both time and demand), and debt issuance. Debt issued by the FHLBs was and remains a joint and several

282. President Herbert Hoover, Third State of the Union Address (Dec. 8, 1931), <https://millercenter.org/the-presidency/presidential-speeches/december-8-1931-third-state-union-address> [<https://perma.cc/3XBP-STBP>].

283. Representative Robert Luce of Massachusetts, who served as sherpa for the first iteration of the FHLBA, recalled that it was “largely drawn from the farm loan and Federal Reserve bills.” That lineage was also reflected in his choice of Chester Morrill, who was involved in writing the original Federal Reserve Act, among other major financial reforms, as the principal drafter of the bill. GLOCK, *supra* note 277, at 131.

284. The FHMLA authorized between eight and twelve regional FHLBs, but early on it was decided to opt for the largest number to maximize their impact. HOFFMANN & CASSELL, *supra* note 30, at 36.

285. Federal Reserve Act, ch. 6, § 10, 38 Stat. 251, 261 (1913).

286. For a discussion of discount markets cotemporaneous to the founding of the Federal Reserve, see Frank A. Vanderlip, *The Rediscount Function of the Regional Banks*, 4 PROC. ACAD. POL. SCI. CITY N.Y. 140, 140–49 (1913) (“A banker who can look into the future and know with absolute certainty that under any circumstances, he can rediscount commercial paper in his portfolio will have removed from his life a good deal of fear. If this measure [the Federal Reserve Act] will do that, do it continually, persistently, it is a marvel that any banker is opposed to it, because the advantage accruing would certainly be very great It means that commercial paper [i.e., paper eligible for rediscount] will become the most liquid asset in the bank’s portfolio.”).

liability of the FHLB System as a whole. Initially it was issued by the individual FHLBs and secured by obligations that were themselves backed by home mortgages held by member institutions. But a 1934 amendment broadened the system's powers significantly, authorizing the FHLBs to individually and collectively issue bonds and other obligations representing joint and several liabilities of the FHLB System as a whole (on terms approved by the FHLB Board).²⁸⁷ Their assets consisted of a mix of "advances," which were wholesale loans to member institutions with flexible terms and maturities as long as ten years,²⁸⁸ as well as cash and investment securities (mostly government obligations, but potentially other categories as well).²⁸⁹ It was a classic case of directed credit intermediation, in which the FHLBs would fund bank holdings of certain assets (specifically mortgages) to incentivize that activity using short-term liabilities wrapped in an implicit government guarantee. As the Board itself described the FHLBs, "In short, they are banks . . . created especially to serve savings and home financing institutions, and as such their lending operations are tailored to suit the business needs of those particular entities."²⁹⁰

The precise composition of that membership was, however, the subject of heated debate. Robert Luce, Republican of Massachusetts and a former Lieutenant Governor of that state, in fact, referred to it as the *most important* issue in debate over the FHLBA.²⁹¹ From the outset, the drafters of the bill were cognizant of the liquidity risk associated with commercial banks extending mortgage credit against real property that had led to significant restrictions in the past.

Representative William F. Stevenson, Democrat of South Carolina, who introduced an amendment excluding banks from membership in the FHLB system,²⁹² summarized the concerns of those in favor of his amendment: banks, he argued, had "no business making" making real estate loans that raise the risk "they can not respond to the demands of the depositors."²⁹³ Other representatives, including Henry Steagall (of Glass-Steagall fame),

287. DEBORAH COEHN & ROBERT FREIER, *THE FEDERAL HOME LOAN BANK SYSTEM* 25 (1980).

288. FED. HOME LOAN BANK BD., *supra* note 275, at 14–15.

289. *Id.* at 30–31.

290. *Id.* at 12.

291. 75 CONG. REC. 13098–99 (1932).

292. This was, in fact, a bit of an about-face. The original FHLBA excluded banks from membership. *Id.* at 13098. They were added by amendment, with a specific reference to time deposits, presumably to mitigate liquidity risk in the same way as commercial bank regulations limited their exposure to a fraction of time deposits. *See id.*

293. *Id.*

objected to that exclusion primarily on the basis of its impact, not on larger institutions, but on the smaller commercial banks that serviced rural communities.²⁹⁴ Ultimately, Stevenson prevailed and the final bill did not allow for commercial banks to join the FHLB System.²⁹⁵

The means by which the FHLBs channel credit is through the terms on which they lend. Specifically, the treatment of different collateral types can provide strong incentives to members institutions looking to fund their activity. As Susan Hoffman and Mark Cassell put it, “Collateral requirements were, in the original statute, and remain today, the lever Congress uses to steer member institutions’ lending toward the public’s purposes.”²⁹⁶ In fact, the specific desire to steer mortgages in the direction of longer terms and full amortization was part of the original intent of the Act itself.²⁹⁷

In the early years of the FHLB System, policy makers used this tool to effect significant changes to standards in mortgage lending. They were specifically focused on encouraging greater availability of longer-term amortizing mortgages. In the 1920s, the mortgage market was dominated by shorter (less than ten years to maturity at origination), non- or partially amortizing mortgages issued by life insurance companies and commercial banks.²⁹⁸ The FHLB Board sought to remedy the situation by targeting its advances at longer-term, fully amortizing contracts. The Board in fact went further, offering better terms on advances secured by smaller balance mortgages to target credit more directly at working class families.²⁹⁹ Their efforts were largely successful: by the 1940s, mortgage lending had shifted significantly in favor of ten- to twenty-year maturity, fully amortizing

294. *Id.* at 13099 (statement of Rep. Robert Luce) (“Let it be borne in mind that there are thousands of small communities where the local bank is the only resource of the farmer or shopkeeper who has need to borrow, and that many homes would not be built in village or country if mortgages could not be placed in such a bank. If the proposed system is to help the small home owner everywhere, it should take in the banks everywhere.”).

295. The law did allow for borrowing by non-members regulated under state or national banking law, provided their mortgages were, in the judgment of the FHLB Board, long-term and its reliance on time deposits, also in the judgment of the Board, “warrant[ed] it making such loans.” Federal Home Loan Bank Act, 12 U.S.C. § 1424(a)(1)(C). But this provision appears to have been very narrowly construed by the FHLB Board and not used much, if at all, in practice. In 1952, for example, the FHLB Board noted “The law provides for non-member institutions to get loans under special circumstances; very few loans, however, have been made under this provision.” FED. HOME LOAN BANK BD., *supra* note 275, at 13 n.6.

296. HOFFMANN & CASSELL, *supra* note 30, at 36; *see* FED. HOME LOAN BANK BD., *supra* note 275, at 16–17.

297. *E.g.*, 75 CONG. REC. 12725 (1932) (statement of Rep. William F. Stevenson) (“These loans to get preference must be long-time amortized mortgage loans.”).

298. MORTON, *supra* note 271, at 151–52 tbls.A-11 & A-12.

299. HOFFMANN & CASSELL, *supra* note 30, at 36.

schedules issued by S&Ls.³⁰⁰ To avoid further destabilizing the mortgage market, the FHLBs continued to accept pre-Depression-era mortgages as collateral, but they would only do so on somewhat less attractive terms.³⁰¹

Thus, the FHLBs represent another case of special purpose monies along the lines of the other examples in this Article. In the case of the FHLBs, the policy goal was greater availability, not just of mortgage credit in general, but in a format that was more consumer-friendly than the private market provided when left to its own devices. The FHLBs themselves were engaged in a version of liquidity and maturity transformation, issuing debt, often short-term, with an implicit government guarantee to fund bank holdings of longer-term retail lending. That allowed them to source private capital and savings from a variety of sources and redeploy it in a more directed format through their member institutions to further broader domestic policy goals.

While conceptually similar to the Federal Reserve, unlike a central bank the FHLBs had to compete in private markets. Treasury provided \$125 million of start-up capital to get things started.³⁰² As noted earlier, the intention was to slowly de-nationalize the FHLB System through member bank subscriptions once paid-in private capital exceeded the Treasury's initial investment. To augment that capital, Section 11 of the FHMLA authorized the FHLBs to take on leverage as well.³⁰³ As “instrumentalities of the United States,”³⁰⁴ the FHLBs themselves had valuable tax exemptions, and investors in their debt instruments could claim similar treatment for those holdings.³⁰⁵ Although the FHLBs did not have the explicit backing of the federal government, this designation was taken to be an implicit guarantee³⁰⁶—an assumption that persists to this day.³⁰⁷ That perception was

300. MORTON, *supra* note 271.

301. HOFFMANN & CASSELL, *supra* note 30, at 36.

302. Federal Home Loan Bank Act, ch. 522, § 6(f), 47 Stat. 725, 728 (1932) (codified as amended at 12 U.S.C. §§ 1421–1449).

303. *Id.* § 11.

304. Federal Home Loan Bank Liabilities, 76 Fed. Reg. 18366, 18367 (Apr. 4, 2011) (to be codified as 12 C.F.R. pt. 1270).

305. Their debtholders remained subject to surtaxes as well as estate, inheritance, and gift taxes. Federal Home Loan Bank Act § 13.

306. *Creation of a System of Federal Home Loan Banks: Hearing on S. 2959 Before the Subcomm. of the S. Comm. on Banking & Currency*, 72d Cong. 585 (1932) (statement of Thomas F. Clark, President, Mortgage Bankers' Association of America).

307. *E.g.*, CONG. BUDGET OFF., FEDERAL SUBSIDIES AND THE HOUSING GSES 1 (2001), <https://www.cbo.gov/sites/default/files/107th-congress-2001-2002/reports/gses.pdf> [<https://perma.cc/4BH7-2MEN>]; CONG. BUDGET OFF., THE ROLE OF FEDERAL HOME LOAN BANKS IN THE FINANCIAL SYSTEM 1 (2024), <https://www.cbo.gov/system/files/2024-03/59712-FHLB.pdf> [<https://perma.cc/YZQ6-NZ53>]; Ashcraft et al., *supra* note 7, at 553.

likely reinforced by the Securities Exchange Act just a couple of years later, which included their debt as “exempted securities” alongside Treasury bonds.³⁰⁸

In the first few years of its operation, the FHLBs did little more than deploy government capital.³⁰⁹ That was in part due simply to bad timing. By 1932, restoring confidence in the savings and loan industry was a prerequisite to expanding access to mortgage credit. The FHLBs were simply not designed for that task.³¹⁰ Instead, in June 1933 Congress created the Home Owners’ Loan Corporation (“HOLC”) which issued explicitly government-guaranteed debt to fund the purchase of delinquent mortgages.³¹¹ That amounted to an asset substitution exercise which extracted toxic loans from S&L balance sheets and replaced them with sovereign credit. In total, the HOLC accumulated over \$3 billion of mortgage debt, or roughly twenty percent of the national total at the time. The largest share of those exchanges were S&L holdings (\$770 million or 10%).³¹²

By 1937, however, the Depression was ebbing and housing markets were recovering alongside a broader upswing in business activity.³¹³ That came with a surge in demand for advances from FHLB member institutions; with private capital subscriptions still growing slowly, the FHLB Board had to turn to capital markets for the first time.³¹⁴ The Board issued a bit less than \$25 million of one-year maturity consolidated debentures in April of that year³¹⁵ and found substantial demand for its debt.³¹⁶ The Board was also careful to note that its overall leverage was limited by statute (to five times

308. Securities Exchange Act of 1934, 15 U.S.C. § 78c(a)(12)(A). FHLB debt would fall under “securities which are issued or guaranteed . . . by corporations in which the United States has a direct or indirect interest.” § 78c(a)(42)(B).

309. As of the end of fiscal year 1936, for example, the FHLB capital was still dominated by U.S. government shares, which totaled just under \$125 million compared to roughly \$25 million of paid-in member capital. FED. HOME LOAN BANK BD., FOURTH ANNUAL REPORT OF THE FEDERAL HOME LOAN BANK BOARD 114 (1937).

310. Bloch, *supra* note 276, at 169–71.

311. Home Owners’ Loan Act of 1933, ch. 64, 48 Stat. 128 (codified as amended at 12 U.S.C. §§ 1461–1468).

312. For an overview, see HOME LOAN BANK BD., FINAL REPORT TO THE CONGRESS OF THE UNITED STATES RELATING TO THE HOME OWNERS’ LOAN CORPORATION (1952).

313. This can be seen, for example, in the recovery in real gross domestic product and declines in the unemployment rate. *FRED Graph*, FRED, <https://fred.stlouisfed.org/graph/?id=M0892AUSM156SNBR,Q0896AUSQ240SNBR> [<https://perma.cc/MR29-LXMQ>].

314. FED. HOME LOAN BANK BD., FIFTH ANNUAL REPORT OF THE FEDERAL HOME LOAN BANK BOARD 15 (1938).

315. *Id.* at 33.

316. The FHLB Board cited several times oversubscribed auctions as evidence for the depth of demand for its debt. *See id.*

paid in capital) and that additional limitations had been placed on the issuance of short-term debt.³¹⁷

With leverage on the table, the leadership of the FHLB System looked for additional ways to enhance the moneyness of its debt. In the spring of 1939, John H. Fahey, chair of the FHLB Board at the time, testified on a series of proposed amendments to the FHMLA in front of the House Committee on Banking and the Currency. Among a variety of recommendations, he advocated for a provision authorizing the Secretary of the Treasury to purchase FHLB debentures in an “emergency,”³¹⁸ funded by the issuance of additional Treasury bonds.³¹⁹ Doing so, it was thought, would allow the FHLB System to enjoy the promise of backstop funding through direct obligations of the federal government. Although limited to \$850 million, that was far larger than the size of the consolidated FHLB balance sheet at that time (roughly \$296 million as of mid-1939, funded in part by \$90 million of consolidated obligations).³²⁰ Fahey alluded to such a standing commitment as likely to be viewed as a de facto government guaranty.³²¹

As the Second World War rapidly restarted economic activity, the growth of the FHLB System accelerated dramatically. By the late 1940s, the consolidated FHLB balance sheet had more than doubled relative to a decade earlier, with advances outstanding growing more than 350%. This time, that expansion came with a substantial increase in leverage, with the leverage ratio (capital stock relative to total assets) for the FHLB System declining from roughly 65% in 1946 to 35% in 1949.³²²

The acceleration in private capital subscriptions put pressure on Congress to de-nationalize the FHLB System. But increased leverage also increased the value of a Treasury backstop. To that end, Congress made another attempt

317. *See id.* at 15.

318. *See Amendments of 1939 to Federal Home Loan Bank Act: Hearing on H.R. 5535 Before the H. Comm. on Banking and Currency, 76th Cong. 3–4 (1939)* [hereinafter *Hearing on H.R. 5535*] (statement of John H. Fahey, Chairman, Federal Home Loan Bank Board). The Federal Open Market Committee had previously used “emergency” to refer to a potential escalation of hostilities in Europe. *E.g.*, FED. OPEN MKT. COMM., MEETING MINUTES FOR SEPTEMBER 21, 1938, at 3–4 (1938).

319. *Id.* at 6–7.

320. FED. HOME LOAN BANK BD., *supra* note 279, at 62, 65.

321. “Although as a practical matter, I think that the Government guaranty in such an emergency would be just as effective as the Treasury taking it over. That was the experience of the Home Owners’ Loan Corporation bonds, as you know.” *Hearing on H.R. 5535, supra* note 318, at 156 (statement of John H. Fahey). As noted earlier, debt issued by the HOLC carried an explicit federal guarantee. HOME LOAN BANK BD., *supra* note 312, at 4–5.

322. HOME LOAN BANK BD., FOURTEENTH ANNUAL REPORT OF THE FEDERAL HOME LOAN BANK ADMINISTRATION, H.R. DOC. NO. 80-432, at 46–47 (1947).

to authorize Treasury purchases of FHLB debt. Testifying before the House Committee on Banking and the Currency, Raymond M. Foley, Administrator of the Housing and Home Finance Agency, argued that this was the “most important piece” of the proposed legislation.³²³ This time the limit was set to \$1 billion, a modestly higher figure than the 1939 legislation but a smaller proportion of FHLB System assets at the time.³²⁴ The next year, William K. Divers, chair of the FHLB Board, reiterated most of Foley’s arguments, describing the purchase authority as “highly desirable.”³²⁵ Divers emphasized that FHLB debt was not directly guaranteed by the federal government while highlighting the signaling value of “Government support”—in fact, he argued, the mere existence of such assurances might render actual purchases unnecessary in practice.³²⁶

Divers analogized the proposed arrangement to that which was previously constructed for the commercial banking system with the introduction of the Federal Reserve. In this context, the Treasury would act as an ersatz central bank to the FHLB System, maintaining the elasticity of its balance sheet when private markets could not. Along similar lines, both Fahey and Divers were careful to focus on the utility of the Treasury purchase authority during times of stress or, once again and potentially imbued with greater symbolic meaning, an “emergency.”³²⁷ But the proposed relationship between the FHLB System and the Treasury was arguably closer than that. Treasury purchase authority gave the FHLB System more direct access to the credit of

323. *Amendments to the National Housing Act, Federal Home Loan Act, and Homeowners’ Act of 1933: Hearing on H.R. 1723, H.R. 4701, H.R. 5595, H.R. 5596 Before the H. Comm. on Banking & Currency, 81st Cong. 91 (1959)* [hereinafter *Hearing on H.R. 1723 et al.*] (statement of Raymond M. Foley, Administrator, Housing and Home Finance Agency).

324. A \$1 billion purchase authorization was comparable to total consolidated assets across the FHLB System as of 1950. HOME LOAN BANK BD., SUMMARY OF OPERATIONS FOR 1950, at 11 (1951). By comparison, in 1939 a \$850 million authorization would have been nearly three times total system assets. FED. HOME LOAN BANK BD., *supra* note 279, at 177.

325. *A Bill to Amend the Federal Home Loan Bank Act, as Amended, and Title IV of the National Housing Act, as Amended, and for other Purposes: Hearing on H.R. 6743 Before the H. Comm. on Banking & Currency, 81st Cong. 6 (1950)* [hereinafter *Hearing on H.R. 6743*] (statement of William K. Divers, Chairman, Home Loan Board).

326. *See id.* at 6–7.

327. This terminology was consistent with, and possibly intended as a reference to, the Federal Reserve’s position on open market operations in long-term Treasuries in the post-Accord world. The Ad Hoc Subcommittee on the Government Securities Market, chaired by Fed Chairman Bill Martin, had argued that “the only justification for System intervention [in Treasury securities longer than one year] would be to correct disorderly conditions in the market resulting from an emergency.” *See The Federal Reserve System After Fifty Years: Hearings on H.R. 3783, H.R. 9631, H.R. 9685, H.R. 9686, H.R. 9687, H.R. 9749 Before the Subcomm. on Domestic Fin. of the H. Comm. on Banking & Currency, 88th Cong. 2046 (1964).*

the United States—a sharp contrast to the franchise arrangement between commercial banks and the state.³²⁸ As Wright Patman, eventually a towering figure in the post-War banking regulatory framework,³²⁹ put it during the first series of Congressional debates in 1939–1940, the purchase authority amounted to “permitting one of the most deserving classes in America [the FHLB System] to use the Government’s credit.”³³⁰

The provision of a backstop in times of stress has in subsequent years come to be associated with an implicit government guarantee.³³¹ This was clearly recognized at the time. By the second half of 1950, after the Spence Act was signed into law by President Truman, FHLB debentures were trading much closer to securities either issued directly by the Treasury or carrying an explicit guarantee. As *The New York Times* later put it, FHLB debentures were considered to be the “closest thing to a Government bond.”³³²

From there, things went largely according to plan. In 1933, the first full year of FHLB operations, roughly 2,000 associations representing 37% of all federal savings and loans (“S&L”) assets were members of the FHLB System; by 1950, that number had grown to 3,900 associations covering 92% of total assets; and by 1960, 4,700 associations covering 97% of all S&L assets were FHLB members.³³³ Following the passage of the Spence Act, total consolidated system assets (which were dominated by advances) largely kept pace with the S&L industry more generally, holding around 4%–5% of S&L assets until the mid-1960s. It did so, however, by taking on more leverage: as of 1951, after government capital was fully redeemed, the FHLB System’s leverage ratio (total capital as a share of total assets) stood at roughly 25%; by the mid-1960s, that ratio had declined to 15%.

It was around that time, as inflationary pressure started pulling short-term interest rates higher, that the FHLB System footprint started to grow more rapidly. With the interest rate they could pay on deposits limited by Regulation Q, S&Ls increasingly turned to advances to fund growing

328. See generally, e.g., Menand, *supra* note 48, 979–80 (discussing the franchise nature of banking).

329. See generally John E. Owens, *Extreme Advocacy Leadership in the Pre-Reform House: Wright Patman and the House Banking and Currency Committee*, 15 BRIT. J. POL. SCI. 187 (1985).

330. 76 CONG. REC. 7315 (1940) (statement of Rep. Wright Patman).

331. Wayne Passmore & Alexander H. von Hafften, *GSE Guarantees, Financial Stability and Home Equity Accumulation*, FED. RSRV. BANK N.Y. ECON. POL’Y REV., Dec. 2018, at 11; *Must Government Remain a Backstop for Fannie and Freddie?*, KNOWLEDGE AT WHARTON (May 24, 2016), https://knowledge.wharton.upenn.edu/article/160523_the_future_of_fanniemaec_and_freddiemac-andrew-davidson/ [<https://perma.cc/4358-8Z4T>].

332. *Home Loan Bonds*, N.Y. TIMES, July 12, 1966, at 57.

333. FED. HOME LOAN BANK BD., SAVINGS AND HOME FINANCE SOURCE BOOK 7 (1983).

mortgage books. Congress attempted to reduce its reliance on this quasi-government funding by transferring regulatory authority over S&L deposit rates to the FHLB Board as part of the Interest Rate Control Act (“IRCA”) of 1966.³³⁴ At the same time, however, the IRCA included measures designed to further the growth of the FHLB System so it could scale along with the banking system. Rather than do so explicitly, for example by providing new government capital, Congress opted for a more indirect approach: amending the Federal Reserve Act to authorize central bank purchases of FHLB debt in the open market.³³⁵

Authorizing the Fed to buy FHLB debt was intended to provide that market with an official backstop³³⁶—either through outright purchases of dealer holdings or financing them through repurchase agreements.³³⁷ That new authority was, in fact, initially promoted from within the FHLB, specifically by the chair of the FHLB Board, John Horne.³³⁸ Horne hoped that a central bank backstop would give investors greater confidence in the liquidity and credit of their bonds, deepening and broadening investor demand and, hopefully, facilitating a larger outstanding stock. To that end, the FOMC specifically discussed using that authority to support underwriting syndicates marketing FHLB debt.³³⁹ The result, if all went according to plan, was greater capacity to grow the FHLB System by taking on more leverage.

Even if rarely used, the mere presence of such backstops has, as was the case with the Treasury purchase authority granted in 1950, been assumed to exert a strong influence over the market through their signaling power. Horne thought such an expanded authority would put the FHLBs “in a better position to relieve some of the strain on the mortgage market” by increasing

334. See Interest Rate Control Act, Pub. L. No. 89-597, 80 Stat. 823 (1966).

335. RENEE HALTOM & ROBERT SHARP, THE FIRST TIME THE FED BOUGHT GSE DEBT 2 (2014), https://www.richmondfed.org/~media/richmondfedorg/publications/research/economic_brief/2014/pdf/eb_14-04.pdf [<https://perma.cc/3WNS-8VBY>] (illustrating the first time the Fed was authorized to purchase FHLB debts).

336. See *id.*; FED. HOME LOAN BANK BD., THIRTY-FOURTH ANNUAL REPORT 39 (1966).

337. In FOMC discussions, Alan Holmes, who was the Manager of the System Open Market Account at the time, and who was tasked with implementing monetary policy as directed by the FOMC, noted that if FHLB debt was made eligible for open market operations, lending against that collateral through repurchase agreements with dealer firms would likely be more straightforward to operationalize. FED. OPEN MRKT. COMM., MEETING MINUTES FOR JUNE 7, at 108 (1966), <https://www.federalreserve.gov/monetarypolicy/files/fomchistmin19660607.pdf> [<https://perma.cc/4P9A-BH97>].

338. Horne specifically complained about limits on how frequently FHLB debentures could be issued and “how big a chunk of funds we [the FHLB System] can obtain.” Richard F. Janssen, *Horne’s Emergency Plan*, WALL ST. J., June 13, 1966.

339. FED. OPEN MKT. COMM., *supra* note 337, at 108.

their borrowing capacity in capital markets.³⁴⁰ *The Wall Street Journal* described this as empowering the Federal Reserve to “pump newly created money directly into the savings and loan system.”³⁴¹ As noted earlier, this “newly created money” could be targeted at the housing market infrastructure of the FHLB System’s advances and its collateral requirements.

Not everyone was on board for harnessing the central bank in this way. The Fed’s own leadership was, in fact, deeply skeptical of the wisdom of Horne’s plan.³⁴² Bill Martin as well as most other members of the FOMC were uncomfortable with the focused nature of the proposed authority, preferring that Congress avoid singling out FHLB debt among the other agency securities lacking an explicit guarantee.³⁴³ There was also broad agreement that, regardless of their policy preferences, expanded authority would likely come with significant political pressure to use it.³⁴⁴ Martin shared those concerns, albeit somewhat more obliquely, with Congress in his June 8 testimony: even if the Fed was reluctant to buy FHLB debt at first, “When you give authority to buy a given instrumentality, the pressure is going to be there to [buy] it.”³⁴⁵ Congress was less moved by those concerns, and passed the IRCA with the expanded Fed purchase authority in September 1966.³⁴⁶

From there the FHLB System began to grow much more rapidly, both in absolute terms and compared to its member institutions. By the early 1980s, consolidated assets hit more than \$60 billion, a more than ten-fold expansion since the 1966 Act and noticeably more rapid than the growth of S&Ls eligible for membership. They did so by more than doubling their leverage, mostly through the sale of consolidated obligations which, at \$49 billion outstanding, made up more than 71% of their funding.³⁴⁷

340. *To Eliminate Unsound Competition for Savings and Time Deposits: Hearing Before the H. Comm. on Banking & Currency on H.R. 14026*, 89th Cong. 670 (1966) [hereinafter *Hearing on H.R. 14026*].

341. *Id.* at 669.

342. This may have been anticipated. Martin was only notified of the proposal a couple of days before scheduled testimony in front of Patman and the Committee. The FOMC discussed the issue extensively at their meeting the next day. *See* FED. OPEN MKT. COMM., *supra* note 337, at 104.

343. Martin was quoted as having “considerable trepidation about the proposal.” *Id.* at 109.

344. *Id.*

345. *Hearing on H.R. 14026*, *supra* note 340, at 503. Henry Reuss, Democrat of Wisconsin, went so far as to suggest the Fed swap some of its holdings of government securities for FHLB debentures to support the agency while keeping a stable money supply. *Id.* at 503–04.

346. Interest Rate Control Act, Pub. L. No. 89-597, 80 Stat. 823 (1966).

347. *See* FED. HOME LOAN BANK BD., *supra* note 333, at 4.

The next major challenge to the FHLB System came with what became later known as the S&L crisis.³⁴⁸ By the late 1970s, the dramatic rise in short-term interest rates amidst rampant inflation was putting increasing stress on thrifts and other savings institutions. The S&Ls, owing in large part to their holdings of long-term fixed-rate mortgages, were most acutely affected. As failures accelerated over the course of the 1980s, there was increasing pressure on Congress to intervene and staunch the bleeding. In the end, roughly half of all thrifts in the United States, representing more than \$500 billion in assets, were resolved or acquired. The total cost of that cleanup is now estimated at more than \$150 billion, more than 80% of which was shouldered by taxpayers.³⁴⁹

Although FHLB debt itself was not particularly stressed by this episode,³⁵⁰ it did raise concerns about the efficacy of its supervision as well as the focus of its mission. A report written by the General Accounting Office (“GAO”) in 1988 noted two troubling facts for legislators.³⁵¹ First, undercapitalized and insolvent thrifts appeared to disproportionately rely on advances for funding. Second, thrifts that relied more heavily on advances did not clearly allocate that funding towards mortgage credit. A Congressional report issued later cited this study as raising questions as to whether the FHLB System was “living up to its primary role.”³⁵²

Congress addressed these concerns with the Financial Institutions Reform, Recovery and Enforcement Act (“FIRREA”) of 1989.³⁵³ A full analysis of its

348. Timothy Curry & Lynn Shibut, *The Cost of the Savings and Loan Crisis: Truth and Consequences*, 13 FDIC BANKING REV., no. 2, 2000, at 26.

349. *Id.* at 31.

350. The pricing of FHLB consolidated obligations was not particularly sensitive to the level of stress among savings and loan organizations over the course of the 1980s. In 1988, for example, spreads between FHLB debentures and U.S. government debt of the same maturity narrowed despite that year representing the peak for failures of FSLIC-insured institutions. *Federal Deposit Insurance Corporation, Failures and Assistance Transactions of All Institutions by Federal Savings and Loan Insurance Corporation (FSLIC) for the United States and Other Areas*, FRED, FED. RSRV. BANK ST. LOUIS (2024), <https://fred.stlouisfed.org/series/BKIFSCA641N> [<https://perma.cc/2MGT-D9TC>]. New York Fed staff took this to indicate that “investors apparently had confidence in FHLB securities, even though such securities do not have a formal government guarantee.” *Monetary Policy and Open Market Options During 1988*, FRBNY Q. REV., Winter/Spring 1989, at 83, 88 (1989), https://www.newyorkfed.org/medialibrary/media/research/quarterly_review/1989v14/v14n1article7.pdf [<https://perma.cc/4XZJ-5YYP>].

351. U.S. GEN. ACCT. OFF., GAO/GGD-88-46BR, THRIFT INDUSTRY: FEDERAL HOME LOAN BANK ADVANCES PROGRAM 1–2 (1988).

352. H.R. REP. NO. 101-54, pt. 1, at 456 (1989).

353. Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. No. 101-73, 103 Stat. 183.

extensive provisions is beyond the scope of this Article.³⁵⁴ But its ultimate impact on the FHLB System, as described by Susan Hoffman and Mark Cassell, was to propel subsequent rapid growth. There are two specific and related elements of FIRREA responsible for that growth and mission expansion.³⁵⁵

First, a key catalyst was the search to find sources of revenue to offset the cost of the S&L resolution to taxpayers. As FIRREA was being debated, it was clear that the costs of that resolution would be far greater than the resources on hand at the Federal Savings and Loan Insurance Company (“FSLIC”).³⁵⁶ Garnishing the income of the FHLB System was a plausible offset, and more easily justifiable given their perceived responsibility as regulatory of the S&L industry prior to the crisis. FIRREA specifically mandated them to contribute roughly 20% of their earnings, and possibly more, to the cause.³⁵⁷

354. See, e.g., Anthony C. Providenti Jr., *Playing with FIRREA, Not Getting Burned: Statutory Overview of the Financial Institutions Reform, Recovery and Enforcement Act of 1989*, 59 FORDHAM L. REV. (ANN. SURV. ISSUE) S323 (1991); Alex M. Azzar II, Note, *FIRREA: Controlling Savings and Loan Association Credit Risk Through Capital Standards and Asset Restrictions*, 100 YALE L.J. 149 (1990); 1 FDIC, HISTORY OF THE EIGHTIES—LESSONS FOR THE FUTURE (1997); LAWRENCE J. WHITE, THE S&L DEBACLE: PUBLIC POLICY LESSONS FOR BANK AND THRIFT REGULATION (1991).

355. HOFFMAN & CASSELL, *supra* note 30, at 49–59.

356. The FSLIC was created by the National Housing Act of 1934 to insure the liabilities of savings and loan associations along similar lines to insurance for commercial bank deposits provided by the FDIC. National Housing Act, ch. 847, §§ 402–403, 48 Stat. 1246, 1256–58 (1934). By mid-1989, as the costs of S&L failures piled up, the FLSIC’s financial condition was “severely distressed,” and it was clear that “substantial financial assistance” was needed. U.S. GEN. ACCT. OFF., GAO/T-AFMD-88-12, FEDERAL SAVINGS & LOAN INSURANCE CORPORATION—CURRENT FINANCIAL CONDITION AND OUTLOOK 6 (1988) (statement of Frederick D. Wolf, Director, Accounting and Financial Management Division). As of the time FIRREA was being actively debated, the estimated cost of S&L resolutions was \$143 billion, of which \$50 billion of new funds would be required over two to three years and another \$33 billion thereafter. That was orders of magnitude more than was on hand at the FSLIC. Frederick Wolf of the General Accounting Office described it was a “financial crisis” for FSLIC and the industry. *Financing the S&L Rescue Package: Hearings Before the H. Comm. on Banking, Finance, & Urban Affs.*, 101st Cong. 26 (1989) (statement of Frederick D. Wolf, Director, Accounting and Financial Management Division).

357. FIRREA created a structure in which the Resolution Trust Company (“RTC”), the vehicle created to fund the S&L resolution costs, was funded by the Resolution Funding Corporation (REFCORP), an off-budget entity operated by the FHLBs with authorization to issue up to \$30 billion of long-term debt, zero coupon, direct obligations of the U.S. government. The FHLBs were required by statute to contribute a one-time lump sum of \$1.2 billion as well as an annual payment of the greater of \$300 million and 20% of net earnings to support REFCORP, which complemented \$18.8 billion from the Treasury itself. GARY SHORTER, CONG. RSCH. SERV., RS22959, THE RESOLUTION TRUST CORPORATION: HISTORICAL ANALYSIS 1–2 (2008); H.R. REP.

The need to shoulder those costs created, in turn, an incentive to find ways to increase the earning potential of the FHLB System.³⁵⁸ One approach was to broaden its potential membership to include other mortgage lenders, including commercial banks.³⁵⁹ Total S&L assets at the time totaled roughly \$1.4 trillion; commercial banks, at over \$3 trillion³⁶⁰ represented a much larger potential pool of lending income. Expanded membership was promoted heavily by industry groups eager to access subsidized funding for their mortgage portfolios³⁶¹ and was supported by leadership of the FHLB Board.³⁶² While it may not have been recognized at the time, that unusual alignment of interests created a powerful cocktail for accelerated growth and mission expansion among the FHLBs.³⁶³

Within a year or so of FIRREA's passage, the FHLB System was involved in an "aggressive campaign" to expand its membership.³⁶⁴ The FHLB Board supplemented that outreach with permissive eligibility guidelines. Although FIRREA required commercial banks seeking membership to show that residential mortgages made up at least 10% of their total assets, regulations passed in 1993 allowed banks to count MBS, mortgage derivatives (e.g., collateralized mortgage obligations ("CMOs")), and "certain other assets"

No. 101-222, at 232 (1989). The \$300 million figure was chosen to be roughly 20% of net earnings at the time FIRREA was passed. S. REP. NO. 101-19, at 33 (1989).

358. Numerous members of Congress and representatives of industry groups expressed this concern in hearings held roughly a year after FIRREA was passed. *Financial Institutions Reform, Recovery and Enforcement Act of 1989, FIRREA, and Its Impact on The Federal Home Loan Bank System: Hearings Before the H. Subcomm. on Gen. Oversight & Investigations of the Comm. on Banking, Fin., & Urban Affs.*, 101st Cong. 2, 6, 8, 31, 96-97 (1990) [hereinafter *FIRREA Hearings*].

359. "It has become clear that, given the annual fixed contribution the Federal Home Loan Banks must make under FIRREA toward the resolution of troubled and failed saving and loans, the only viable way for Federal Home Loan Banks to raise new capital and maintain current levels of dividend payments to their stockholders is through expanded membership." *Id.* at 2 (statement of Carroll Hubbard, Chairman, Subcomm. on Gen. Oversight and Investigations of the H. Comm. on Banking, Fin., and Urban Affs.). "Expanded membership is the only realistic source of increased earnings." *Id.* at 8 (statement of Charles Lee Thiemann, President, Federal Home Loan Bank of Cincinnati).

360. *Board of Governors of the Federal Reserve System (US): Total Assets, All Commercial Banks*, FRED: FED. RSRV. BANK ST. LOUIS, <https://fred.stlouisfed.org/series/TLAACBW027SBOG> [<https://perma.cc/364C-4NNH>].

361. That included testimony and statements from representatives of the American Banker's Association, National Council of Savings Institutions, U.S League of Savings Institutions, and the National Association of Realtors. *Hearings Before the H. Comm. on Banking, Fin., & Urb. Affs.*, 101st Cong 348-49, 372, 459-60, 602 (1989).

362. *Hearings Before the H. Comm. on Banking, Fin., & Urban Affs.*, 101st Cong. 81 (1989) (statement of M. Danny Wall, Chairman, Federal Home Loan Bank Board).

363. HOFFMAN & CASSELL, *supra* note 30, at 114.

364. *FIRREA Hearings*, *supra* note 358, at 72.

(on a “case-by-case basis”) towards that total.³⁶⁵ What’s more, that approval was based solely on the most recently available financial statement; once approved, members were not required to maintain their 10% allocation to residential lending going forward.³⁶⁶

Although the FHLB System shrank along with the economic contraction of the early 1990s, the FHLBs grew explosively as the environment stabilized. By 2000, consolidated total assets were more than \$650 billion, a more than four-fold increase relative to the low point of 1991. Most of that growth was fueled by the recruitment of commercial banks—by 1993, only a few years after the passage of the FIRREA, S&Ls no longer made up a majority of FHLB membership.³⁶⁷ Once again, that growth was achieved by taking on additional leverage, which increased by 35% over the same period.³⁶⁸ In fact, by the late 1990s the FHLBs were the single largest issuer of U.S. dollar-denominated debt in the world.³⁶⁹ By that point, many senior officials of the U.S. government worried that the FHLBs were increasingly “subsidized capital” in search of short-term, arbitrage profits,³⁷⁰ thereby “eroding the basic premise of the [FHLB] System.”³⁷¹

The role of the GSEs—particularly Fannie Mae and Freddie Mac, but also the FHLBs—in imbalances that ultimately led to the 2008 GFC have been extensively analyzed elsewhere.³⁷² We will not go over that well-trodden

365. 50 Fed. Reg. 43523 (Aug. 17, 1993); FED. HOUS. FIN. BD., MEMBERSHIP APPLICATION GUIDELINES ch. II-D, at 3 (Nov. 17, 1993).

366. FED. HOUS. FIN. BD., *supra* note 365, at 2.

367. CONG. BUDGET OFF., 103D CONG., THE FEDERAL HOME LOAN BANKS IN THE HOUSING FINANCE SYSTEM (1993); *see also* HOFFMAN & CASSELL, *supra* note 30, at 54–55.

368. U.S. GOV’T ACCOUNTABILITY OFF., GAO-02-428SP, PERFORMANCE AND ACCOUNTABILITY REPORT (2001), <https://www.gao.gov/assets/a201971.html> [<https://perma.cc/J469-3LVN>].

369. HOFFMAN & CASSELL, *supra* note 30, at 5.

370. In Congressional testimony, Rubin referred to “curtail[ing] the [FHLB] System’s use of subsidized capital to earn arbitrage profits.” Press Release, Robert E. Rubin, Treasury Sec’y, Statement to the Senate Banking Committee (June 17, 1998), <https://home.treasury.gov/news/press-releases/rr2520> [<https://perma.cc/Y97N-MH3P>]. The next year, he noted: “Indeed, we believe that the [FHLB] System should focus on such lending, not on using taxpayer funds for arbitrage activities and overnight lending which currently constitute so much of its activities.” Press Release, Robert E. Rubin, Treasury Sec’y, Testimony Before the Senate Banking Committee (Feb. 24, 1999), <https://home.treasury.gov/news/press-releases/rr2973> [<https://perma.cc/Q6FG-JVSF>].

371. Press Release, Richard S. Carnell, U.S. Dep’t of the Treasury, Remarks Before the American Enterprise Institute 3 (Dec. 2, 1998), <https://fraser.stlouisfed.org/title/6111/item/587216/toc/551408> [<https://perma.cc/J99C-J4K4>].

372. *See, e.g., The Role of Fannie Mae and Freddie Mac in the Financial Crisis: Hearing Before the H. Comm. on Oversight & Gov’t Reform*, 110th Cong. (2008), <https://www.govinfo.gov/content/pkg/CHRG-110hrg50808/pdf/CHRG-110hrg50808.pdf>

ground. Rather, we think it is more useful to consider the role of the FHLB System today, particularly when set against its prior evolution and through the frame of the hidden monetary state.

The FHLBs today are a more than \$1.3 trillion colossus. If the FHLB System was a truly private bank, it would be among the largest in the U.S.³⁷³ It has also taken on a quasi-official role as “lender of next to last resort.”³⁷⁴ This was exhibited vividly³⁷⁵ during the GFC³⁷⁶ and, more recently, the banking stress of March 2023 triggered by the receivership announcements of SVB and Signature Bank.³⁷⁷

To serve that function, the FHLB System has come to rely increasingly on more explicitly quasi-monetary instruments for its funding. Discount notes, for example, are short-term money market instruments designed to compete more directly with Treasury bills and commercial paper. Discount notes issued with maturities of less than one year (and as short as overnight) were originally introduced³⁷⁸ in mid-1974 as a means to allow FHLBs to tactically manage their funding around seasonal and cyclical variation in advance demand. Today, discount notes make up roughly a third of total FHLB borrowing³⁷⁹ (and were as high as 55% in late 2015).³⁸⁰ Recent changes to the

[<https://perma.cc/483L-LHD5>]; FIN. CRISIS INQUIRY COMM’N, THE FINANCIAL CRISIS INQUIRY REPORT (2011); W. Scott Frame et al., *The Rescue of Fannie Mae and Freddie Mac*, 25 J. ECON. PERSP. 25, 25 (2015); W. Scott Frame, *The 2008 Federal Intervention to Stabilize Fannie Mae and Freddie Mac*, 18 J. APPLIED FIN. 124, 124 (2008).

373. See *Insured U.S.-Chartered Commercial Banks That Have Consolidated Assets of \$300 Million or More, Ranked by Consolidated Assets as of December 31, 2023*, FED. RSRV. BD., <https://www.federalreserve.gov/releases/lbr/current> [<https://perma.cc/J65J-K7ZM>] (showing banks with comparable large amounts of consolidated assets); FED. HOME LOAN BANKS, COMBINED FINANCIAL REPORT FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2023 F-48 (2023), https://www.fhlb-of.com/ofweb_userWeb/resources/2023Q3CFR.pdf [<https://perma.cc/N9U4-6AMQ>].

374. Ashcraft et al., *supra* note 7, at 4; Gissler & Narajabad, *Background*, *supra* note 267.

375. Stephen G. Cechetti et al., *The FHLB Role in the SVP and Related Debacles*, in SVB AND BEYOND: THE BANKING STRESS OF 2023, at 189, 189 (Viral V. Acharya et al. eds., 2023).

376. Natalie Leonard, *United States: Federal Home Loan Bank Advances, 2007–2009*, 4 J. FIN. CRISES 1201, 1202 (2022).

377. For a broader overview, see BD. OF GOVERNORS OF THE FED. RSRV., REVIEW OF THE FEDERAL RESERVE’S SUPERVISION AND REGULATION OF SILICON VALLEY BANK (2023), <https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf> [<https://perma.cc/NE5H-HDCH>].

378. COHEN & FREIER, *supra* note 287, at 26.

379. See FED. HOME LOAN BANKS, *supra* note 373, at F-2 (comprising about \$15,000 of \$47,000 over a nine month period).

380. FED. HOME LOAN BANKS, COMBINED FINANCIAL REPORT FOR THE YEAR ENDED DECEMBER 21, 2015, at 51 (2016), https://www.fhlb-of.com/ofweb_userWeb/resources/2015Q4CFR.PDF [<https://perma.cc/QB4Z-3KWT>].

money market fund (“MMF”) industry have exacerbated this dynamic, as the shift of those short-term investors towards sovereign and quasi-sovereign paper has incentivized the FHLBs to compete with Treasury bills for a larger pool of potential funding.³⁸¹

The experience of 2023 also suggests maturity transformation increases during periods of stress. In the days following the receivership announcement for SVB, for example, advance demand surged. In total, the FHLB balance sheet expanded roughly \$200 billion in just a few days.³⁸² Most of that borrowing was met, at least at first, with overnight discount note issuance.³⁸³ Although that issuance was rather quickly termed out, the episode makes clear that when demand for advances surges, the uncertainty as to the magnitude, time frame, and composition of that surge incentivizes a tactical approach to funding. While that allows for connecting smaller banks to wholesale funding markets that they would not otherwise be able to access, it also means a larger maturity mismatch for the FHLB System during periods of stress.

In the meantime, the extent to which the FHLBs facilitate bank residential mortgage lending is the subject of ongoing debate. As of the end of 2022, for example, advances made up less than two-thirds of total assets.³⁸⁴ Of that, less than half were collateralized by single family mortgage loans—the other half was collateralized by a mix of commercial real estate, multifamily mortgage loans, and a variety of securities.³⁸⁵ It is also worth noting that a significant fraction of those advances were held by large banking institutions, including some GSIBs and super-regional banks.³⁸⁶ The remainder of their assets consisted primarily of a liquidity portfolio of cash and equivalents (\$160 billion, 13% of the total) and investment securities (\$200 billion, or

381. Tarullo, *supra* note 2, at 4–8; Kenechukwu Anadu & Viktoria Baklanova, *The Intersection of U.S. Money Market Mutual Fund Reforms, Bank Liquidity Requirements and the Federal Home Loan Bank System* 7 (Off. of Fin. Rsch., Working Paper No. 17-05, 2017); Stefan Gissler et al., *Providing Safety in a Rush: How Did Shadow Banks Respond to a \$1 Trillion Shock* 21 (Aug. 2, 2023) (unpublished manuscript), <https://ssrn.com/abstract=3595417> [<https://perma.cc/9R7W-HGFY>].

382. See TERESA HO ET AL., J.P. MORGAN, *SHORT-TERM MARKET OUTLOOK AND STRATEGY* 13 (2023).

383. See DARRYL E. GETTER, CONG. RSCH. SERV., *IN12157, LENDERS OF NEXT-TO-LAST AND LAST RESORT: IN COMPETITION?* 2 (2023).

384. FED. HOME LOAN BANKS, *COMBINED FINANCIAL REPORT FOR THE YEAR ENDED DECEMBER 31, 2022*, at 55 (2022), https://www.fhlf-of.com/ofweb_userWeb/resources/2022Q4CFR.pdf [<https://perma.cc/8695-DDJJ>].

385. FED. HOME LOAN BANKS, *LENDING AND COLLATERAL Q&A* 9 (2023), https://www.fhlf-of.com/ofweb_userWeb/resources/lendingqanda.pdf [<https://perma.cc/62WY-L7S4>].

386. FED. HOME LOAN BANKS, *supra* note 384, at 61 tbl.12.

16% of the total). Combining mortgage-backed investment securities, whole mortgage loans, and advances secured by single-family mortgage collateral comprises less than half of total assets. The Federal Housing Finance Agency (“FHFA”), which has supervised the FHLB System since 2008,³⁸⁷ is acutely aware of this mission expansion: “for complex and varied reasons,” they wrote in a 2023 report, “there has been a decreased focus on housing related activities by many institutions that are members of the [FHLB] System.”³⁸⁸

This all highlights a core element of the hidden monetary state. The FHLBs initially promoted fundamental changes to the home finance system in the United States. On the terms of their own design, the FHLBs were a successful exercise in directed, money-financed credit creation. But their role eventually suffered from the lack of a clear or enforceable mission statement. That was true in 1932 and remains the case to this day. As the FHFA itself wrote in late 2023, there is a need to “clarify the mission of the System so the [FHLBs] are held accountable for serving their public purpose.”³⁸⁹ That lack of a clear mission made it difficult to design the right set of regulatory and economic incentives to direct its de facto monetary powers in the way that its architects arguably intended. Instead of a true housing discount bank, as Hoover and the seventy-second Congress envisioned, today the FHLBs represent a complicated and unfocused amalgam of activities that some have argued (although those critics have critics)³⁹⁰ create more problems than they solve.³⁹¹

In this case, the hidden monetary state was successful at first, but later expanded well beyond its original intent. As Hoffman and Cassel argue, this expansion was not necessarily illegitimate—rather, “public problems were identified in the policy process, and Congress deployed administrative capacity to address them.”³⁹² At the same time, the convenience of the FHLBs as a monetary and administrative tool has dragged them far afield. The result has been a large and important yet arcane instrumentality, the mission of

387. Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289, 122 Stat. 2654 (creating the FHFA).

388. FED. HOUS. FIN. AGENCY, *supra* note 27, at 7.

389. *Id.*

390. Jim Parrott & Mark M. Zandi, *In Defense of the Federal Home Loan Banks*, URB. INST. (Apr. 10, 2023), <https://www.fhfa.gov/sites/default/files/2024-01/FHLBank-System-at-100-Report.pdf> [<https://perma.cc/3D66-EUCW>].

391. *See e.g.*, Judge, *supra* note 269; Gissler et al., *supra* note 269, at 2; Wigglesworth, *supra* note 270; Cornelius Hurley, *CBO Called Out the Federal Home Loan Banks. It’s Now up to Congress*, AM. BANKER (Mar. 21, 2024), <https://www.americanbanker.com/opinion/cbo-called-out-the-federal-home-loan-banks-its-now-up-to-congress>.

392. HOFFMANN & CASSELL, *supra* note 30, at 11.

which is unclear and yet which exerts a significant influence on the structure and stability of our financial system.

D. The MBS Market: Promoting Home Ownership

The GFC moved shadow banking from a niche policy concern to the center of financial regulation's agenda. The leading explanation of the crisis is that it was fundamentally a bank run localized in the shadow banking sector.³⁹³ In the years leading up to the events of 2007–2008, a number of non-bank financial institutions had come to perform major bank-like economic functions. In particular, this involved broker-dealers like Bear Stearns, Lehman Brothers, and others.³⁹⁴ These institutions had always funded some of their activities through the issuance of very short-term claims, but the years preceding the crisis saw important changes to their business model, as they became significantly more leveraged³⁹⁵ and increasingly invested in mortgage credit and, eventually, subprime loans.³⁹⁶

That proved a toxic combination. Over the course of 2007, falling subprime housing prices called into question the value of the collateral securing those brokerages' short-term financing. As market participants recognized the potential breadth and scale of the problem, lenders to the shadow banking system rapidly withdrew their funding *en masse*. The result had many of the qualities of a traditional run by depositors of a commercial bank, but now on institutions without any explicit government support like deposit insurance or official sector liquidity.³⁹⁷ Without access to central bank

393. GARY B. GORTON, *SLAPPED IN THE FACE BY THE INVISIBLE HAND: BANKING AND THE PANIC OF 2007*, at 2 (2009).

394. FIN. CRISIS INQUIRY COMM'N, *supra* note 372, at xix.

395. First, changes to broker-dealer net capital regulations implemented by the Securities and Exchange Commission in the mid-2000s allowed them to take on significantly more leverage. See 12 C.F.R. §§ 240.1–240.17 (amended 2024); Stephen Labaton, *U.S. Regulator's 2004 Rule Let Banks Pile Up New Debt*, N.Y. TIMES (Oct. 3, 2008), <https://www.nytimes.com/2008/10/03/business/worldbusiness/03iht-sec.4.16681441.html>; FIN. CRISIS INQUIRY COMM'N, *supra* note 372, at 11. Bear Stearns, for example, was compliant with net capital rules just prior to its collapse, leading the SEC Inspector General's Office to question the "adequacy of those requirements." SEC, OFF. OF THE INSPECTOR GEN., *SEC'S OVERSIGHT OF BEAR STEARNS AND RELATED ENTITIES 10–11* (2008).

396. For a detailed description, see FIN. CRISIS INQUIRY COMM'N, *supra* note 372, at 67–83.

397. Banking has long been understood to enjoy two equilibria, one functioning (normal times) and another highly dysfunctional (coordinated runs of lenders). Deposit insurance, which is made available to commercial banks by the Federal Deposit Insurance Company (FDIC) is one way to adjust that dynamic to preference the functional equilibrium. But deposit insurance is only available to institutions that subject themselves to extensive supervision and oversight, which comes with many strings attached and was generally not the case with institutions primarily

liquidity or other substitutes, Bear Stearns, Lehman Brothers, and other independent broker-dealers were quickly rendered illiquid and unable to meet their pending obligations.³⁹⁸ As contagion spread, the entire financial system was brought to the brink of collapse.

The major architects of this theory, Professors Gary Gorton and Andrew Metrick, argued in particular that the 2008 run was driven by counterparties' withdrawal of *repurchase agreements* that investment banks and other broker-dealers relied on to finance the *securitized repackaging of mortgage loans*.³⁹⁹ While repos were discussed above, securitization is a process by which the cash flows generated by some asset, such as mortgagors' payments on their mortgage, are pooled together in a legal entity, with interests in that entity sold as securities to investors.⁴⁰⁰ Gorton and Metrick call this combination of repo financing and securitization "securitized banking," and they see it as the form of shadow banking at the heart of the financial crisis.⁴⁰¹ It was this run that transformed what was at first a modest and localized drop in value (subprime)—much smaller than the collapse of the dot-com bubble in the late 1990s⁴⁰²—to metastasize into a catastrophe.

Financing mortgage securitization came to mimic traditional banking in important respects. First, in the pre-crisis years investment banks financed themselves in important part through extremely short-term (repo) funding.⁴⁰³

engaged in capital markets activities. Douglas W. Diamond, *Banks and Liquidity Creation: A Simple Exposition of the Diamond-Dybvig Model*, 93 FED. RES. BANK RICH. ECON. Q. 189, 189 (2007); FED. DEPOSIT INS. CO., A BRIEF HISTORY OF DEPOSIT INSURANCE IN THE UNITED STATES 3–12 (1998), <https://www.fdic.gov/bank/historical/brief/brhist.pdf> [<https://perma.cc/S4DF-LYNQ>].

398. See generally Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425 (2012).

399. *Id.* at 425. Securitization involves creating a legal entity (often called a special purpose vehicle) that purchases mortgage loans and then sells interests in that pool of mortgage loans to investors in the form of bonds with different characteristics (referred to as "tranches"). *Id.* at 449–50.

400. *Id.* at 449.

401. *Id.* at 425 ("We refer to the combination of securitization plus repo finance as "securitized banking" and argue that these activities were at the nexus of the crisis.").

402. The bursting of the dot-com bubble is typically described as destroying roughly \$5 trillion in paper wealth over the span of a couple of years. Brian McCullough, *A Revealing Look at the Dot-com Bubble of 2000—and How It Shapes Our Lives Today*, TED: IDEAS (Dec. 4, 2018), <https://ideas.ted.com/an-eye-opening-look-at-the-dot-com-bubble-of-2000-and-how-it-shapes-our-lives-today/> [<https://perma.cc/BZG4-U54A>]. By contrast, late 2007 estimates of potential losses on mortgage credit and other securitized products were far smaller—well below \$1 trillion. Adrian Blundell-Wignall, *Structured Products: Implications for Financial Markets*, 93 FIN. MKT. TRENDS 2, 41 (2007).

403. FIN. CRISIS INQUIRY COMM'N, *supra* note 372, at 280–91, 324–343; GARY GORTON, *supra* note 393 at 14.

Second, those banks intermediated an enormous portion of the housing market through securitization.⁴⁰⁴ If the hallmark of traditional banking is the provision of long-term housing loans financed by demandable debt, securitized banking fit the bill.

What is striking is that both of the core elements of securitized banking—(1) the widespread use of repo financing, and (2) the securitization of mortgage loans—exist in large part because of the deliberate intervention of federal policymakers.⁴⁰⁵ In Section I.B, we described the role Treasury officials played in the development of the repo market. In this Section, we describe the role federal officials played in *creating* the first MBS and in *promoting* the pivotal early growth of that market. As we will see, federal policymakers overwhelmingly succeeded in their ambitions. The first MBS were created in 1968 and 1970.⁴⁰⁶ The MBS market would grow from near nonexistence in 1970 to almost \$7 billion in 1972 and \$40 billion in 1978.⁴⁰⁷ By the late 1990s, the annual issuance of mortgage-related securities was in the hundreds of billions and exceeded the issuance of debt either by the federal government or all corporations.⁴⁰⁸ By 2007, there was roughly \$7 trillion worth of mortgage-related securities outstanding.⁴⁰⁹

The modern MBS market was born in the waning years of the Lyndon Johnson administration, but to understand the choices that administration faced, it is necessary to understand part of their institutional inheritance. During the Great Depression, the federal government established a number of agencies in an effort to ameliorate a catastrophic national wave of foreclosures (some of which were discussed earlier in this Article).⁴¹⁰ Among them, the Federal Housing Administration provided federal government

404. In 2005 and 2006, over \$1 trillion in subprime mortgages were originated. During those years, securitization provided the vast majority (around 80%) of financing for subprime mortgages. Gary B. Gorton, *Information, Liquidity, and the (Ongoing) Panic of 2007*, at 2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 14649, 2009).

405. Many other scholars of shadow banking have also viewed mortgage securitization as a core example of the practice. *See, e.g.,* STIJN CLAESSENS ET AL., INT'L MONETARY FUND, SHADOW BANKING: ECONOMICS AND POLICY (2012), <https://www.imf.org/external/pubs/ft/sdn/2012/sdn1212.pdf> [<https://perma.cc/Q8L3-J29Z>].

406. John J. McConnell & Stephen A. Buser, *The Origins and the Evolutions of the Market for Mortgage-Backed Securities*, 3 ANN. REV. FIN. ECON. 173, 173 (2011).

407. MacLaury, *supra* note 37, 210; *see also* Charles M. Sivesind, *Mortgage-Backed Securities: The Revolution in Real Estate Finance*, FRBNY Q. REV., Autumn 1979, at 1, 1.

408. SEC. INDUS. & FIN. MARKETS ASS'N, RESEARCH QUARTERLY 2 (2008).

409. *Id.*

410. Richard K. Green & Susan M. Wachter, *The American Mortgage in Historical and International Context*, 19 J. ECON. PERSPS. 93, 95–96 (2005).

insurance for the payment of certain mortgages.⁴¹¹ In 1938, the Roosevelt administration created the Federal National Mortgage Association (“FNMA”)—later to be called Fannie Mae—to facilitate the development of a so-called secondary or trading market for those guaranteed mortgages.⁴¹² The premise of that policy was that mortgages would be cheaper for prospective homeowners if the institutions providing the mortgages could easily sell them to other purchasers (i.e., secondary market trading).⁴¹³ Secondary markets were intended as a source of alternative liquidity (i.e., raising funds from capital markets in addition to depositors or other short- and long-term borrowings) and risk management (it was easier for lenders adjust their exposure to the market if and when conditions warranted).⁴¹⁴ Both would, in principle, incentivize mortgage lenders to provide more and cheaper housing finance.⁴¹⁵

By the late 1960s, two related crises confronted the FNMA and U.S. housing market. First, economy-wide market conditions led to a shortage of capital for mortgage borrowers.⁴¹⁶ Second, the Johnson Administration faced serious budgetary constraints due to the costs of the Vietnam War and War on Poverty.⁴¹⁷ Facing these twin crises, Johnson made two decisions that transformed the character of housing finance: significantly reorganizing the federal instrumentalities involved in financing mortgages; and creating mortgage-backed securities.

Both decisions received their legislative imprimatur in the Housing Act of 1968.⁴¹⁸ The Housing Act partitioned the various functions of the FNMA.⁴¹⁹ The entity itself was “spun off” from the federal government entirely and became a company wholly owned by private shareholders. Any programs

411. *Id.* at 95.

412. *Id.* at 95–96.

413. McConnell & Buser, *supra* note 406, at 179.

414. *Id.* at 177.

415. *Id.*

416. Green & Wachter, *supra* note 410, at 97.

417. The role of budgetary constraints in shaping policy options is explicit in administration records and other contemporaneous documentary evidence. *See* Memorandum from Raymond H. Lapin to Robert C. Weaver, Sec’y of Hous. & Urb. Dev. (Jan. 3, 1967) (on file with author). In this memorandum dated January 3, 1967, Fannie Mae president Raymond Lapin writes to Robert Weaver, Secretary of HUD, in response to Weaver’s request for a “plan by which the Secondary Market Operations of FNMA might be excluded from the President’s annual budget.” *Id.* at 1. Lapin’s plan was for Fannie Mae to become 100% privately owned, which would permit its exclusion from the federal budget under the principles of the recent Report of the President’s Commission on Budget Concepts. *See also* PRESIDENT’S COMM’N ON BUDGET CONCEPTS, REPORT OF THE PRESIDENT’S COMMISSION ON BUDGET CONCEPTS 8, 25 (1967).

418. Green & Wachter, *supra* note 410, at 97.

419. *Id.* at 97–98.

requiring direct federal involvement retained and relocated to a newly formed unit called the Government National Mortgage Association (“GNMA”), within the Department of Housing and Urban Development. FNMA’s new status as privately owned entity meant that its liabilities were no longer a direct obligation of the federal government, nor did the debt service costs of supporting those liabilities appear in federal budgets.⁴²⁰ But it was still not a typical private corporation: the terms by which Fannie was spun off included a charter mandating that it continue to promote the liquidity and stability of the country’s secondary mortgage market.⁴²¹

The Housing Act also empowered the newest housing agency, GNMA, to guarantee securities issued against pools of mortgages insured or guaranteed by other government agencies (such as the HFA or VA).⁴²² What GNMA guaranteed—with the explicit full faith and credit of the U.S. federal government—was striking: the timely payment of principal and interest on securities that had been originated and pooled by private mortgage institutions, provided the individual mortgages in those pools were guaranteed or insured by another federal agency.⁴²³ These securities are widely considered the first mortgage pass-through securities. The GNMA guarantees eliminated one of the most important risks faced by an investor in any kind of debt instrument—credit risk, which involves the possibility that the loan backing a security will not be paid and go into default.

A Johnson Administration committee named the Mortgage Finance Task Force (“MFTF”) was instrumental in designing these instruments.⁴²⁴ The MFTF issued a final report in October 1967, which began by outlining the long-term and cyclical issues facing mortgage financing in the United States, but its historical importance lay in its proposed solutions. The first of those solutions was: “Developing new channels through which the mortgage market can more effectively compete for funds in the general capital market.”⁴²⁵ Here, the MFTF recommended the “design of new (or improved)

420. *Id.* at 98.

421. *Id.*

422. Housing and Urban Development Act of 1968, Pub. L. No. 90-448, 82 Stat. 476.

423. Sivesind, *supra* note 407, at 4–5 (“The FHLMC, created by the Congress in 1970 and wholly owned by the [FHLBs], has as its primary goal the development of a national secondary market in conventional mortgages.”).

424. Quinn, *Origins of Securitization*, *supra* note 37; QUINN, *AMERICAN BONDS*, *supra* note 37, at 192–93; *see also* Nathan Goralnik, *Bankruptcy-Proof Finance and the Supply of Liquidity*, 122 *YALE L.J.* 460, 479 (2012) (“The origins of securitization date to 1968, when the Government National Mortgage Association (Ginnie Mae) began issuing securities backed by federally guaranteed mortgages.”).

425. EXEC. OFF. OF THE PRESIDENT, COUNCIL OF ECON. ADVISERS, *MORTGAGE FINANCE TASK FORCE REPORT 3* (1967).

types of capital market securities that would be backed by mortgages,” but which would attract major new institutional investors, such as pension funds, “currently reluctant to invest in the mortgage market directly.”⁴²⁶ In particular, there were recommendations for FHA guarantees for bonds backed by pools of federally underwritten mortgages put together by mortgage bankers and authorization for Fannie Mae to sell trust certificates against pools of mortgages from its secondary market holdings.⁴²⁷

Indeed, the report goes further. Remarkably, the federal architects of the first MBS explicitly envisioned the design of securities that would function almost as money substitutes, noting that in order to attract these new investors, the mortgage-backed securities “should in many respects be similar to investment in Treasury or agency obligations.”⁴²⁸ Just a few years after their creation, Bruce MacLaury, then-President of the Federal Reserve Bank of Minneapolis, would make essentially this same observation. MacLaury noted that federal credit assistance to the housing market included “upgrading” the character of financial instruments to increase their marketability and lower their interest rate, which could be “seen most easily in the transformation of guaranteed mortgages into guaranteed bonds through issuance of GNMA mortgage-backed securities.”⁴²⁹ MacLaury concluded his observation on an ambivalent and prescient note: “The rub comes when the ultimate objective is to create securities that are indistinguishable from direct government debt, and yet still preserve some rationale for not counting the issues . . . against the Federal debt ceiling.”⁴³⁰

In 1970, preliminary regulations were formulated for a second GNMA security, “a mortgage-backed bond . . . designed to enable mortgages to compete more effectively with alternative capital market instruments in general and particularly to encourage pension funds—and other nonmortgage investors—to shift a part of their resources into the mortgage market.”⁴³¹ Within a decade, the vision of the Mortgage Finance Task Force members became a resounding success. In 1978, \$40 billion in MBS were issued.⁴³² These securities financed a significant fraction of all mortgage originations,

426. *Id.*

427. *Id.*

428. *Id.* at 5.

429. MacLaury, *supra* note 407, at 210.

430. *Id.* at 211–12, *quoted in* Quinn, *Origins of Securitization*, *supra* note 37, at 108; *see also* Implementing Authority of HUD Over Conduct of Secondary Market Operations of FNMA, 43 Fed. Reg. 36200 (Aug. 15, 1978).

431. BD. OF GOVERNORS OF THE FED. RSRV. SYS., *CURRENT ECONOMIC AND FINANCIAL CONDITIONS* app. A, at A-1 (1970).

432. Sivesind, *supra* note 407, at 1.

and the “widespread acceptance” of MBS had attracted a variety of new institutional investors to the market.⁴³³ By the turn of the century, MBS were a vast part of U.S. capital markets.⁴³⁴

* * *

The historical and institutional details here have been quite complicated, but the overall account is clear: in an effort to promote nationwide access to mortgages and home ownership, the federal government invented new forms of financial engineering and backstopped them with federal guarantees. The centerpiece of this effort was a new type of security—the mortgage-backed security—which would come to occupy a major part in American capital markets at the end of the twentieth century and serve as the lifeblood of repo lending.

The key point for our purposes is that the securitized banking system, which combined repurchase agreements and MBS, did not emerge from markets to confront regulators unaware. In fact, a variety of federal officials designed, promoted, and abetted the growth of these markets, including along the dimensions in which they most act as money substitutes.⁴³⁵ Creating the MBS market was a *project of federal policymakers*. To be clear, the GFC itself is widely recognized to have originated in the non-agency MBS market, which developed long after the period examined here and had distinctly different, and ultimately problematic (to say the least), characteristics.⁴³⁶ However, to the extent that non-agency securitizations were an innovation on top of the agency MBS, it seems clear that the MBS market would never have

433. MICH. STATE HOUS. DEV. AUTH., PROBLEMS CAUSED BY AN INABILITY OF STATE HOUSING FINANCE AGENCIES TO RAISE CAPITAL THROUGH THE SALE OF SECURITIES: POSSIBLE CONSEQUENCES AND A PROPOSED SOLUTION (1975), <https://www.fordlibrarymuseum.gov/library/document/0039/1534926.pdf> [<https://perma.cc/VJG9-MPZ5>] (noting that by 1975, federal officials could comment that GNMA mortgage-backed securities were “well known and accepted in the securities market”); *see also* Sivesind, *supra* note 407, at 1; Sam Scott Miller, *Regulation of Trading in Ginnie Maes*, 21 DUQ. L. REV. 39, 40 n.7 (1982).

434. John A. James & Richard Sylla, *Credit Market Debt Outstanding: 1945–1997*, in HISTORICAL STATISTICS OF THE UNITED STATES, EARLIEST TIMES TO THE PRESENT: MILLENNIAL EDITION tbl.Cj899-957 (Susan B. Carter et al. eds., 2006).

435. Indeed, this would not have been a strange observation at the time. *See* Sivesind, *supra* note 407, at 3 (“The Government-related agencies—FNMA, GNMA, and FHLMC—may be credited with the development and widespread adoption of mortgage-backed securities as a means of financing home loans.”); *id.* at 4 (stating that GNMA’s “mortgage-backed securities program . . . revolutionized the secondary mortgage market”).

436. There is an extensive literature examining this issue. But for our purposes we believe it suffices to simply reference the Financial Crisis Inquiry Report as the definitive collection of official sector views on the origins of the GFC. FIN. CRISIS INQUIRY COMM’N, *supra* note 372.

existed in the form it did in 2007 without the aggressive promotion of government policy in earlier decades.

II. THEORIZING THE HIDDEN MONETARY STATE

The conventional view is that the practices and institutions of shadow banking emerged due to market forces. In Part I, we showed that this conventional view misperceives much of the institutional reality. Some of the most prominent forms of shadow banking grew precisely because federal policymakers took important steps to facilitate that growth. They were, in essence, part of a federal project.

This Part analyzes the consequences of recognizing this reality for central issues in financial regulation. Because of constraints of space, our analysis here is more in the spirit of an extended conclusion than something more systematic. Section II.A discusses how seeing the use of shadow banking as public policy brings into view important costs and benefits that are not widely appreciated. Shadow banking has promoted certain domestic economic ambitions, but it also suffers from conspicuous flaws as a policy tool. Section II.A also addresses why, given the deficiencies of shadow banking as public policy, policymakers were still attracted to its use. This boils down to the fact that indirect tools were politically and legally *feasible* when more direct tools were not. This leads naturally to Section II.B, which points out some new considerations in the political economy of shadow banking. Section II.C draws out lessons for future regulation of shadow banking.

A. *Evaluating Shadow Banking*

From the perspective of evaluating the costs and benefits of shadow banking, the problem with the conventional account is simple: it misunderstands the nature of the shadow banking system and, as a result, it fails to accurately grasp the tradeoffs involved in regulating or eliminating shadow banking. The argument so far has aimed to show that much of shadow banking originated as part of U.S. policymakers' efforts to achieve economic goals through indirect policy levers or public-private partnerships. The principal normative upshot of this account is to enable a richer understanding of the tradeoffs posed by shadow banking.

This raises the obvious question: did these policies achieve their stated goals? Here, the record contains some measure of success, albeit imperfect. The U.S. dollar has, since roughly the mid-1960s, been seen as the dominant global currency. That arrangement has proven remarkably durable, having survived globalization, deglobalization, and, most recently, the increased

“weaponization” of the dollar.⁴³⁷ The Treasury market, meanwhile, is commonly described as the “deepest and most liquid” in the world.⁴³⁸ Both market participants⁴³⁹ and the official sector⁴⁴⁰ point to similarly deep and liquid repo markets as a critical, if not causal, element of those features. The MBS market is often described as second only to Treasuries in its depth and liquidity,⁴⁴¹ and provides the more than half of the residential mortgage credit in the U.S.⁴⁴² The FHLBs are a more ambiguous case in which an initially successful instrument of policy was blunted over time by mission expansion and private incentives mixed with public subsidies.⁴⁴³

437. See generally HENRY FARRELL & ABRAHAM NEWMAN, UNDERGROUND EMPIRE: HOW AMERICA WEAPONIZED THE WORLD ECONOMY (2023); George Pearkes, *Ukraine and Dollar Weaponization*, ATL. COUNCIL (Jan. 31, 2022), <https://www.atlanticcouncil.org/blogs/econographics/ukraine-and-dollar-weaponization/> [<https://perma.cc/LCK4-N3FZ>]; SALEHA MOHSIN, PAPER SOLDIERS: HOW THE WEAPONIZATION OF THE DOLLAR CHANGED THE WORLD ORDER (2024).

438. This phrasing is used frequently. See, e.g., Janet L. Yellen, Sec’y, U.S. Dep’t of the Treasury, Remarks at the Open Session of the Meeting of the Financial Stability Oversight Council (Dec. 17, 2021), <https://home.treasury.gov/news/press-releases/jy0542> [<https://perma.cc/2QWV-X82Z>]; *Improving Risk Management and Increasing Clearing in U.S. Treasuries*, U.S. SEC. & EXCH. COMM’N, <https://www.sec.gov/newsroom/sec-adopts-rules-improve-risk-management-and-increase-clearing-us-treasuries> [<https://perma.cc/JQ2M-95XU>] (Dec. 19, 2023); *Nomination of Jerome H. Powell: Hearing Before the S. Comm. on Banking, Hous., & Urb. Affs.*, 117th Cong. 91 (2022); U.S. DEP’T OF THE TREASURY ET AL., ENHANCING THE RESILIENCE OF THE U.S. TREASURY MARKET: 2023 STAFF PROGRESS REPORT 1 (2023), https://home.treasury.gov/system/files/136/20231106_IAWG_report.pdf [<https://perma.cc/4V7K-8A2J>]; Letter from Alan Greenspan to Doug Barnard, Jr., Chair of the Subcomm. on Com., Consumer, and Monetary Affs. Comm. on Gov’t Operations of the House of Reps. (Oct. 22, 1991).

439. *Treasury Market Structure*, SIFMA, <https://www.sifma.org/explore-issues/treasury-market-structure/> [<https://perma.cc/8XDR-HKML>].

440. BANK FOR INT’L SETTLEMENTS, CGFS PAPERS NO. 59 REPO MARKET FUNCTIONING, at iii (2017), <https://www.bis.org/publ/cgfs59.pdf> [<https://perma.cc/DS7W-2KS3>] (“Repo markets play a key role in facilitating the flow of cash and securities around the financial system. . . . A well functioning repo market also supports liquidity and price discovery in the cash market, thus helping to improve the cost of funding for firms and governments and the efficient allocation of capital.”).

441. ANDREAS FUSTER ET AL., MORTGAGE-BACKED SECURITIES 15 (2022), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1001.pdf [<https://perma.cc/8TWJ-YEAQ>].

442. As of the third quarter of 2023, total mortgage debt outstanding was \$14 trillion, \$7.4 trillion of which was guaranteed by the GSEs. *Financial Accounts of the United States—Z.1, BD. GOVERNORS FED. RSRV. SYS.*, <https://www.federalreserve.gov/releases/z1/20231207/html/1217.htm> [<https://perma.cc/7HCA-XX7T>] (Dec. 7, 2023).

443. Judge, *supra* note 269; Gissler et al., *supra* note 269, at 2.

There were, of course, costs. The most obvious and well-discussed is increased financial fragility.⁴⁴⁴ By engaging in money creation outside the bank regulatory perimeter and government backstops, history shows that shadow banks tend to be prone to excessive risk taking funded by runnable liabilities. While true from the outset, their success drove explosive growth which, owing to their sheer size, made this aspect of shadow banking increasingly a financial stability risk. That risk came to the fore during the GFC,⁴⁴⁵ with Eurodollars,⁴⁴⁶ repo,⁴⁴⁷ and MBS⁴⁴⁸ at the very center of those events. It was also, in different but still critical ways, central to the instabilities revealed by the Covid market panic.⁴⁴⁹

While an important element of macroprudential regulation is focusing on mitigating these tail risks, that is not its only goal. On one level, this account suggests that there are benefits to shadow banking that scholars of financial regulation usually ignore, elide, or underplay. Shadow banking is often facilitated by policymakers, and we must take seriously the extent to which they served political and technocratic goals. Yet focusing on these federal interventions *as policy interventions* analogous to tax expenditures also allows us to ask whether these indirect approaches have proved attractive as policy, and here we see a number of important new costs as well.

1. The Costs of Indirect Monetary Policy as Policy

Taking seriously these special purpose monies as a tool of statecraft also enables us to ask whether they are an *effective* tool. The repo market, securitized banking, and Eurodollars are each complex trillion-dollar markets. While they differ importantly in detail, there are important generalities about them too, which they share with the broader political science literature on the “invisible” state.⁴⁵⁰ Compared to more traditional tools of monetary and fiscal policy, the indirect tools are *less visible, more complex, and more regressive*.⁴⁵¹

444. *E.g.*, Bernanke, *supra* note 2.

445. *Id.*

446. TOOZE, *supra* note 171, at 213–15.

447. Gorton & Metrick, *supra* note 398, at 425–51.

448. FIN. CRISIS INQUIRY COMM’N, *supra* note 436.

449. Menand & Younger, *supra* note 47, at 227; Sengupta & Xue, *supra* note 58.

450. Prasad, *supra* note 51, at 191; *see also* Elisabeth Clemens, *Lineages of the Rube Goldberg State: Building and Blurring Public Programs, 1900–1940*, in *RETHINKING POLITICAL INSTITUTIONS: THE ART OF THE STATE* 187–88 (Ian Shapiro et al. eds., 2006).

451. *See generally* Prasad, *supra* note 51.

a. Visibility

Important pieces of the hidden welfare state are notable for being adopted with little fanfare or conflict. Christopher Howard observes that the creation of new tax expenditures attracts nothing like the controversy surrounding most fiscally important legislation, such as the Social Security Act.⁴⁵² No separate floor votes were taken on the adoption of the largest tax expenditures, all of which were adopted as part of broader fiscal packages.⁴⁵³ This comparison highlights the invisibility of the hidden monetary state. Although the markets for Eurodollars, repurchase agreements, and mortgage-backed securities were all abetted by federal policymakers at crucial junctures, no Congressional vote on any of these policies has ever been taken, or, to our knowledge, ever been contemplated.⁴⁵⁴

In most moments, the details of monetary policymaking are of interest exclusively to financial market participants and commentators. Yet traditional monetary policy is relatively visible. Indeed, the most traditional tool for stimulating economic activity (or dampening it)—reducing (or increasing) interest rates—has extraordinarily high public saliency. Minutes of meetings of the Federal Open Markets Committee move markets even if not ordinary citizens.⁴⁵⁵ Since 2011, the Fed chair has held press briefings immediately following policy-setting meetings,⁴⁵⁶ often with market-moving consequences.⁴⁵⁷ Further, the FOMC meeting minutes are visible, publicly available, and publicly contested to a degree that decision-making about indirect monetary policy is not.⁴⁵⁸

452. HOWARD, *supra* note 53, at 47.

453. *Id.*

454. One possible exception is the protection of repo assets from the automatic stay as part of the Federal Judgeship Act of 1984. *See* Bankruptcy Amendments and Federal Judgeship Act of 1984, Pub. L. No. 98-353, 98 Stat. 333. That was, however, only possible due to the scale and central importance the repo market had already achieved by that point. *See generally* Garbade, *supra* note 242; Menand & Younger, *supra* note 449, at 294–97.

455. *See generally* *Federal Open Market Committee*, BD. GOVERNORS FED. RSRV. SYS., <https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm> [<https://perma.cc/7K4S-6N9H>].

456. Press Release, Bd. of Governors of the Fed. Rsrv. Sys., Chairman Bernanke Will Hold Press Briefings Four Times Per Year to Present the FOMC’s Current Economic Projections and to Provide Additional Context for Policy Decisions (Mar. 24, 2011), <https://www.federalreserve.gov/newsevents/pressreleases/monetary20110324a.htm> [<https://perma.cc/XHM3-FWUF>].

457. Namrata Narain & Kunal Sangani, *The Market Impact of the Fed Press Conference* CEPR: VOXEU (Mar. 21, 2023), <https://cepr.org/voxeu/columns/market-impact-fed-press-conference> [<https://perma.cc/6MZC-2J3T>].

458. This is, in part, by design, given the priority placed by U.S. policymakers on maintaining independence for the Federal Reserve. Bruce K. MacLaury, *Perspectives on Federal reserve*

b. Complexity

It is often said that shadow banking undermines U.S. monetary sovereignty.⁴⁵⁹ The fact that federal policymakers have sometimes enabled key forms of shadow banking need not challenge this.⁴⁶⁰ If the policymakers facilitating shadow banking lie outside the monetary policy apparatus, then they could be undermining U.S. monetary policy from *within* the federal government.⁴⁶¹ Members of the Johnson administration may have set out to create a money-like financial asset to facilitate access to home ownership, but those officials were not part of the Federal Reserve System.⁴⁶² Neither was Treasury Secretary Bill Simon when he pushed for recycling oil revenues through the Eurodollar system (while attempting to divert a fraction towards investment in Treasury debt).⁴⁶³

Political scientist Steven Teles memorably referred to this kind of state of affairs as America's "kludgeocracy"—a situation in which governance is characterized by the "problem of complexity and incoherence," and statecraft is pursued through "indirect and incoherent policy mechanisms" with no organizing principle.⁴⁶⁴ The delegated character and complexity of indirect monetary policy make it more difficult to govern. In fact, this is a serious understatement. Even the parts of the shadow banking complex promoted by federal policy have grown hypertrophically and proved almost impossible to manage effectively. It is not only enormous in size, but it is also byzantine in complexity.

Independence—A Changing Structure for Changing Times, FED. RSRV. BANK MINNEAPOLIS (Jan. 1, 1977), <https://www.minneapolisfed.org/article/1977/perspectives-on-federal-reserve-independence-a-changing-structure-for-changing-times> [https://perma.cc/M6YX-SUPZ]; *Regulatory Restructuring: Balancing the Independence of the Federal Reserve in Monetary Policy with Systemic Risk Regulation: Hearing Before the Subcomm. on Domestic Monetary Pol'y & Tech. of the H. Comm. on Fin. Servs.*, 111th Cong. 7–8 (2009) (statement of Don Kohn, Vice Chairman, Board of Governors of the Federal Reserve System). For a more granular history, see generally Daniel J. Smith & Peter J. Boettke, *An Episodic History of Modern Fed Independence*, 20 INDEP. INST. 99 (2015).

459. See Amias Gerety, *Clarifying the Shadow Banking Debate: Application and Policy Implications*, INST. INT'L ECON. L. 11–12 (Jan. 2017), <https://www.law.georgetown.edu/iieel/wp-content/uploads/sites/8/2018/01/IIEL-Issue-Brief-Amias-Gerety-Shadow-Banking-Accessible.pdf> [https://perma.cc/PS8T-E43C].

460. See FIN. CRISIS INQUIRY COMM'N, *supra* note 372, at 28.

461. See *id.* at 38.

462. See *id.*

463. Wong, *supra* note 152.

464. Steven M. Teles, *Kludgeocracy in America*, NAT'L AFFS., Fall 2013, at 97, 97–98, <https://www.nationalaffairs.com/publications/detail/kludgeocracy-in-america> [https://perma.cc/TA3R-MNDQ].

An important cost of the complexity of indirect monetary policy is the coherence and robustness of banking regulation. If the United States government facilitates, or even merely countenances, the growth of forms of private money without subjecting them to a functional regulatory scheme, then it becomes difficult, if not impossible, to subject new forms of private money to that scheme in a principled fashion. Put simply, indirect use of shadow banking makes it difficult to regulate forms of shadow banking that the government would prefer to eliminate, or to unwind a once-favored form of private money that grows too large or unstable.

c. Regressivity

An important question about the U.S. government's use of indirect and public-private policy levers is whether they have different distributional effects than more typical forms of monetary and fiscal policy. The story here is complicated, and the clearest lesson may be that it is worth taking more seriously the distributional impacts of special purpose monies as policy tools.

Recent estimates of the distributional impact of monetary policy suggest the results are heterogeneous and that, on balance, monetary policy does not heighten inequality.⁴⁶⁵ Peering under the hood of those conclusions, however, suggests that the indirect policies effected through the repo, Eurodollar, FHLB, and MBS markets may be more regressive. The effects of monetary stimulus are widely distributed because the central channel of monetary policy—interest rates—affects the economy through multiple mechanisms with offsetting consequences.⁴⁶⁶

The use of special purpose monies, including shadow banking liabilities, may be more regressive because it represents a form of economic policy that acts primarily through asset prices with fewer direct effects on labor markets.⁴⁶⁷ Repos, for instance, are most commonly secured by Treasuries.⁴⁶⁸

465. See Alisdair McKay & Christian K. Wolf, *Monetary Policy and Inequality*, 37 J. ECON. PERSPS. 121, 141 (2023) (“[T]he empirical evidence suggests that monetary policy has a relatively uniform incidence across households.”).

466. See *id.* at 123–28 (discussing how monetary policy changes in interest rates affect income, mortgages, asset prices, and revaluation of nominal contracts).

467. See Gabriel Chodorow-Reich et al., *Stock Market Wealth and the Real Economy: A Local Labor Market Approach*, 111 AM. ECON. REV. 1613, 1616 (2021) (“[I]n an environment in which monetary policy effectively stabilizes aggregate demand fluctuations . . . there can be strong wealth effects and yet no relationship between asset price shocks and aggregate consumption.”).

468. See *What Is the Role of Repo in the Financial Markets?*, INT’L CAP. MKT. ASS’N, <https://www.icmagroup.org/market-practice-and-regulatory-policy/repo-and-collateral-markets/icma-ercc-publications/frequently-asked-questions-on-repo/3-what-is-the-role-of-repo-in-the-financial-markets/> [https://perma.cc/P7NE-QXFJ].

A low cost, well-functioning repo market promotes the value of Treasuries.⁴⁶⁹ By doing so, it tends to increase the prices of all other financial assets because the return to Treasuries is typically used as the “risk-free rate” against which all other assets are benchmarked.⁴⁷⁰ It is worth emphasizing the complexity of these calculations again, however, and that we only offer a highly preliminary analysis here. The other half of a well-functioning Treasury market, of course, is that it lowers the cost of servicing the federal debt and allows the federal government to spend more. If federal spending is generally progressive, then this cuts in the opposite direction from the asset price effect.

Eurodollars may be the most complex because they are intimately connected to financial globalization.⁴⁷¹ The effects of globalization on wealth and inequality around the world have been the subject of a large literature.⁴⁷² As a result, we refrain from any conclusions, but flag some issues. An important distributional consequence of the Eurodollar system has been to facilitate the offshoring of economic and financial activities.⁴⁷³ The benefits of this are likely to have accrued to the already wealthy.⁴⁷⁴ However, the Eurodollar system has also allowed the U.S. government to run large deficits while maintaining control of its currency.⁴⁷⁵ Facilitating the federal government’s ability to spend arguably has more broadly distributed benefits.

* * *

A reader might be forgiven for wondering, after the long list of problems discussed in the last section, why federal policymakers were ever attracted to these indirect tools in the first place. The answer is that they were *politically and legally feasible*, and the more direct, publicly controlled routes often were neither of those things.

469. *See id.*

470. The connection between the pricing of Treasury securities and a broader universe of financial instruments is a core element of monetary policy transmission since the GFC, particularly in the context of balance sheet policy. Brian Sack and co-authors refer to this as the “risk premium” channel. *See* FED. RSRV. BANK OF N.Y., LARGE-SCALE ASSET PURCHASES BY THE FEDERAL RESERVE: DO THEY WORK? STAFF REPORT NO. 441, at 2 (2010), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr441.pdf [<https://perma.cc/5MPT-44BQ>]. They also note this dynamic, often referred to as the “portfolio balance effect,” was originally described by James Tobin in 1958. *See* James Tobin, *Liquidity Preference as Behavior Towards Risk*, 25 REV. ECON. STUD. 65 (1958).

471. *See* Braun et al., *supra* note 144, at 794.

472. *See, e.g.*, Valentin F. Lang & Marina Mendes Tavares, *The Distribution of Gains from Globalization* 4–9 (Int’l Monetary Fund, Working Paper No. 18/54, 2018).

473. *See* Braun et al., *supra* note 144, at 795.

474. *See id.* at 799.

475. *See id.* at 802.

For repo, the Fed faced significant legal limits on its ability to lend directly to non-bank dealers. Those limits are rooted deep in the logic of the Fed. A major part of the governance of commercial banking in the United States turns on offering those banks access to liquidity and funding during times of instability, while also imposing significant regulation on them.⁴⁷⁶ Market making in Treasuries, however, was dominated by non-bank dealers. Conditional on seeking to ease Treasury dealers' financial constraints to promote the public interest in a well-functioning Treasury market, indirect tools were the most legally secure options.

For MBS, the obstacles were more political.⁴⁷⁷ Indeed, in Sarah Quinn's powerful history of the federal government's role in housing finance, it was part and parcel of the Johnson administration's effort to move federal support for housing *off the official federal budget and balance sheet* that led to circumstances in which indirect tools became attractive.⁴⁷⁸

Eurodollars are perhaps the most obvious example of a setting where more direct action might be impossible. Indirect support for dollar liquidity abroad is almost necessary because foreign banks lie beyond the reach of U.S. banking regulations.⁴⁷⁹ Conditional on seeking the goal of easing dollar funding abroad, indirect support was perhaps the only feasible route available. Through central bank swap lines that indirectly support offshore dollar funding markets, including other countries' banks' generation of Eurodollars, the U.S. government facilitates a global dollar system. Yet full official support of those dollar-denominated accounts, as if they were domestic currency, without subjecting them to U.S. law, would be unthinkable.

B. Revisiting the Political Economy of Shadow Banking

This account of the history of shadow banking has important lessons to teach us about designing the regulations that shape its scope and activities. Most importantly, this account illuminates the political economy of shadow banking.⁴⁸⁰ If one misses the way in which governmental policies have been

476. See generally Menand, *supra* note 48, at 952.

477. Quinn, *Origins of Securitization*, *supra* note 37, at 127.

478. *Id.*

479. See Braun et al., *supra* note 144, at 769–74 (discussing “monetary jurisdiction” as the legal space in which a state's banking regulation applies and where, in turn, liquidity and solvency backstops are in place).

480. See generally Cornel Ban & Daniela Gabor, *The Political Economy of Shadow Banking*, 23 REV. INT'L POL. ECON. 901 (2016), <https://doi.org/10.1080/09692290.2016.1264442> (exploring the institution of shadow banking through the lens of political economy and focusing

intertwined with shadow banking, one will think that the only opposition to regulatory reform arises from the financial industry. This will generate a puzzle: why have regulators have failed to overcome incumbent opposition to the regulation of shadow banking when they have successfully imposed stringent new controls on the commercial banking sector in the wake of the financial crisis? As one scholar puts it, “[i]t is puzzling that despite the vast size of the shadow banking system, its cross-border nature, the danger of regulatory arbitrage, the risks it poses for financial stability, and its role in the 2008 international financial crisis, the post-crisis regulation of shadow banking remained feeble. Why?”⁴⁸¹

A leading explanation has surely been the political tenacity of incumbent financial institutions and their capture of banking regulators. While there is likely much truth to this explanation, it does not, however, quite dispel the puzzle quoted above. After all, Basel III imposed stringent new capital requirements on the commercial banking sector, which is no slouch in terms of political clout, lobbying pressure, or use of the “revolving door” with regulators.⁴⁸² Our historical account offers a complementary explanation that helps illuminate the persistence of the shadow banking sector, namely, that it also serves important policymaking ends. As described above, those ends can become much more expansive and central to the national interest than originally intended. Thus, there would be important *public costs* to wholesale elimination of the shadow banking sector. As a result, shadow banking is difficult to resolve not just because of incumbent pressure or regulatory capture but also because important components of the shadow banking market continue to serve monetary, fiscal, or other important functions.

Although explicit comparative studies of countries’ shadow banking sectors are rare, the U.S. serves as an important example of a large shadow banking sector. But is the size of the U.S. banking sector as unusual as some scholars have observed?⁴⁸³ It may only be unusual if it is treated as an exclusively “private” or market phenomenon. If, in fact, it is seen as an extension of U.S. monetary and fiscal policy, it may serve to normalize both the size of the U.S. state and the size of its nonbank money sector. More

on understanding how shadow banking’s historical rise can be understood through political themes of the state and inequality).

481. LUCIA QUAGLIA, *THE PERILS OF INTERNATIONAL REGIME COMPLEXITY IN SHADOW BANKING I* (2022).

482. BANK FOR INT’L SETTLEMENTS, *BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS* (2010).

483. See, e.g., Laura E. Kodres, *What Is Shadow Banking?*, FIN. & DEV., June 2013, at 42, 43 (2013), <https://www.imf.org/external/pubs/ft/fandd/2013/06/pdf/basics.pdf> [<https://perma.cc/A6FQ-H323>] (“The shadow banking system appears to be largest in the United States.”).

broadly, it may not be useful, for many purposes, to assess a nation's economic policies as sharply distinct from its shadow banking sector.

In sum, understanding the political economy of shadow banking is an important ingredient in crafting an effective strategy for mitigating the risks of shadow banking. Without understanding the ways in which federal policy's efficacy has and does turn on shadow banking institutions, we will dramatically underestimate the difficulties of reforming those institutions.

1. The Next Challenge: Shadow Banking and Stablecoins

These considerations are not just important, but timely. The rise of digital assets presents the first major test in many years of how best to approach an emergent monetary innovation. Within this debate, the future of stablecoins is arguably the most direct analogue to the hidden monetary state.

In their most popular format, stablecoins are tokens representing a claim on a pool of short-term, low-risk traditional financial assets.⁴⁸⁴ In principle, that pool of safe collateral stabilizes stablecoin prices so that they can track units of fiat currency. As with other crypto assets, stablecoins are decentralized, with transactions recorded on a public blockchain rather than on the ledger of a trusted third party.⁴⁸⁵ Like shadow banking liabilities, stablecoins are a money-like asset, denominated in dollars, and created outside the confines of the U.S. banking system.⁴⁸⁶ They are all 'offshore' in the sense that they are settled on decentralized blockchains that exist in a form that makes it very difficult for any one nation or group of nations to exert

484. See generally *Total Stablecoin Supply*, BLOCK, <https://www.theblock.co/data/decentralized-finance/stablecoins> [<https://perma.cc/D3WR-YVST>] (demonstrating numerous flavors of stablecoin, including asset-backed, crypto-backed, commodity-backed, and algorithmic).

485. See generally *What Is Blockchain?*, MCKINSEY & CO. (Dec. 5, 2022), <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-blockchain> [<https://perma.cc/9V7L-UFA4>].

486. Garth Baughman et al., *The Stable in Stablecoins*, BD. GOVERNORS FED. RSRV. SYS. (Dec. 12, 2022), <https://doi.org/10.17016/2380-7172.3224> [<https://perma.cc/6PTA-V68C>].

control without the participation of their designers.⁴⁸⁷ In the case of Tether, the largest stablecoin, the issuing entity is itself offshore as well.⁴⁸⁸

This debate has rather obvious parallels to the history of shadow banking in general and Eurodollars in particular. As described above, regulators adopted a largely *laissez-faire* approach to regulating the Eurodollar market in its early years. In fact, they promoted its growth through targeted monetary policy and capital controls. Then, when the winds shifted in favor of stronger regulation, consensus proved elusive. The problem had simply grown too large. The oil shock of 1973 vastly complicated any attempt to restrain the market—the need for private markets to recycle petrodollars meant that, all of a sudden, regulators needed Eurodollars to maintain monetary stability far more than Eurodollars needed regulators to establish legitimacy.⁴⁸⁹

487. Stablecoins were in fact designed specifically to circumvent regulations that would have made it difficult for early crypto exchanges, particularly of the offshore variety, to obtain access to traditional banking services. The original whitepaper for Tether, now the largest stablecoin, described traditional banking as “complicated, risky, slow, and expensive.” TETHER, TETHER: FIAT CURRENCIES ON THE BITCOIN BLOCKCHAIN 12, <https://assets.ctfassets.net/vyse88cgwfb1/5UWgHMvz071t2Cq5yTw5vi/c9798ea8db99311bf90ebe0810938b01/TetherWhitePaper.pdf> [<https://perma.cc/L4UX-GS8R>]. As of 2017, for example, news coverage quoted Changpeng Zhao, CEO of the then Japan-based Binance exchange, as saying “[w]e don’t touch fiat so we don’t have a bank.” See Eva Xiao, *Three Months After Launch, This Unbanked Crypto Exchange Made \$7.5m in Profit*, TECHINASIA (Nov. 30, 2017), <https://www.techinasia.com/cryptocurrency-exchange-binance>.

488. See Jeff Benson, *Tether’s Offshore Bank Discloses ‘Large Position’ in Bitcoin*, DECRYPT (Jan. 14, 2021), <https://decrypt.co/54225/tethers-offshore-bank-discloses-large-position-in-bitcoin> [<https://perma.cc/XRP9-S5UP>]; Zeke Faux, *Anyone Seen Tether’s Billions?*, BLOOMBERG (Oct. 7, 2021), <https://www.bloomberg.com/news/features/2021-10-07/crypto-mystery-where-s-the-69-billion-backing-the-stablecoin-tether> [<https://perma.cc/3AQA-JEW2>].

489. Eurodollars were, by that point, largely accepted as a core component of the global financial system. The involvement of central banks arguably provided sufficient perceived official sanction to more than offset the lack of a regulatory framework. For example, marketing materials from 1968 note:

“Central banks and other monetary authorities have participated in the short-term Euro-dollar market since its inception, supplying a substantial portion of all Euro dollar deposits and, on occasion, intervening in the market to relieve seasonal or speculative pressures. This central bank participation has enhanced the Euro-dollar market’s growth and stability. Although unregulated and without a lender of last resort, the Euro-dollar market has become too important to be ignored by the major central banks. Their participation has placed an implicit stamp of official approval on its existence and operations.”

CHASE MANHATTAN BANK, *supra* note 136, at 10; see also R.B. JOHNSTON, THE ECONOMICS OF THE EURO-MARKET: HISTORY, THEORY AND POLICY 249 (1982) (discussing the growth of the Eurodollar market, especially the focus on the adequacy of Euro-market liquidity after the 1973 oil crisis).

Within the context of this analogy, the challenge stablecoins present to policymakers resembles the Eurodollar market in the early 1960s. Although largely unregulated, U.S. authorities have highlighted the risks that stablecoins could pose to law enforcement, investor protection, and financial stability.⁴⁹⁰ There is also evidence that stablecoins blunt the economic weapon of sanctions, with Russian nationals relying on Tether and other tokens to evade the extensive sanctions regime put in place after the invasion of Ukraine.⁴⁹¹ There is one line of thought that argues a hands off approach is optimal—the “let it burn” mentality.⁴⁹² Others have stressed the need for regulation.⁴⁹³ The Biden Administration has argued that the collapse⁴⁹⁴ of TerraUSD, a large algorithmic stablecoin with more than \$18 billion at its peak,⁴⁹⁵ highlights the urgency of these issues.⁴⁹⁶

The history of shadow banking also offers a caution against complacency. The question is not whether stablecoins fit an obvious niche that will catalyze further rapid growth. Rather, it is a recognition that unforeseen events can have dramatic consequences that can bring previously obscure elements of the plumbing of the financial system to the fore. Sometimes, that can happen slowly, but it can also happen all at once, as with Eurodollars during the oil shock of 1973. In all four of our case studies, regulators struggled to reassert control of the market once it had achieved sufficient size and complexity—

490. See STABLECOINS REPORT, *supra* note 69, at 12–14, https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf [<https://perma.cc/SHU7-BEQJ>].

491. See *Eastern Europe’s Crypto Market Active, With Spikes in Last Year Driven by Russia-Ukraine War*, CHAINALYSIS (Oct. 12, 2022), <https://blog.chainalysis.com/reports/eastern-europe-cryptocurrency-geography-report-2022-preview/> [<https://perma.cc/LH66-WDQR>].

492. See Stephen Cecchetti & Kim Schoenholtz, *Let Crypto Burn*, FIN. TIMES (Nov. 17, 2022), <https://www.ft.com/content/ac058ede-80cb-4aa6-8394-941443eec7e3> [<https://perma.cc/HF7G-R9LD>].

493. See Jay Clayton & Timothy Massad, *A Path Forward for Regulating Crypto Markets*, WALL ST. J. (July 7, 2023), <https://www.wsj.com/articles/regulating-crypto-markets-1e5ec5c5>; see also *The Future of Digital Assets: Measuring the Regulatory Gaps in the Digital Asset Market: Hearing Before the Subcomm. on Digit. Assets, Fin. Tech. and Inclusion of the H. Fin. Servs. Comm and the Subcomm. on Commodity Mkts., Digit. Assets and Rural Dev. of the H. Comm. on Agric.*, 118th Cong. 1 (2023) (statement of Timothy G. Massad, Director, Digital Assets Policy Project).

494. See Antonio Briola et al., *Anatomy of a Stablecoin’s Failure: The Terra-Luna Case*, 51 FIN. RSCH. LETTERS 1, 2 (2023), <https://doi.org/10.1016/j.frl.2022.103358> [<https://perma.cc/4MQD-PDTB>].

495. See *TerraClassicUSD*, COINMARKETCAP, <https://coinmarketcap.com/currencies/terrausd/> [<https://perma.cc/47TJ-J9FC>].

496. See Christopher Condon, *Yellen Says Terra Meltdown Shows Crypto-Stablecoin Dangers*, BLOOMBERG (May 12, 2022), <https://www.bloomberg.com/news/articles/2022-05-12/yellen-says-terra-meltdown-demonstrates-crypto-stablecoin-risks> [<https://perma.cc/5K7A-JCLP>].

the possibility that substantial reform would destabilize the broader financial system had simply become too big a risk. In these and other examples, official backstops and participation were the rocket fuel that drove this expansion. Stablecoins may occupy a niche today, but there are a range of plausible futures in which they have a much more central role in the smooth functioning of the global financial system and economy. By that point, some argue, it may simply be too late.⁴⁹⁷

III. CONCLUSION

Most of the regulatory and academic analysis of shadow banking casts it as the product of market forces seeking to arbitrage banking law, to create bank-like institutions without bank-like regulation. This paper has developed two related themes. First, as a historical matter, much of shadow banking—including Eurodollars, the repo market, and MBS—only exist as they do today, because federal policymakers promoted their growth in their early stages.

The resulting picture of shadow banking has important lessons to teach us. The distinction between federal monetary and fiscal institutions and shadow banking is neither as clean, nor as coherent as many have suggested. Instead, it is riddled through with a distinctively American style of delegated governance that uses public-private partnerships and repurposes private institutions for public ends. With a clearer picture, we can see better the costs and benefits of shadow banking and aspects of political economy that make reform more difficult. We also gain valuable insight into how to confront shadow banking's newest forms.

497. See, e.g., Timothy G. Massad, *The U.S. Can Make the Rules on Stablecoins, or It Can Take Them*, BARRON'S (July 19, 2023), <https://www.barrons.com/articles/stablecoins-regulation-currencies-us-6e759212>.