ARTICLES

Unbundling Banking, Money, and Payments

DAN AWREY*

For centuries, our systems of banking, money, and payments have been legally and institutionally intertwined. The fact that these three—theoretically distinct—systems have been bundled together so tightly and for so long reflects a combination of historical accident, powerful economic and political forces, path dependence, and technological capacity. Importantly, it also reflects the unique and often underappreciated privileges and protections that the law bestows on conventional deposit-taking banks. These privileges and protections have entrenched banks as the dominant suppliers of both money and payments—erecting significant barriers to entry, undermining financial innovation and inclusion, spurring destabilizing regulatory arbitrage, and exacerbating the "too-big-to-fail" problem. Against this backdrop, the recent emergence of a variety of new financial technologies, platforms, and policy tools hold out the tantalizing prospect of breaking this centuries-old stranglehold over our basic financial infrastructure. The essential policy problem, at least as conventionally understood, is that creating a level legal playing field would pose a serious threat to both monetary and financial stability. This Article demonstrates that this need not be the case and advances a blueprint for how we can safely unbundle banking, money, and payments thereby enhancing competition, promoting greater financial innovation and inclusion, and ameliorating the too-big-to-fail problem.

TABLE OF CONTENTS

* Professor of Law, Cornell Law School; Research Member, European Corporate Governance Institute. I would like to thank John Armour, John Crawford, Luca Enriques, Stephen Lubben, Joshua Macey, James McAndrews, Lev Menand, Alistair Milne, Leon Sanderson, George Selgin, Rory Van Loo, and David Zaring for their constructive comments, advice, and support. I would also like to thank the participants of workshops organized by the Federal Reserve Board, the Wharton School, and Boston University. All errors remain my own.

INTRODUCTION

Banks.[1] You have probably been aware of their existence for most of your life. As a child, you saw them on television, learned about them in school, and perhaps even heard your parents talk about them at the kitchen table. As a young adult, you probably opened your first bank account—an important rite of passage alongside your first job, your first kiss, and your first heartbreak. Today, your salary probably goes into a bank account—and your rent, your electricity bill, and your taxes probably come out of one. There is also a good chance that you or someone you know has borrowed money from a bank, whether to go to college, buy a house, or start a new business. Banks are part of the fabric of our world—*institutions* in every sense of the word. And yet, like so many of our core institutions, few of us have ever taken the time to consider the various functions that banks perform, how they are able to perform them, or how exactly that they became such an important part of everyday life.

1. For the purposes of this Article, unless otherwise indicated, any reference to a "bank" or "banks" should be construed as encompassing conventional deposit-taking banks, savings associations, thrifts, and other "insured depository institutions" as defined under federal banking law. *See infra* Part I (detailing the historical development of banks, their definition, and functions). It therefore does *not* include investment banks, merchant banks, or other financial institutions that have historically been associated with the business of "banking" but which are not insured depository institutions.

Banks perform three essential functions in a modern economy. Most of the time, we understandably focus on the function for which banks were originally named: making *loans* and extending other forms of credit to individuals, households, businesses, and governments.[2] Yet, it is the other two functions that arguably best explain the importance of banks in our daily lives. The first is *money* creation, with bank deposits representing far and away the largest source of money in the United States and most other countries.[3] The second is *payments*: moving that money across time and space in satisfaction of our financial obligations.[4] Ultimately, it is the bundling of these three functions—banking, money, and payments—that has made banks such a successful and enduring institutional innovation. It is also an important part of the reason why policymakers view banking crises as such an existential threat to the very economies that these institutions helped build. This Article explores the dominant role of banks—specifically *in the realm of money and payments*—and asks whether we can promote greater competition without posing new risks to monetary and financial stability.[5]

The story of how banks became so deeply embedded at the heart of our financial and economic system is long, complicated, and—in many ways—still being written. It is a story about war, politics, economics, entrepreneurship, technology, and path dependence.[6] Importantly, it is also a story about the *law*. In the United States, the law grants banks a number of unique privileges and protections. Perhaps most famously, the law provides banks with a comprehensive public backstop: a financial safety net that includes access to the Federal Reserve's emergency lending facilities, federal deposit insurance, and a special bankruptcy regime for struggling banks.[7] This safety net gives banks a comparative advantage in the creation of monetary liabilities, transforming otherwise risky deposits

2. The word "bank" is derived from the Old Italian (*banca*), Middle French (*banque*), and Old High German (*bank*) words for the tables at which Medieval moneylenders lent and collected money. *See Bank*, OXFORD ENG. DICTIONARY, https://www.oed.com/view/Entry/15237#eid28163689 [https://perma.cc/62XD-FUDY] (last visited Jan. 31, 2022).

3. See *infra* Section I.A, for a more detailed description of the role of banks in money creation.

4. The conventional definition of a "payment system" is captured by Hal Scott: "A payment system is a network of interconnecting entities that facilitates the exchange of data required to initiate, authorize, clear, and settle cash or credit claims between payors and payees." Hal S. Scott, *The Importance of the Retail Payment System*, PROGRAM INT'L FIN. SYS., Dec. 16, 2014, at 1, 5, https://www.pifsinternational.org/research/?_research-years=2014 [https://perma.cc/P3QB-6P6R]. As we shall see, several aspects of the unbundling process described in this Article challenge this conventional definition.

5. In its focus on how to promote greater competition within the consumer financial products industry, this Article intersects with recent scholarship by Rory Van Loo and others. *See generally, e.g.*, Rory Van Loo, *Making Innovation More Competitive: The Case of Fintech*, 65 UCLA L. REV. 232 (2018). While Van Loo focuses on the role and design of regulatory agencies in promoting greater competition, this Article focuses on the structure and regulation of the financial institutions that offer money and payments.

6. For a small sample of the enormous literature on the history and politics of banking in the United States, see generally KATHRYN C. LAVELLE, MONEY AND BANKS IN THE AMERICAN POLITICAL SYSTEM (2013); MURRAY N. ROTHBARD, A HISTORY OF MONEY AND BANKING IN THE UNITED STATES: THE COLONIAL ERA TO WORLD WAR II (Joseph T. Salerno ed., 2002); and BRAY HAMMOND, BANKS AND POLITICS IN AMERICA: FROM THE REVOLUTION TO THE CIVIL WAR (2d prtg. 1991).

7. See *infra* Section II.A, for a more detailed description of this financial safety net.

into "good money."[8] Almost equally as important, although far less appreciated, the law grants banks exclusive access to the Federal Reserve master accounts and, as a consequence, the major clearing networks that collectively make up the financial plumbing through which the vast majority of payments currently flow. This gives banks—and *only* banks—direct access to our basic financial infrastructure. Last but not least, through low profile and highly technocratic regulations such as brokered deposit rules, the law makes it less costly for banks to embed their products and services within the business models of potential competitors.

The policy rationales for these unique privileges and protections are grounded in two important and long-standing objectives.[9] The first is to promote the safety and soundness of individual banks. The second is to prevent idiosyncratic bank failures from metastasizing into wider and more destructive financial crises. Yet, these privileges and protections also create significant and often overlooked distortions.[10] First and foremost, the absence of a level legal playing field serves to entrench banks as the dominant suppliers of both money and payments. The resulting lack of competition undercuts financial innovation and slows progress toward greater financial inclusion.[11] Second, the high costs of bank regulation—that is, the price of securing these privileges and protections—drive a process of relentless and destabilizing "regulatory arbitrage" as new competitors seek to replicate the bundle of products and services offered by conventional deposit-taking banks.[12] Lastly, by installing banks at the apex of our systems of money and payments, the law reinforces their virtually indispensable role within the modern economy, thereby exacerbating the "too-big-to-fail" problem.[13] Together, these distortions help explain why banking, money, and payments have been bundled together so tightly and for so long. They also help explain why banks, despite their declining importance as sources of credit,[14] continue to occupy such a central position within our existing systems of money and payments.

---

8. *See generally* Dan Awrey, *Bad Money*, 106 CORNELL L. REV. 1 (2020) (describing the distinction between "good" and "bad" money).

9. See *infra* Parts II, IV, for a more detailed description of these policy objectives.

10. See *infra* Part III, for a more detailed description of these distortions.

11. The Center for Financial Inclusion defines "financial inclusion" as "[a] state in which all people who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients." *Toolkits and Guides: Financial Inclusion Glossary*, CTR. FOR FIN. INCLUSION (Oct. 2, 2018), https://www.centerforfinancialinclusion.org/financial-inclusion-glossary/ [https://perma.cc/M8JN-FDMY] (emphasis omitted).

12. Broadly speaking, the term "regulatory arbitrage" refers to the strategy of exploiting differences between the *legal* frameworks imposed on various types of financial markets and institutions that bear a level of *functional* substitutability, ultimately in order to minimize the extent of any regulatory burden. *See* Victor Fleischer, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 229–30 (2010).

13. See *infra* Section III.C, for a detailed explanation of why the privileges and protections afforded to banks exacerbate the too-big-to-fail problem.

14. *See, e.g.*, Greg Buchak, Gregor Matvos, Tomasz Piskorski & Amit Seru, *Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks*, 130 J. FIN. ECON. 453, 453 (2018) (describing a significant increase in the proportion of U.S. residential mortgages originated by non-bank "fintech" lenders).

Yet, there is change on the horizon. Recent decades have witnessed a flurry of promising and potentially transformative developments. These developments stem from important and ongoing technological advances: everything from a dramatic leap forward in computer storage capacity and processing power; to the emergence and proliferation of the Internet; to artificial intelligence; cloud computing; and distributed ledger technology.[15] These technological advances have made possible a host of new financial markets, institutions, and platforms that aspire to compete with banks in the realm of money and payments. These emerging competitors include popular non-bank payment platforms such as PayPal, Venmo, and Wise, China's AliPay and WeChat Pay, and Kenya's M-Pesa.[16] They also include embryonic ventures such as Facebook's Libra project—recently rechristened Diem—and other so-called "stablecoins."[17]

The emergence of these and other "shadow payment platforms (SPPs)"[18] has, in turn, forced policymakers to rethink the legal, technological, and institutional architecture of our existing systems of money and payments. This has triggered a range of thoughtful and creative policy proposals, including the creation of "FedAccounts,"[19] "Inclusive Value Ledger[s],"[20] a "People's Ledger,"[21] and central bank digital currencies (CBDCs).[22] It has also inspired draft legislation such as the recently announced Stablecoin Tethering and Bank Licensing Enforcement

15. For a small sample of the literature exploring the impact of these and other technologies on finance, see generally Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon*, 36 YALE J. ON REGUL. 735 (2019); Chris Brummer & Yesha Yadav, *Fintech and the Innovation Trilemma*, 107 GEO. L.J. 235 (2019); MICHAEL CASEY, JONAH CRANE, GARY GENSLER, SIMON JOHNSON & NEHA NARULA, INT'L CTR. FOR MONETARY & BANKING STUD., THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON FINANCE: A CATALYST FOR CHANGE (2018), https://www.sipotra.it/wp-content/uploads/2018/07/The-Impact-of-Blockchain-Technology-on-Finance-A-Catalyst-for-Change.pdf [https://perma.cc/T5SL-KENQ]; and TECHNOLOGY AND FINANCE: CHALLENGES FOR FINANCIAL MARKETS, BUSINESS STRATEGIES AND POLICY MAKERS (Morten Balling et al. eds., 2003).

16. For a more detailed description of these and other platforms, see generally Dan Awrey & Kristin van Zwieten, *The Shadow Payment System*, 43 J. CORP. L. 775 (2018) and Dan Awrey & Kristin van Zwieten, *Mapping the Shadow Payment System* 14–24 (SWIFT Inst., Working Paper No. 2019-001, 2019) [hereinafter Awrey & van Zwieten, *Mapping the SPP*], https://swiftinstitute.org/wp-content/uploads/2019/10/Mapping-the-Shadow-Payment-System-vFINAL.pdf [https://perma.cc/HZ5E-5LLZ].

17. For an overview of stablecoins, see generally DOUGLAS ARNER, RAPHAEL AUER & JON FROST, BANK FOR INT'L SETTLEMENTS, STABLECOINS: RISKS, POTENTIAL AND REGULATION (2020), https://www.bis.org/publ/work905.pdf [https://perma.cc/Z7YH-MAF5].

18. *See* Awrey & van Zwieten, *Mapping the SPP*, *supra* note 16, at 1. Unless otherwise indicated, this Article uses the terms SPP and platform interchangeably.

19. John Crawford, Lev Menand & Morgan Ricks, *FedAccounts: Digital Dollars*, 89 GEO. WASH. L. REV. 113, 116–17 (2021).

20. Robert Hockett, *The New York Inclusive Value Ledger: A Peer-to-Peer Savings & Payments Platform for an All-Embracing and Dynamic State Economy* 1–3 (Cornell L. Sch. Legal Stud. Rsch. Paper Series, Paper No. 19-39, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3470923 [https://perma.cc/52PH-MYY7].

21. Saule T. Omarova, *The People's Ledger: How to Democratize Money and Finance the Economy*, 74 VAND. L. REV. 1231, 1236 (2021).

22. BANK OF CAN., EUR. CENT. BANK, BANK OF JAPAN, SVERIGES RIKSBANK, SWISS NAT'L BANK, BANK OF ENG., BD. OF GOVERNORS OF THE FED. RSRV & BANK FOR INT'L SETTLEMENTS, CENTRAL BANK DIGITAL CURRENCIES: FOUNDATIONAL PRINCIPLES AND CORE FEATURES 1–2 (2020), https://www.bis.org/publ/othp33.htm [https://perma.cc/8SZE-RULW].

(STABLE) Act.[23] Collectively, these technological, market, and policy developments represent an emergent process of *unbundling*: dismantling the historically intertwined relationship between banking, money, and payments. This unbundling holds out the prospect of a faster, better, more reliable, and more inclusive financial system—one that breaks the centuries-old stranglehold enjoyed by banks over our basic financial infrastructure.[24] Where this prospect is truly genuine, the laws that support and entrench the current bundled system of banking, money, and payments will therefore represent potentially significant obstacles to further progress.

In most industries, the optimal policy response would simply be to remove these obstacles and create a level legal playing field on which competition can drive financial innovation, inclusion, and growth. But banking is not just any industry. The essential policy problem, at least as conventionally understood, is that leveling this playing field would pose a serious threat to both monetary and financial stability.[25] By rolling back the financial safety net for banks,

23. *See* Press Release, Rashida Tlaib, Congresswoman, House of Representatives, Tlaib, García and Lynch Introduce Legislation Protecting Consumers from Cryptocurrency-Related Financial Threats (Dec. 2, 2020), https://tlaib.house.gov/media/press-releases/tlaib-garcia-and-lynch-stableact [https://perma.cc/FLF3-BB2B].

24. These developments, and this Article, can thus be viewed as intersecting with the long and distinguished line of academic literature and policy proposals by economists such as Irving Fisher, Henry Simons, Milton Friedman, Robert Litan, and others designed—as Litan describes it—to "break the Gordian knot between deposit taking and commercial lending." ROBERT E. LITAN, WHAT SHOULD BANKS DO? 145 (1987). For examples of literature discussing the breakup of deposit taking and commercial lending, see generally IRVING FISHER, 100% MONEY (rev. ed. 1936); HENRY C. SIMONS, A POSITIVE PROGRAM FOR LAISSEZ FAIRE: SOME PROPOSALS FOR A LIBERAL ECONOMIC POLICY (Harry D. Gideonse ed., 1934); MILTON FRIEDMAN, A PROGRAM FOR MONETARY STABILITY (3d prtg. 1963). For examples of more recent literature, see generally Adam J. Levitin, *Safe Banking: Finance and Democracy*, 83 U. CHI. L. REV. 357 (2016) and JOHN KAY, CTR. FOR THE STUDY OF FIN. INNOVATION, NARROW BANKING: THE REFORM OF BANKING REGULATION (2009), https://static1.squarespace.com/static/54d620fce4b049bf4cd5be9b/t/5532be2de4b07fb5e0478c7d/1429388845292/Narrow+Banking%2C+the+reform+of+banking+regulation%2C+by+John+Kay.pdf [https://perma.cc/7GNA-BZY7]. The important differences between the blueprint advanced in this Article and these earlier unbundling proposals are described in greater detail in *infra* Part IV.

25. *See, e.g.*, FERNANDO RESTOY, BANK FOR INT'L SETTLEMENTS, FINTECH REGULATION: HOW TO ACHIEVE A LEVEL PLAYING FIELD 9 (2021), https://www.bis.org/fsi/fsipapers17.pdf [https://perma.cc/7NP2-GWUE]; Agustín Carstens, Gen. Manager, Bank for Int'l Settlements, Big Tech in Finance and New Challenges for Public Policy (Dec. 4, 2018), https://www.bis.org/speeches/sp181205.htm [https://perma.cc/987T-UF6Q]; FIN. STABILITY BD., BIG TECH IN FINANCE: MARKET DEVELOPMENTS AND POTENTIAL FINANCIAL STABILITY IMPLICATIONS 26–27 (2019), https://www.fsb.org/2019/12/bigtech-in-finance-market-developments-and-potential-financial-stability-implications/ [https://perma.cc/NP99-ZFRP]. This is not to suggest that banks cannot survive without the financial safety net, merely that the *transition* from a world in which banks enjoy a financial safety net to one where they do not may be highly disruptive. For a discussion of banking systems that have survived without a public backstop, see generally LAWRENCE H. WHITE, FREE BANKING IN BRITAIN: THEORY, EXPERIENCE AND DEBATE, 1800–1845 (2d ed. 1995); 1 FREE BANKING (Lawrence H. White ed., 1993); 2 FREE BANKING (Lawrence H. White ed., 1993); 3 FREE BANKING (Lawrence H. White ed., 1993); and THE EXPERIENCE OF FREE BANKING (Kevin Dowd ed., 1992). For a brief but comprehensive description of historical banking systems that have survived without a public backstop, see generally Larry White, *What You Should Know About Free Banking History*, ALT-M (Apr. 28, 2015), https://www.alt-m.org/2015/04/28/what-you-should-know-about-free-banking-history/ [https://perma.cc/V6AT-VL2U]. Although beyond the

policymakers risk undermining confidence in the money supply and, with it, the stability of the conventional banking system. On the other hand, expand the public safety net, along with access to basic financial infrastructure, to SPPs and they risk fomenting moral hazard and, once again, financial instability.[26]

Further compounding matters, designing regulatory frameworks that are both functionally equivalent to conventional bank regulation and yet specifically tailored to the unique business models of these new markets, institutions, and platforms poses a host of significant technocratic challenges.[27] These challenges help explain why policymakers have often been reluctant to fundamentally rethink the legal frameworks that support and entrench our current bundled system of banking, money, and payments. If policymakers get it wrong, they risk not only squandering the inherent promise of these new technologies but also—and far worse—undermining public confidence in the money supply, the stability of the financial system, and perhaps even the longer-term strength of the broader economy.

So how can policymakers thread this difficult needle? According to the nation's largest federal banking regulator—the Office of the Comptroller of the Currency (OCC)—one answer is the creation of so-called "fintech" charters: a single, flexible licensing regime for new financial institutions and platforms.[28] Lamentably, however, the OCC's fintech charter represents a legally and conceptually dubious fudge that is unlikely to promote financial innovation or reduce emerging threats to financial stability.[29] Most importantly, by allowing charter holders to bundle lending, money, and payments, the fintech charter would permit firms to replicate the business model of conventional deposit-taking banks, while simultaneously subjecting them to a more "flexible," and potentially less

scope of this Article, this shift would also necessitate significant changes to federal and state bank regulation.

26. See *infra* Section II.A, for a description of the financial safety net and see *infra* Section IV.A, for a discussion of the conventional debates around the potential risks of expanding and contracting it.

27. These challenges are described in more detail later in this Article. *See infra* Section IV.A; *see also* JOHN ARMOUR, DAN AWREY, PAUL DAVIES, LUCA ENRIQUES, JEFFREY N. GORDON, COLIN MAYER & JENNIFER PAYNE, PRINCIPLES OF FINANCIAL REGULATION 84–91 (1st ed. 2016) (describing the functional substitutability of many financial markets and institutions and the challenges this poses for the design of effective financial regulation).

28. *See* OFF. OF THE COMPTROLLER OF THE CURRENCY, POLICY STATEMENT ON FINANCIAL TECHNOLOGY COMPANIES' ELIGIBILITY TO APPLY FOR NATIONAL BANK CHARTERS 2 (2018), https://www.occ.gov/news-issuances/news-releases/2018/pub-other-occ-policy-statement-fintech.pdf [https://perma.cc/5JX5-JRW3].

29. The legality of these fintech charters was recently the subject of litigation before the Second Circuit Court of Appeals. *See* Lacewell v. Off. of the Comptroller of the Currency, 999 F.3d 130, 131 (2d Cir. 2021) (reversing the district court's decision to deny the motion to dismiss, citing issues with standing, establishing injury, and ripeness). For a flavor of the debate over the OCC's fintech charter, *compare* David Zaring, *Modernizing the Bank Charter*, 61 WM. & MARY L. REV. 1397, 1405–06 (2020), *with* Lev Menand & Morgan Ricks, *Federal Corporate Law and the Business of Banking*, 88 U. CHI. L. REV. 1361, 1415–17 (2021). In a nutshell, the proposed fintech charter is legally dubious because Congress has only given the OCC the authority to charter *banks*, not non-bank financial institutions of the variety that the proposed fintech charter would seek to attract. It is conceptually dubious because the OCC's position is that the business of "banking" is equivalent to "lending," and thus completely disregards the essential role of banks in money and payments. *See* Brief of Thirty-Three Banking Law Scholars as *Amici Curiae* in Support of Appellee at 1, *Lacewell*, 999 F.3d 130 (No. 19-4271-cv).

effective, framework of prudential regulation and supervision.[30] Ultimately, subjecting functionally similar financial institutions to functionally divergent regulatory frameworks is a dubious way to promote greater competition. It is also a recipe for regulatory arbitrage and financial instability.

This Article argues that a far better answer can be found in the logic of unbundling itself. In many respects, this logic mirrors the distortions generated by the current bundled system—including, most notably, the desire to create a faster, better, and more inclusive system of money and payments, while simultaneously avoiding the extremely costly and often ill-fitting regulatory frameworks governing conventional deposit-taking banks. Importantly, it also reflects the overarching imperative that any new system must—at the very least—not pose any additional threats to our monetary, financial, or economic stability. Put bluntly: if promoting greater financial innovation and inclusion risks fomenting potential systemic risks, then the juice may simply not be worth the squeeze.

Building on this logic, this Article advances a blueprint for how we can safely unbundle our systems of banking, money, and payments. This blueprint envisions three relatively straightforward changes to federal law.[31] The first change is an amendment to the Federal Reserve Act that would enable financial institutions *other than banks* to open and maintain master accounts within the Federal Reserve System. These master accounts enable banks to settle payments to each other on the accounts of the Federal Reserve. More importantly, they are a legal and operational requirement for direct membership in the major clearing networks that connect the sprawling U.S. payment system.[32] By expanding access to these accounts, this change would reduce the reliance of platforms such as PayPal, Venmo, and Wise on conventional deposit-taking banks for indirect access to these networks—thus enabling these SPPs to compete on a more level footing. By promoting more vigorous competition, this change would also create a more supportive legal environment for financial innovation and inclusion and help ameliorate the too-big-to-fail problem.

The second change is designed to reflect the potentially significant risks stemming from this proposed expansion of access to Federal Reserve master accounts. Specifically, in order to open and maintain a master account, these SPPs should be required to hold 100% of customer deposits in these accounts. Thus, for every dollar that these platforms accept on behalf of their customers, a dollar must be immediately deposited into their Federal Reserve master account. This change would effectively insulate customers from the risks associated with an SPP's bankruptcy or default, thereby eliminating the prospect of destabilizing customer

30. Although the OCC has indicated that firms that accept "deposits" will not be eligible to apply for the fintech charter, this constraint is only as good as the definition of a deposit. However, as described in greater detail below, *see infra* Section IV.B, the current definition is essentially tautological and excludes a range of non-bank financial institutions that, on the basis of any functional definition of the term, already accept deposits.

31. See *infra* Section IV.B, for a more detailed rendering of this blueprint.

32. *See infra* notes 181–84 and accompanying text.

runs.[33] The elimination of this run risk would then remove the principal rationale for extending a public financial safety net and, with it, the need for costly and complex regulation and supervision designed to mitigate the resulting moral hazard problems. The net effect of this change—what we might call a "no intermediation rule"—would therefore be to free these new platforms from the straitjacket of conventional bank regulation.

Perhaps more than any other element of this blueprint, the no intermediation rule reflects the unique logic of unbundling. If SPPs want to bundle lending with money and payments, then functionally speaking there is no reason why they should not be regulated as banks. Conversely, if these new platforms simply seek to provide money and payments, then the no intermediation rule is little more than a peppercorn in exchange for direct access to the U.S. payment system and the ability to compete with banks on more level terms. Furthermore, this rule would not apply to platforms that only seek to provide *either* lending (such as Quicken Loans) *or* payments (such as ApplePay) without also creating new monetary liabilities.

Delivering on this logic requires a third and long overdue change to federal banking law: the redefinition of a bank itself.[34] Under current law, this definition is based on a tautology: a bank is a firm that issues deposits, and deposits are financial instruments that are issued by a bank.[35] This circular definition has created a glaring loophole that many new financial institutions and platforms have readily exploited. The third and final change would be to close this loophole by adopting a functional definition of a bank as any financial institution that combines lending with the creation of monetary liabilities.

This blueprint is both radical and incremental. It is radical because it envisions a world in which banks may one day—perhaps not that far off—no longer play such an important role in everyday economic life. Yet, it is incremental because it does not call on policymakers to dismantle the legal privileges and protections that banks currently enjoy; it merely demands that they be forced to compete on a more level playing field in the realm of money and payments. Indeed, relative to the OCC's proposal for fintech charters, the no intermediation rule would actually strengthen the position of banks as the only financial institutions legally permitted to combine lending, the creation of monetary liabilities, and direct access to the payment system. Nor, importantly, does this blueprint call for the development of a new and untested regulatory framework or significant additional government bureaucracy. Lastly, regardless of whether this blueprint ultimately succeeds in

33. See *infra* Section II.A, for a discussion of the problem of bank runs, and see *infra* Section III.B, for a description of how this problem can also plague non-bank payment platforms.

34. The most vocal and convincing advocate for this change in recent years has been Professor Morgan Ricks, whose research illuminates both the nature of the problems created by this circular definition and proposes specific statutory language designed to address these problems. *See generally* MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION (2016).

35. See *infra* Section IV.B, for a more detailed explanation of this tautology.

achieving its desired objectives, it would pose few, if any, new risks to monetary or financial stability.[36]

This Article proceeds as follows. Part I briefly traces the historical evolution of our systems of money and payments, illuminating the essential role that banks play at the heart of these systems today. Part II identifies and describes how the financial safety net, legal restrictions on infrastructure access, and other technocratic rules entrench banks in this role—thereby reinforcing the tight institutional bundling of banking, money, and payments. Part III then explores the distortions created by this legally privileged bundling, looking specially at how the law erects barriers to entry, undermines financial innovation and inclusion, spurs destabilizing regulatory arbitrage, and exacerbates the too-big-to-fail problem. Part IV chronicles the emerging process of unbundling, compares the different models that have been proposed, and lays out a blueprint for how we can harness this process to build a better, faster, and safer system of money and payments.

I. THE BUNDLING OF BANKING, MONEY, AND PAYMENTS

The very nature of institutions often makes it difficult for us to imagine what it would be like if they were different. This is certainly true of one of our most important, ubiquitous, and yet poorly understood economic institutions: banks. For well over a century, we have looked to banks as a source of financing, as a place to keep our money, and as providing the principal means by which we transfer this money to others to pay our taxes, bills, mortgage, or rent; buy our groceries and gasoline; and discharge our other debts.[37] Yet, this unique institutional bundling of banking, money, and payments was not preordained; it reflects the confluence of history, economics, politics, technology, and other forces. This Part briefly describes the origins of this bundling, its historical development, and what it looks like today. Part II then illuminates the central role of the law in binding it all together.

A. THE GOLDSMITHS' LEGACY: BANKS AND MONEY

The nature and sources of money have varied across time, place, and culture.[38] The first written records documenting the use of money date back to ancient

36. In theory, exposing banks to greater competition could lead to more bank failures. *See* Franklin Allen & Douglas Gale, *Competition and Financial Stability*, 36 J. MONEY, CREDIT & BANKING 453, 453 (2004). In practice, however, both the probability and impact of this risk on the wider financial system is often overstated and, in any event, can be addressed via the financial safety net. See *infra* Section IV.D, for a more detailed discussion of possible challenges and objections.

37. Admittedly, to say that we have been relying on banks as an important source of banking, money, and payments for well over a century is both vague and overly simplistic. The first deposit-taking, note-issuing bank in the United States was in all likelihood the Bank of Pennsylvania, established in 1780. *See* WILLIAM GRAHAM SUMNER, A HISTORY OF BANKING IN THE UNITED STATES, *in* 1 A HISTORY OF BANKING IN ALL THE LEADING NATIONS 1, 14 (New York, The Journal of Commerce and Commercial Bulletin 1896). However, with the notable exception of trade financing, U.S. banks would not come to play an important role in financing private enterprise until the second half of the nineteenth century.

38. For a broad overview of the variety of credit, commodity-based, and hybrid monetary systems that have existed over the course of human history, see generally DAVID GRAEBER, DEBT: THE FIRST 5,000 YEARS 211–393 (1st prtg. 2011).

Mesopotamia (3500–800 B.C.), where the administrators of Sumerian temples used a basic accounting system to record debits and credits and calculate outstanding rents, loans, and various administrative fees.[39] Sumerian merchants and tradespeople would also record debits and credits on clay and metal tablets that could be transferred from hand to hand.[40] While most of these ancient records and tablets have now been lost to time, this basic architecture—built on a dual system of accounts and negotiable instruments—will be familiar to any student of modern banking. Indeed, if you open your wallet right now, you are likely to find both a bank card and a random collection of bills and coins.

Yet history rarely travels in a straight line. The Sumerian monetary system was dismantled by Alexander the Great, who replaced it with one based on plundered gold and silver that he then had minted into coins.[41] This *commodity*-based monetary system differed from the Sumerian *credit*-based system in that, rather than basing money on the promises that debtors owed to their creditors, it revolved around physical materials that were deemed to have intrinsic value beyond their use as a widely accepted token for purchasing goods and services.[42] Around the same period, commodity money systems based on gold, silver, bronze, and copper coins, disks, spades, or other objects emerged in northwest India,[43] northern China,[44] and the eastern Mediterranean—including the Roman Empire (625 B.C.–476 A.D.).[45] Over the next millennium, the decline and fall of these civilizations was then accompanied by a return to rudimentary credit-based monetary systems, often under the aegis of local religious institutions.[46]

---

39. This system was denominated in units—known as "shekels"—that were based on quantities of barley and ultimately backed by ingots of silver. *See* Michael Hudson, *Reconstructing the Origins of Interest-Bearing Debt and the Logic of Clean Slates*, *in* 3 DEBT AND ECONOMIC RENEWAL IN THE ANCIENT NEAR EAST 7, 23 (Michael Hudson & Marc Van de Mieroop eds., 2002). This system also foreshadowed the emergence of a number of credit-based monetary systems that were tied in various ways to the value of underlying commodities.

40. *See* A. Mitchell Innes, *What is Money?*, 30 BANKING L.J. 377, 395–96 (1913) (describing the key features of these "shubati tablets" and how they changed hands).

41. *See* PETER GREEN, ALEXANDER TO ACTIUM: THE HISTORICAL EVOLUTION OF THE HELLENISTIC AGE 366 (1990) (describing how Alexander emptied the gold and silver reserves in conquered territories and then minted the bullion into coins for the purposes of paying his army and other creditors).

42. *See* LAWRENCE H. WHITE, THE THEORY OF MONETARY INSTITUTIONS 26 (1999) (describing the features of commodity money).

43. *See* M. K. Dhavalikar, *The Beginning of Coinage in India*, 6 WORLD ARCHAEOLOGY 330, 332, 335 (1975). *See generally* SATYA PRAKASH & RAJENDRA SINGH, COINAGE IN ANCIENT INDIA: A NUMISMATIC, ARCHAEOCHEMICAL AND METALLURGICAL STUDY OF ANCIENT INDIAN COINS (1968) (detailing the development of the commodity money system in India).

44. *See* David M. Schaps, *The Invention of Coinage in Lydia, in India, and in China (Part I)*, 44 BULLETIN DU CERCLE D'ÉTUDES NUMISMATIQUES 281, 284 (2007); David M. Schaps, *The Invention of Coinage in Lydia, in India, and in China (Part II)*, 44 BULLETIN DU CERCLE D'ÉTUDES NUMISMATIQUES 313, 314 (2007).

45. *See* Walter Scheidel, *The Monetary Systems of the Han and Roman Empires* 2–4 (Princeton/Stanford Working Papers in Classics, No. 110505, 2008), https://www.princeton.edu/~pswpc/pdfs/scheidel/020803.pdf [https://perma.cc/T6YL-VUQX].

46. *See* GRAEBER, *supra* note 38, at 297–98.

Fueled by the discovery of the New World and its plentiful sources of gold and silver, the pendulum in Europe would swing back toward the widespread use of commodity money beginning in the fifteenth century.[47] Yet, this same period would also witness important and enduring innovations in credit-based monetary systems, including the emergence of the Lombard and Medici banking families in Northern Italy, the Fugger and other merchant banking groups in Germany, and early public banks such as the Bank of Amsterdam.[48] The historical record thus reveals a pattern of periodic oscillation between credit and commodity-based monetary systems, with many of these systems characterized by the contemporaneous use of both credit and commodity money.[49]

So how did we end up with our current monetary system? The answer is war—and the opportunity it presented for a group of enterprising London goldsmiths. Historically, the business of goldsmiths consisted mainly of the manufacture of gold and silver plates and jewelry; the purchase and sale of diamonds and other precious jewels; and, importantly, assessing the purity of gold and silver coins.[50] Following the outbreak of the English Civil War (1642–1651), these goldsmiths saw an opportunity to expand this business by permitting wealthy customers to store their gold and silver coins in the goldsmiths' vaults—thus protecting them from theft, seizure, or destruction amidst the chaos of the escalating conflict.[51] Eventually, this safekeeping role evolved into one in which the goldsmiths enjoyed full legal authority to use these coins for the purposes of making loans to businesses, households, and governments.[52] These goldsmiths had thus stumbled upon the model that would eventually become synonymous with the business of banking: combining deposit-taking with the extension of credit to the public.

Strictly speaking, the goldsmiths did not invent modern banking.[53] Yet, the goldsmiths' model did combine three elements that continue to define our intertwined systems of money and banking to this day. First, the goldsmiths accepted

---

47. Much of this gold and silver ultimately found its way east, reflecting the burgeoning European trade with India and China. *See* KENNETH POMERANZ, THE GREAT DIVERGENCE: CHINA, EUROPE, AND THE MAKING OF THE MODERN WORLD ECONOMY 4–5 (2000).

48. *See* CHARLES P. KINDLEBERGER, A FINANCIAL HISTORY OF WESTERN EUROPE 42–49 (1984) (describing the Italian banking families, German merchant banks, and early public banks).

49. *See* GRAEBER, *supra* note 38, at 213 ("[W]hat we see is a broad alternation between periods dominated by credit money and periods in which gold and silver come to dominate . . . .").

50. *See* BENJAMIN GEVA, THE PAYMENT ORDER OF ANTIQUITY AND THE MIDDLE AGES: A LEGAL HISTORY 473 (2011); J. MILNES HOLDEN, THE HISTORY OF NEGOTIABLE INSTRUMENTS IN ENGLISH LAW 71 n.2 (1955).

51. *See* JAMES STEVEN ROGERS, THE EARLY HISTORY OF THE LAW OF BILLS AND NOTES: A STUDY OF THE ORIGINS OF ANGLO-AMERICAN COMMERCIAL LAW 119 (1995); GEVA, *supra* note 50, at 474.

52. *See* R. D. RICHARDS, THE EARLY HISTORY OF BANKING IN ENGLAND 37 (reprt. 2012) (1958); GEVA, *supra* note 50, at 474–75.

53. In Europe, the Genoese, Venetian, and Lombard banking systems can all arguably lay prior claim to this distinction. *See* Robert S. Lopez, *The Dawn of Medieval Banking*, *in* CTR. FOR MEDIEVAL & RENAISSANCE STUD., UNIV. OF CAL., L.A., THE DAWN OF MODERN BANKING 1, 7–8 (1979); Jean-François Bergier, *From the Fifteenth Century in Italy to the Sixteenth Century in Germany: A New Banking Concept?*, *in* CTR. FOR MEDIEVAL & RENAISSANCE STUD., UNIV. OF CAL., L.A., THE DAWN OF MODERN BANKING 105, 105 (1979); Roberts L. Reynolds, *A Business Affair in Genoa in the Year 1200; Banking, Bookkeeping, a Broker (?), and a Lawsuit*, *in* 2 STUDI DI STORIA E DIRITTO IN ONORE DI

deposits of gold and silver coins; these deposits were then credited to accounts held in the name of the goldsmiths' customers.[54] Second, goldsmiths would issue paper receipts—or *notes*—as evidence of these deposits.[55] These notes represented the goldsmiths' undertaking to repay deposited funds on demand when presented with the receipt.[56] Over time, these notes came to possess a relatively high degree of transferability, thus enabling the holder "to settle a great variety of tradesman's bills, to pay fees and taxes, to provide ready cash, and to purchase shares, lottery tickets, and tallies."[57] That is, these receipts could themselves be used as *money*.[58] Third, depositors could request *drafts* in any amount up to the full value of their deposit made payable to either the bearer of the draft or a specified third party.[59] These drafts were the predecessors of modern *checks*.[60]

The goldsmiths' model would eventually take root across Western Europe. It was also exported—albeit slowly and in pieces—to the New World. Elements of the goldsmiths' model appeared in the American colonies as early as 1690.[61] These first proto-banks issued promissory notes to their depositors, typically secured against real property or precious metals.[62] As in the United Kingdom, these notes would eventually come to possess a degree of transferability and thus circulate, often widely, as a form of paper money. The first conventional deposit-taking bank was likely the Bank of Pennsylvania, established in 1780 to raise

ENRICO BESTA PER IL XL ANNO DEL SUO INSEGNAMENTO 167, 172 (1939); GEVA, *supra* note 50, at 354, 359.

54. *See* GEVA, *supra* note 50, at 474.

55. *Id*. at 476. These notes were payable either to the payee or to the bearer of the receipt. *Id*. The goldsmiths appear to have borrowed this element from the Bank of Amsterdam, which issued paper receipts that were often worth more than the equivalent denomination of metal coins because they were not vulnerable to clipping. *See* JOHN FROST, HYUN SONG SHIN & PETER WIERTS, BANK FOR INT'L SETTLEMENTS, AN EARLY STABLECOIN? THE BANK OF AMSTERDAM AND THE GOVERNANCE OF MONEY 9 (2020), https://www.bis.org/publ/work902.htm [https://perma.cc/57DQ-2EXE]. I am grateful to Lev Menand for pointing out this connection.

56. The oldest surviving description of the goldsmiths' model, along with the notes they issued, is a remarkable letter from 1676 titled "The Mystery of the New Fashioned Goldsmiths or Bankers: Their Rise, Growth, State and Decay." *See The New-Fashioned Goldsmiths*, 2 Q. J. ECONOMICS 251 app. (1888). Two of the oldest surviving notes, both issued by Field Whorwood in 1654, make it clear that the goldsmith undertook to "repay" deposits "upon demand." Frank Melton, *Goldsmiths' Notes, 1654-1655*, 6 J. SOC'Y. OF ARCHIVISTS 30, 31 (1978).

57. George Selgin, *Those Dishonest Goldsmiths*, 19 FIN. HIST. REV. 269, 274 (2012) (quoting D.M. Mitchell, *'Mr. Fowle Pray Pay the Washwoman': The Trade of a London Goldsmith-Banker, 1660-1692*, 23 BUS. & ECON. HIST. 27, 35 (1994)). The transferability of notes was initially contentious as a matter of law. For a description of how the law evolved to support the transferability of bank notes over the course of the seventeenth and especially eighteenth centuries, see generally CHRISTINE DESAN, MAKING MONEY: COIN, CURRENCY, AND THE COMING OF CAPITALISM 295–403 (1st ed. 2014).

58. Final settlement would then occur when the seller of the goods and services, or a subsequent transferee, returned the note to the goldsmith—in effect demanding that it honor its promise to repay the deposited funds. Over time, these privately issued notes would mostly be replaced by bank notes issued by the Bank of England. *See* DESAN, *supra* note 57, at 299–300.

59. GEVA, *supra* note 50, at 476.

60. *Id*. at 476–77; HOLDEN, *supra* note 50, at 206–10.

61. *See* SUMNER, *supra* note 37, at 4.

62. *Id*. at 8.

capital to finance the American Revolutionary War (1775–1783).[63] This was followed by the creation of the Bank of North America, which received the first federal bank charter in 1781.[64] Robert Morris, then-United States Superintendent of Finance, supported the creation of the Bank of North America on the grounds that it would stimulate private investment and, thereby, enhance government tax revenues.[65] Future Treasury Secretary Alexander Hamilton, meanwhile, saw the new bank as an opportunity to create what he described as "a sufficient medium" of exchange.[66] Put differently, Hamilton sought to develop a banking system to support the development of a more reliable system of money and payments.

Hamilton would eventually get his "sufficient medium"—although not in his lifetime and certainly not how he would have envisioned it.[67] The United States experimented with a variety of banking models over the course of the nineteenth century. Between 1791 and 1836, Congress would establish and subsequently dismantle two quasi-public banks: the ill-fated First and Second Banks of the United States.[68] The First and Second Banks existed alongside various regional, state, and local banking systems, each issuing their own paper bank notes.[69] Following the expiration of the Second Bank's federal charter in 1836, responsibility for chartering and regulating banks then fell exclusively to the states.[70] This was followed by a period of experimentation in bank business models and regulation often and inaccurately described as the "free banking" era.[71]

---

63. *See id.* at 12–14 (detailing the debates and discussions leading up to establishment of Bank of Pennsylvania). Although, unlike modern banks, the Bank of Pennsylvania was incorporated with a limited life. *See id.* at 14.

64. *See id.* Sumner refers to the Bank of North America as the first "specie paying, convertible bank note bank" in the United States. *Id.* at 17.

65. *See id.* at 15.

66. Letter from Alexander Hamilton to Robert Morris (Apr. 30, 1781), https://founders.archives.gov/documents/Hamilton/01-02-02-1167 [https://perma.cc/UXP4-T7JL].

67. Amongst other matters, Hamilton would have likely disapproved of both the dual chartering system described below and the highly fragmented banking system in the United States today. For a more detailed discussion of Hamilton's vision and how it differs from the system ultimately introduced under the National Banking Acts, Federal Reserve Act, and Banking Act of 1933, see generally Lev Menand, *Why Supervise Banks? The Foundations of the American Monetary Settlement*, 74 VAND. L. REV. 951 (2021).

68. *See* HAMMOND, *supra* note 6, at 114–43, 251–405 (describing the origins, role, and downfall of the First and Second Banks).

69. Notable examples include the Suffolk banking system in New England and the New York safety fund system. *See generally* GEORGE TRIVOLI, THE SUFFOLK BANK: STUDY OF A FREE-ENTERPRISE CLEARING SYSTEM (1979) (describing the Suffolk banking system); Charles W. Calomiris & Charles M. Kahn, *The Efficiency of Self-Regulated Payments Systems: Learning from the Suffolk System*, 28 J. MONEY, CREDIT & BANKING 766 (1996) (same); ROBERT E. CHADDOCK, THE SAFETY FUND BANKING SYSTEM IN NEW YORK, 1829–1866, *in* S. DOC. NO. 61-581, at 227 (1910) (describing the New York safety fund system).

70. The Second Bank of the United States was the only federally chartered bank during this period. Once it ceased to exist, the federal government thus ceased to have a role in bank chartering and regulation, leaving existing state chartering and regulation as the only game in town.

71. For a detailed comparative assessment of the successes and failures of various free banking regimes in the United States and elsewhere, see generally THE EXPERIENCE OF FREE BANKING, *supra* note 25 (describing experiments in free banking in Australia, Canada, Colombia, France, Ireland, Scotland, Switzerland, and the United States); and see also WHITE, *supra* note 25, at 89–135 (describing

This experimentation would effectively come to an end with the enactment of the National Banking Acts of 1863–1865. The National Banking Acts were designed to create a National Banking System, raise much needed finance for the Civil War, and prevent the further buildup of inflationary pressures stemming from the widespread issuance of state bank notes.[72] However, while Congress's intention was to replace these state bank notes with a single national currency "licensed, manufactured, and guaranteed by the federal government,"[73] the practical, inadvertent, and enduring effect was the creation of the "dual system" of federal and state bank charters that survives to this day.[74] With the creation of the Federal Reserve System in 1913,[75] along with the Federal Deposit Insurance Corporation (FDIC) in 1933,[76] all the essential institutional pieces of our current banking and monetary systems were finally in place.

The National Banking System had the effect of bifurcating the U.S. money supply into two distinct and familiar components. The first component consists of the one, five, ten, twenty, fifty, and one hundred dollar bills that are today printed by the U.S. Treasury Department, together with the quarters, dimes, nickels, and pennies minted by the U.S. Mint. The second component consists of the demand, savings, time, checking, and other deposit liabilities issued by federal and state banks. While the specific features of these deposit liabilities vary from product to product, they all reflect the same core bundle of contractual commitments. First, these contracts permit customers to *deposit* cash or other funds with the bank for safekeeping. These deposits are then credited to accounts held in each customer's name on the bank's books. Second, they permit customers to *withdraw* these funds either on demand or upon the expiration of a specific term. Third, customers can instruct the bank to *transfer* funds held within their accounts to specified third parties in satisfaction of their financial obligations.

---

the experience with free banking in the United States) and George Selgin, *Real and Pseudo Free Banking*, ALT-M (July 23, 2015), https://www.alt-m.org/2015/07/23/real-pseudo-free-banking/ [https://perma.cc/SR4T-684M] (suggesting that this era was not in fact characterized by free banking).

72. *See* National Bank Act of 1864, ch. 106, §§ 5, 8, 22, 62, 13 Stat. 99, 100–01, 105–06, 118 (codified as amended in 12 U.S.C. § 38); Act of March 3, 1865, ch. 78, § 6, 13 Stat. 469, 484. For a more detailed description of the dual banking system as it exists today, see MICHAEL S. BARR, HOWELL E. JACKSON & MARGARET E. TAHYAR, FINANCIAL REGULATION: LAW AND POLICY 171–82 (2d ed. 2018). The National Banking Acts achieved the first objective by creating the OCC and giving it the authority to charter, regulate, and supervise national banks. *See* National Bank Act, § 1. They achieved the last two objectives by requiring national banks to purchase government bonds and then restricting their ability to issue new bank notes to a percentage of these bond holdings. *See id.* §§ 16, 26, 31.

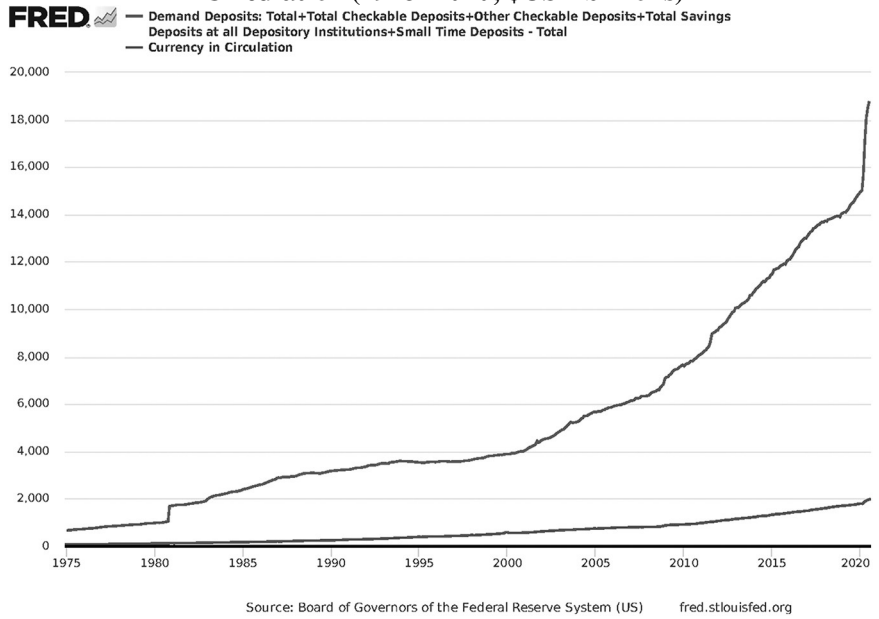
73. Calomiris & Kahn, *supra* note 69, at 770.

74. *See* BARR ET AL., *supra* note 72, at 171–82.

75. *What Is the Purpose of the Federal Reserve System?*, BD. OF GOVERNORS OF THE FED. RSRV. SYS. (Nov. 3, 2016), https://www.federalreserve.gov/faqs/about_12594.htm [https://perma.cc/W5Y8-PQQS].

76. *The FDIC: A History of Confidence and Stability*, FED. DEPOSIT INS. CORP., https://www.fdic.gov/exhibit/p1.html#/15 [https://perma.cc/M4F4-CT49] (last visited Feb. 6, 2022).

Figure 1: Monetary Liabilities of Depository Institutions Versus Currency in Circulation (1975–2020; $USD billions)[77]



In their seminal treatise, *A Monetary History of the United States*, Milton Friedman and Anna Schwartz trace the growth and composition of the U.S. money supply between 1867 and 1960.[78] One of the most striking elements of their findings is that the composition of the money supply has slowly shifted over time. In 1900, Friedman and Schwartz report that the total stock of bills and coins in public circulation was approximately $1.2 billion.[79] When compared against total bank deposits of approximately $7.3 billion, this translates into a deposit-to-currency ratio of just over six to one.[80] By 1960, however, with the aggregate money supply having increased by more than 3,500% to around $248 billion, the deposit-to-currency ratio had increased to approximately 7.6:1.[81] Even more remarkably, this shift has continued essentially unabated through to the present

77. Comparison of Total Monetary Liabilities and Currency in Circulation, FED. RSRV. BANK OF ST. LOUIS: FRED, https://fred.stlouisfed.org/ [https://perma.cc/5LJ7-ENDE] (The graphic compares (1) the sum of total demand deposits, total checkable deposits, other checkable deposits, total savings deposits at all depository institutions, and total small-time deposits against (2) currency in circulation.).

78. *See* MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES 1867-1960, at app. a (5th prtg. 1971).

79. *See id*. at 705.

80. *See id.*

81. *See id*. at 722.

day. Figure 1 compares the total stock of outstanding currency versus demand, savings, time, and checking deposits from 1975 to present.[82] This figure makes two things abundantly clear. First, banks are far and away the dominant source of money in the United States, with the deposit-to-currency ratio currently standing at just under ten to one. Second, this dominance appears only to be increasing over time.

There are three key takeaways from this whirlwind history tracing the development of the U.S. banking and monetary systems. First, monetary systems can, and do, evolve over time. Second, our current monetary system is based on institutional arrangements that considerably predate the invention of the lightbulb—let alone the personal computer, the cellphone, or the Internet. Third, this system has come to be dominated by a single and remarkably hardy species of financial institution: banks.

B. PLUMBERS IN PINSTRIPES: BANKS AND PAYMENTS

Given the central role of banks in money *creation*, it is perhaps not surprising that they have also come to play a central role in the *transfer* of money between individuals, businesses, and governments. Because bank deposits represent the accounting liabilities of a bank to its customers, it is relatively easy to execute payments between customers at the *same* bank. With the proverbial stroke of the bookkeeper's pen, all a bank needs to do is debit the account of the payor and credit the account of the recipient payee. The first evidence of these "book" transfers dates back to 1200, where Italian court records describe Genoese bankers facilitating payments between their wealthy clients on the accounts of the bank.[83] This basic system of book transfers would eventually spread throughout western Europe, where it was also adopted by our resourceful London goldsmiths.[84]

The far more challenging problem was how to facilitate payments between customers at *different* banks. Within the goldsmiths' system, the solution initially revolved around an informal network of correspondent relationships.[85] Within this network, banks would maintain a separate set of books, which recorded the checks and other negotiable instruments drawn and cashed with each of the other banks.[86] Representatives of two banks, typically junior clerks, would then meet on a periodic basis to calculate and settle their accounts—with the net debtor

82. Figure 1 reports the total stock of deposits for all "depository institutions": a category that includes banks, savings and loan associations, credit unions, and industrial loan companies. Despite subtle differences in their chartering and regulation, all of these institutions are essentially conventional deposit-taking banks.

83. *See* Reynolds, *supra* note 53, at 168–70, 172–74 (describing the records and what they reveal about thirteenth-century Genoese banking practices).

84. *See* GEVA, *supra* note 50, at 354, 472.

85. *See generally* Stephen Quinn, *Balances and Goldsmith-Bankers: The Co-Ordination and Control of Inter-Banker Debt Clearing in Seventeenth-Century London*, *in* GOLDSMITHS, SILVERSMITHS AND BANKERS: INNOVATION AND THE TRANSFER OF SKILL, 1550 TO 1750, at 53 (David Mitchell ed., 1995) (describing this informal network of correspondent relationships).

86. *See* GEVA, *supra* note 50, at 494.

paying the net creditor in paper currency or coins.[87] Amongst this system's many inefficiencies was thus that it required these clerks to navigate London's crowded streets carrying large quantities of money.[88]

Over time, this system took on a more formal and secure institutional structure.[89] In the early 1770s, a number of large London banks rented a room at The Five Bells pub on Lombard Street, where their clerks would regularly meet to clear and settle payments.[90] By 1775, clearing and settlement were taking place on Lombard Street on a daily basis.[91] A permanent rules committee was created in 1821,[92] a new home on Lombard Street was erected in 1833,[93] and in 1841, the bilateral settlement system was replaced with a multilateral one—with each bank's net obligations calculated on the basis of the negotiable instruments drawn and cashed with *all* the other banks in the network.[94] The institutionalization of this once informal network would be completed in 1895, when member banks reorganized it as private company: the Bankers Clearing House, Limited.[95]

Echoing the emergence of the first proto-banks in the American colonies, this new institutional innovation—the *clearinghouse*—would eventually take root in the United States.[96] The first clearinghouse was established in New York in 1853.[97] Within a little over a decade, clearinghouses had also sprung up in other major commercial centers, including Boston (1856), Philadelphia (1858), Baltimore (1858), and Chicago (1865).[98] By the end of the century, hundreds of regional and local clearinghouses "dotted the American banking landscape."[99] Like the Bankers Clearing House, Limited, these early clearinghouses were almost invariably owned and operated by member banks. Once established, these clearinghouses imposed strict criteria governing the admission of new members.

---

87. *See* PHILIP W. MATTHEWS, THE BANKERS' CLEARING HOUSE: WHAT IT IS AND WHAT IT DOES 2 (1921).

88. *See id*. at 6–7.

89. *See* WILLIAM JOHN LAWSON, THE HISTORY OF BANKING; WITH A COMPREHENSIVE ACCOUNT OF THE ORIGIN, RISE, AND PROGRESS, OF THE BANKS OF ENGLAND, IRELAND, AND SCOTLAND 215 (2d ed., London, J. B. Nichols & Sons 1885) (providing a more detailed description of the transition to a more formal institutional structure); MATTHEWS, *supra* note 87, at 3–19 (same).

90. *See* MATTHEWS, *supra* note 87, at 8; *see also* GEVA, *supra* note 50, at 495 ("Around 1773, principal London bankers arranged for the rental of a room on Lombard Street where their clerks would meet to effectuate clearing and settlement. This was the official beginning of the London Clearing House.")

91. *See* MATTHEWS, *supra* note 87, at 8; GEVA, *supra* note 50, at 495.

92. *See* MATTHEWS, *supra* note 87, at 9 (noting that the "earliest record" of the rules that governed the Clearing House was from 1821).

93. *Id*. at 12.

94. *See* GEVA, *supra* note 50, at 495.

95. MATTHEWS, *supra* note 87, at 14.

96. Once again, the goldsmiths did not *invent* the clearinghouse. The basic practice of merchants meeting periodically to calculate and settle net debts dates at least as far back as medieval European champagne fairs and was likely employed in parts of Asia far earlier.

97. *See* Gary Gorton, *Private Clearinghouses and the Origins of Central Banking*, FED. RSRV. BANK PHILA. BUS. REV., Jan./Feb. 1984, at 3, 4.

98. *Id*. at 5.

99. *Id*.

Member banks were also subject to basic capital and liquidity requirements, financial reporting and audit obligations, and restrictions on the interest rates they were permitted to charge their customers.[100] Although these admission criteria and ongoing membership requirements were designed to protect the clearinghouse against member default, they also erected potentially significant barriers to direct participation in this burgeoning new financial infrastructure.

Clearinghouses offered three important advantages. The first stemmed from the use of multilateral netting. Rather than periodically calculating and settling their net debts on a bilateral basis, multilateral netting enabled *each* member bank to settle its net debts with *all other* member banks with a single institution: the clearinghouse itself.[101] To facilitate multilateral netting, the clearinghouse would first aggregate, calculate, and confirm the payments owed by or to each member bank. This process was known as "clearing." It would then pay (or collect) the net amount owed to (or by) each member bank. This process was known as "settlement." By clearing and settling payments on a multilateral basis, clearinghouses reduced the total number and size of payments, along with the exposure of the clearinghouse and each member bank to the default of its members.

The second advantage was that, having reduced the number and size of payments, clearinghouses greatly reduced the need for banks to keep large amounts of cash on hand to settle their bilateral payment obligations.[102] In theory, each bank needed only to keep enough cash on hand to settle its net obligations to the clearinghouse. In practice, clearinghouses would often issue "specie certificates" that served as cash substitutes for the expressly limited purpose of settling transactions between a clearinghouse and its member banks.[103] These certificates eliminated the transportation, security, and other costs of settling payments in cash.

Lastly, in the absence of a central bank, early American clearinghouses played an important role in crisis management.[104] In response to an incipient banking panic, clearinghouses would authorize the issuance of loan certificates designed to serve as a form of emergency currency.[105] Member banks facing correlated depositor withdrawals could apply for these certificates, pledging their loans and other assets as collateral. Banks could then use them to satisfy their outstanding obligations to other member banks, thereby freeing up cash for the purpose of honoring their commitments to depositors and other creditors.[106] Banks were

100. *See id*. at 5, 10.

101. *See id*. at 4.

102. *See id*. at 5. During the free banking era in the United States, this cash was typically made up of gold. *See id*. at 4–5.

103. *Id*. at 5. These certificates were themselves backed by gold deposited by one-member bank with another designated member bank. *See id*.

104. *See* Richard H. Timberlake, Jr., *The Central Banking Role of Clearinghouse Associations*, 16 J. MONEY, CREDIT & BANKING 1, 2 (1984); Gary Gorton, *Clearinghouses and the Origin of Central Banking in the United States*, 45 J. ECON. HIST. 277, 277 (1985).

105. Timberlake, Jr., *supra* note 104, at 3 n.2. These certificates carried an interest charge and "had a fixed maturity of, typically, one to three months." Gorton, *supra* note 104, at 280–81.

106. *See* JAMES GRAHAM CANNON, CLEARING HOUSES, *in* S. DOC. NO. 61-491, at 77 (1910). Unlike the gold-backed specie certificates issued under normal market conditions, which could only be used to

willing to accept these certificates both because they were backed by collateral and because they represented the *joint* obligations of other member banks.[107] Thus, where a clearing member defaulted and the posted collateral was insufficient to cover its outstanding obligations, surviving members were required to cover the residual losses in proportion to their capital in the clearinghouse.[108] Initially, these loan certificates were only issued in large denominations and circulated exclusively amongst member banks. By the end of the nineteenth century, however, clearinghouses had begun issuing small denomination certificates, many of which found their way into public circulation.[109] In effect, the issuance of these certificates enabled clearinghouses to expand the money supply during periods of financial instability, providing much needed liquidity to member banks and preventing widespread bank failures.[110]

This last advantage had a sobering upshot: if a bank was *not* a member of a clearinghouse, then it would be left to fend for itself in the thick of a crisis. This is exactly what happened during the Panic of 1907. The epicenter of the panic was a group of New York City trust companies: state-chartered financial institutions that competed with banks for deposits, but were not members of the New York Clearing House.[111] While a more widespread financial crisis was ultimately averted following a private bailout orchestrated by John Pierpont Morgan,[112] the Panic of 1907 would become one of the principal catalysts for the creation of a new central bank: the Federal Reserve System.[113] The creation of the Federal Reserve signaled the end of the historical role of clearinghouses in managing

satisfy financial obligations to the *clearinghouse*, these "loan certificates," which were not obligations of the clearinghouse itself, could also be used to satisfy obligations to *other member banks*. *Id.* at 75–76. For a more detailed description of the design and operation of these loan certificates, see generally *id.* at 75–136.

107. *See* Gorton, *supra* note 104, at 281.

108. *See id.* Although defaulting banks were typically not permitted to fail during a panic, they were often expelled from the clearinghouse once the panic subsided. *See id.* at 281–82. The threat of expulsion was thus viewed as a "potent enforcement mechanism." *Id.* at 279.

109. *See id.* at 282 (noting the further steps taken by clearinghouses to "issu[e] loan certificates, in small denominations, directly to the public"). During the Panic of 1893, for example, clearinghouses issued approximately $100 million in small denomination certificates. *Id.* During the Panic of 1907, this figure jumped to approximately $500 million. *Id.*

110. *See* Timberlake, Jr., *supra* note 104, at 13–14 (describing the use of loan certificates by clearinghouses); Gorton, *supra* note 104, at 280–81 (same); CANNON, *supra* note 106 (same).

111. *See* Hugh Rockoff, *It Is Always the Shadow Banks: The Regulatory Status of the Banks That Failed and Ignited America's Greatest Financial Panics*, *in* COPING WITH FINANCIAL CRISES: SOME LESSONS FROM ECONOMIC HISTORY 77, 95–96 (Hugh Rockoff & Isao Suto eds., 2018); ROBERT F. BRUNER & SEAN D. CARR, THE PANIC OF 1907: LESSONS LEARNED FROM THE MARKET'S PERFECT STORM 65–70 (2007).

112. *See* RON CHERNOW, THE HOUSE OF MORGAN: AN AMERICAN BANKING DYNASTY AND THE RISE OF MODERN FINANCE 121–38 (2001).

113. *See generally* ROGER LOWENSTEIN, AMERICA'S BANK: THE EPIC STRUGGLE TO CREATE THE FEDERAL RESERVE (2015) (providing a detailed description of the economic and political developments leading up to the creation of the Federal Reserve System).

banking panics. Yet, clearinghouses would continue to perform a number of important functions at the heart of the U.S. payment system.

Today, the architecture of the U.S. payment system revolves around three core institutions. The first is the Federal Reserve (the Fed). The Fed is best known for conducting monetary policy,[114] acting as a "lender of last resort" during financial crises,[115] and, more recently, coordinating the economic response to the COVID-19 pandemic.[116] Less well known and understood is the Fed's role at the heart of the payment system. Most importantly, the regional Federal Reserve Banks maintain a system of master accounts in the name of each participating member bank.[117] These master accounts enable banks to settle their payment obligations to other banks using their deposit balances—known as "reserves"—on the books of the Fed. The monetary liabilities of the Fed to repay these reserve balances then represent the ultimate settlement asset within the domestic banking system. As explained by long-time Federal Reserve payments expert Bruce Summers: "The central bank is the logical final settlement authority because of its unique status as an institution that does not pose credit or liquidity risks to its account holders."[118]

114. *See generally* 1 ALLAN H. MELTZER, A HISTORY OF THE FEDERAL RESERVE: 1913–1951 (2003) (detailing the history of the Federal Reserve and its role in monetary policy); 2 ALLAN H. MELTZER, A HISTORY OF THE FEDERAL RESERVE: BOOK ONE, 1951–1969 (2014) (same); 2 ALLAN H. MELTZER, A HISTORY OF THE FEDERAL RESERVE: BOOK TWO, 1970–1986 (2014) (same).

115. Dietrich Domanski, Richhild Moessner & William Nelson, *Central Banks as Lenders of Last Resort: Experiences During the 2007–10 Crisis and Lessons for the Future* 2–3, 5 (Fed. Rsrv. Bd., Fin. & Econ. Discussion Series No. 2014-110, 2014) (providing a description of the Fed's role as lender of last resort, especially during the global financial crisis).

116. *See generally* Lev Menand, *The Federal Reserve and the 2020 Economic and Financial Crisis*, 26 STAN. J.L., BUS. & FIN. 295 (2021) (providing a detailed overview of this response and analysis of its legality).

117. *See infra* Section II.B.

118. Bruce J. Summers, *The Payment System in a Market Economy*, *in* THE PAYMENT SYSTEM: DESIGN, MANAGEMENT, AND SUPERVISION 1, 5 (Bruce J. Summers ed., 1994). For a more detailed and critical assessment of the role of central banks at the apex of the payment system, see Jeffrey M. Lacker, President, Fed. Rsrv. Bank of Richmond, Speech at the Bank of England Payments Conference: Payment Economics and the Role of Central Banks 4 (May 20, 2005) (transcript available at https://www.richmondfed.org/-/media/richmondfedorg/press_room/speeches/president_jeff_lacker/2005/pdf/lacker_speech_20050520.pdf [https://perma.cc/BE4R-XG3X]).

Figure 2: Major U.S. Clearing Networks

Name	Est.	Ownership	Membership	Other Key Features
Fedwire	1918	Public	Approximately 5,500 deposit-taking institutions	• Large-value interbank clearing and settlement system • Real-time gross settlement via member accounts at the Federal Reserve • Operates 21.5 hours/day, business days only
CHIPS	1970	Private	48 member banks	• Large-value interbank clearing and settlement system • Deferred net settlement funded via transfers from Fedwire
FedACH	1981	Public	Approximately 5,500 deposit-taking institutions	• Small-value interbank clearing system • Deferred net settlement via member accounts at the Federal Reserve
EPN	1981	Private	Approximately 450 deposit-taking institutions	• Small-value interbank clearing system • Deferred net settlement via member accounts at the Federal Reserve
RTP	2017	Private	146 member banks	• Small-value interbank clearing and settlement system • Real-time gross settlement via a joint account held by members at the Federal Reserve • Operates 24 hours/day, seven days a week

Sources: Federal Reserve System, The Clearing House

The second group of core institutions consists of a small network of public and private clearinghouses. Technological advances over the past several decades have resulted in a marked increase in the volume of electronic payments between banks.[119] As these payment volumes have increased, so too have the demands on the technological and administrative infrastructure of both individual banks and the Federal Reserve System. Reflecting their historical role, modern clearing networks have stepped into this breach, employing highly automated processes to clear the vast majority of interbank payments, before routing these payments to the Federal Reserve for final settlement.[120] However, in stark contrast with the fragmented system of regional and local clearinghouses that prevailed during the nineteenth and early twentieth centuries, these modern clearing networks are now highly concentrated with five national networks dominating the U.S. market.[121] Figure 2 lists these clearing networks and describes their ownership structure, membership, and other key features.

119. *See* Codruta Boar & Róbert Szemere, *Payments Go (Even More) Digital**, BANK FOR INT'L SETTLEMENTS, https://www.bis.org/statistics/payment_stats/commentary2011.htm [https://perma.cc/99KG-RA5U] (last visited Feb. 6, 2022) ("Consumers are increasingly shifting from physical to digital instruments."). For annual payment statistics collected by the Committee on Payments and Market Infrastructure (CPMI), see *Payments and Financial Market Infrastructures*, BANK FOR INT'L SETTLEMENTS (Mar. 22, 2021, 7:41 AM) https://stats.bis.org/statx/toc/CPMI.html [https://perma.cc/8QZV-KRFC].

120. In theory, banks can also settle these payments using private settlement agents or their correspondent accounts with other banks.

121. *See supra* Figure 2.

The third group of core institutions is banks. At the beginning of 2020, the United States was home to over 4,500 licensed commercial banks, over 5,200 credit unions, and 659 thrifts.[122] Despite this extremely high level of industry fragmentation, the vast majority of payments are cleared and settled through a relatively small number of very large banks. Research conducted by the Fed, for example, found that just sixty-six banks—less than 1% of all licensed deposit-taking institutions—accounted for roughly 75% of the total volume of payments between banks.[123] Using techniques from network topology, the same researchers then mapped the interconnections between all the banks within the U.S. payment network. They found that while almost 50% of banks had fewer than four direct connections with other banks, the largest banks averaged more than 2,000 connections.[124] The result is a large, diffuse network of relatively small banks surrounding a tightly-knit core of large and highly interconnected money center banks.[125]

So, what exactly does the flow of money look like within the current U.S. payment system? Figure 3 depicts the stylized sequence of events in a typical "push" payment.[126] The process begins when the payee, who holds an account at Bank B, issues an invoice requesting payment in the amount of one hundred dollars from the payor (step 1). Upon receipt of this invoice, the payor then instructs its bank, Bank A, to transfer one hundred dollars from her account to the payee's account at Bank B (step 2). Bank A will then transmit the details of this and any other transactions to the clearinghouse which, after sorting, calculating, reconciling, and confirming payments owed by or to each bank (step 3), will communicate the net payment obligations between Banks A and B to the Federal Reserve (step 4). Final settlement then takes place on the books of the Fed, with one hundred dollars transferred from the master account of Bank A to the master account of Bank B (step 5).[127] If Bank B has not already done so, it will then credit one hundred dollars to the payee's account.

122. *See Statistics at a Glance*, FED. DEPOSIT INS. CORP. (Dec. 31, 2019), https://www.fdic.gov/bank/statistical/stats/2019dec/industry.pdf [https://perma.cc/2KJW-WA3X]; NAT'L CREDIT UNION ADMIN., QUARTERLY CREDIT UNION DATA SUMMARY: 2019 Q4, at i (2019), https://www.ncua.gov/files/publications/analysis/quarterly-data-summary-2019-Q4.pdf [https://perma.cc/8V3V-D7QB].

123. *See* KIMMO SORAMÄKI, MORTEN L. BECH, JEFFREY ARNOLD, ROBERT J. GLASS & WALTER E. BEYELER, FED. RSRV. BANK OF N.Y. STAFF REPORTS, THE TOPOLOGY OF INTERBANK PAYMENT FLOWS 2–3 (2006) (reporting figures by dollar value).

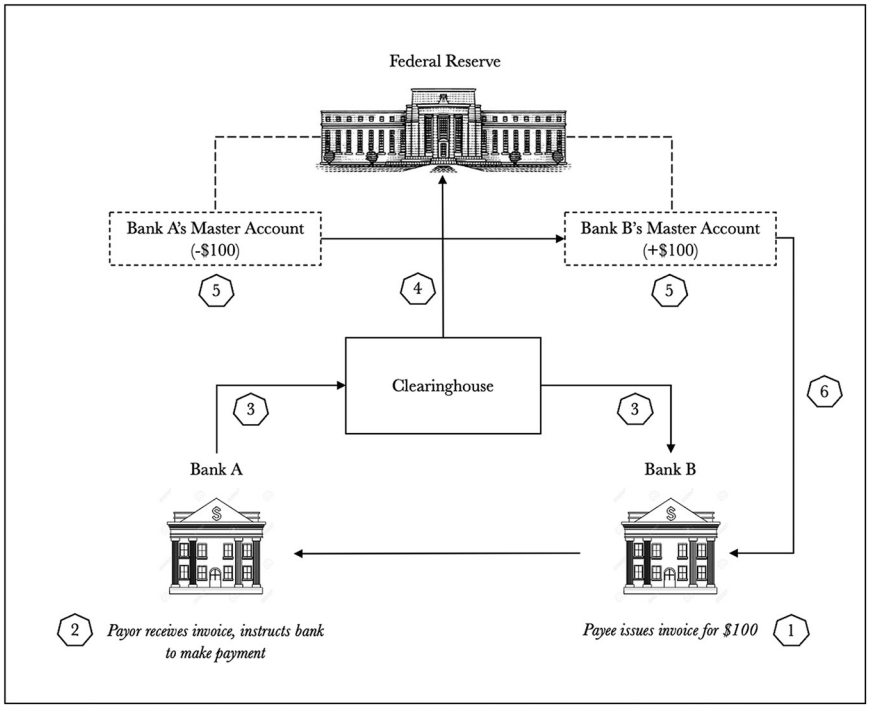
124. *See id.* at 5; *see also* Adam Copeland & Rodney Garratt, *Nonlinear Pricing and the Market for Settling Payments*, 51 J. MONEY, CREDIT & BANKING 195, 207 tbl.3 (2019) (reporting that although 50% of banks processed less than 148 payments per month via Fedwire, a major wholesale payment system described in greater detail below, the top 0.5% of banks processed over 1,483,387 payments per month).

125. *See* SORAMÄKI ET AL., *supra* note 123, at 2, 4.

126. *See infra* Figure 3. This form of payment can be contrasted with so-called "pull" payments initiated by the payee. For the purpose of Figure 3, the only difference between the two is the reversal of steps 1 and 2.

127. For the sake of simplicity, we assume here that the one hundred dollars is the only payment between accountholders at Bank A and Bank B over the relevant period.

Figure 3: The Stylized Flow of Money Within the U.S. Payment System



What this description makes clear is that banks are deeply embedded at virtually every stage of the payment process. Banks are the interface through which most people make and receive electronic payments.[128] Banks are also members—and often owners—of the clearing networks that process the vast majority of payments. And, perhaps most importantly, banks have access to the Federal Reserve master accounts that represent the fastest, most convenient, and most reliable means of final settlement. On its own, the centrality of banks within the U.S. payment system is not necessarily problematic. Yet, as we shall see, this centrality can generate significant distortions where the law *privileges* the monetary liabilities of banks, grants them *exclusive access* to our basic financial infrastructure, and provides a range of *regulatory protections* that entrench the existing system of banking, money, and payments.

128. Indeed, as described in greater detail in *infra* Parts II and III, even where banks are not the interface, they are typically the conduit through which payments are ultimately processed, cleared, and settled.

II. HOW THE LAW ENTRENCHES BUNDLING

There are several reasons why banking, money, and payments have remained so deeply intertwined for so long. The first is simple path dependence: once a set of institutional arrangements has taken root, high switching costs and other factors can make it extremely difficult to supplant them.[129] Compounding matters, both banking and payments exhibit significant economies of scale.[130] Money and payments, meanwhile, are characterized by pronounced network effects.[131] Together, these economies of scale and network effects can create significant barriers to entry, thus further entrenching existing institutional arrangements. With greater scale comes greater economic importance and, ultimately, greater political influence—and specifically the power to shape the law and regulation in ways that reinforce the comparative advantage of incumbent firms and industries,

129. DOUGLASS C. NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE 44, 94 (James Alt & Douglass North eds., 1990). The term "path dependence" is used to mean different things in different contexts. *See* Scott E. Page, Essay, *Path Dependence*, 1 Q. J. POL. SCI. 87, 87, 91 (2006). For the present purposes, the term is used to encapsulate the idea that *prior* states of the world have an influence on the current and future states via mechanisms such as high switching costs. *See* NORTH, *supra*, at 94.

130. *See* David C. Wheelock & Paul W. Wilson, *The Evolution of Scale Economies in US Banking*, 33 J. APPLIED ECONOMETRICS 16, 17 (2018). Economies of scale exist when the average unit costs of production *decrease* as the number of units produced *increases*, thereby giving larger firms an advantage over smaller firms. *See* ROBERT H. FRANK, BEN S. BERNANKE, KATE ANTONOVICS & ORI HEFFETZ, PRINCIPLES OF MACROECONOMICS 32–33 (7th ed. 2019). For recent empirical research examining economies of scale in banking, see generally Wheelock & Wilson *supra*; Joseph P. Hughes & Loretta J. Mester, *The Future of Large, Internationally Active Banks: Does Scale Define the Winners?*, *in* THE FUTURE OF LARGE, INTERNATIONALLY ACTIVE BANKS 77 (Asli Demirgüç-Kunt et al. eds., 2017); Anna Kovner, James Vickery & Lily Zhou, *Do Big Banks Have Lower Operating Costs?*, 3 J. FIN. PERSPS. 1 (2015); Elena Beccalli, Mario Anolli & Giuliana Borello, *Are European Banks Too Big? Evidence on Economies of Scale*, 58 J. BANKING & FIN. 232 (2015); David C. Wheelock & Paul W. Wilson, *Do Large Banks Have Lower Costs? New Estimates of Returns to Scale for U.S. Banks*, 44 J. MONEY, CREDIT & BANKING 171 (2012); and Guohua Feng & Apostolos Serletis, *Efficiency, Technical Change, and Returns to Scale in Large US Banks: Panel Data Evidence from an Output Distance Function Satisfying Theoretical Regularity*, 34 J. BANKING & FIN. 127 (2010). For empirical research examining economies of scale in payment systems, see generally Christine Beijnen & Wilko Bolt, *Size Matters: Economies of Scale in European Payments Processing*, 33 J. BANKING & FIN. 203 (2009); Wilko Bolt & David Humphrey, *Payment Network Scale Economies, SEPA, and Cash Replacement*, 6 REV. NETWORK ECON. 453 (2007); Robert M. Adams, Paul W. Bauer & Robin C. Sickles, *Scale Economies, Scope Economies, and Technical Change in Federal Reserve Payment Processing*, 36 J. MONEY, CREDIT & BANKING 943 (2004); and Paul W. Bauer & Gary D. Ferrier, *Scale Economies, Cost Efficiencies, and Technical Change in Federal Reserve Payments Processing*, 28 J. MONEY, CREDIT & BANKING 1004 (1996).

131. Network effects exist when the introduction of new users to a network increases the value of the network to existing users, thereby giving larger networks an advantage over smaller networks. *See* Paul Klemperer, *Network Goods (Theory)*, *in* 5 THE NEW PALGRAVE DICTIONARY OF ECONOMICS 915, 915 (Steven N. Durlauf & Lawrence E. Blume eds., 2d ed. 2008). For examples of empirical research examining network effects in monetary and payment systems, see generally Sujit Chakravorti & Roberto Roson, *Platform Competition in Two-Sided Markets: The Case of Payment Networks*, 5 REV. NETWORK ECON. 118 (2006) (examining network effects in payment networks); James J. McAndrews, *Network Issues and Payment Systems*, FED. RSRV. BANK OF PHILA. BUS. REV., Nov./Dec. 1997, at 15 (examining network effects in payment systems); and Kevin Dowd & David Greenaway, *Currency Competition, Network Externalities and Switching Costs: Towards an Alternative View of Optimum Currency Areas*, 103 ECON. J. 1180 (1993) (examining network effects in monetary systems).

thereby erecting yet further barriers to entry.[132] Viewed from this perspective, it is hardly surprising that banks have become so firmly entrenched at the heart of our systems of money and payments.

What is perhaps more surprising—or at least far less well understood—are the important roles that the law plays in entrenching the tightly bundled relationship between banking, money, and payments.[133] Broadly speaking, the law privileges and protects this bundling in three ways. First, by providing banks with a robust financial safety net, the law gives these institutions a comparative advantage in the creation of monetary liabilities, transforming otherwise risky deposits into the bedrock of our monetary system.[134] Second, by granting banks exclusive access to Federal Reserve master accounts, the law effectively bars emerging competitors from direct participation in the U.S. payment system. Third, through low profile and highly technocratic mechanisms such as brokered deposit rules, the law is continually changing in ways that make it less costly for banks to embed their products and services into the business models of their nascent competitors. This Part explores these important, complex, and multifaceted roles in greater detail.

A. THE FINANCIAL SAFETY NET

The first way that the law entrenches bundling is by extending banks a unique, public, and highly credible financial safety net. The rationale for this safety net is typically grounded in the observation that banks are susceptible to destabilizing depositor *runs*.[135] The business of banking is based on leverage, with banks obtaining the vast majority of their financing through the issuance of deposits and other short-term debt.[136] Banks then combine this short-term financing with investments in longer term, risky, and illiquid loans and other assets. Ultimately, it is the mismatch created by this combination of short-term, highly liquid debt with longer term, risky, and illiquid assets that makes banks vulnerable to runs by depositors and other short-term creditors.[137]

---

132. *See* George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 5 (1971) (analyzing the interaction between the demand for regulation by incumbent industries and its supply by political actors).

133. Of course, the notion that the law would entrench the position of incumbent banks is entirely consistent with Stigler's theory of economic regulation. *See id.*

134. *See* Awrey, *supra* note 8, at 25.

135. *See* ARMOUR ET AL., *supra* note 27, at 332–34.

136. As of September 2019, for example, over 77% of the financing obtained by banks and other depositary institutions insured by the FDIC took the form of demand deposits and other short-term debt. *See* FED. DEPOSIT INS. CORP., QUARTERLY BANK PROFILE: THIRD QUARTER 2019, at 5 (2019), https://www.fdic.gov/analysis/quarterly-banking-profile/qbp/2019sep/qbp.pdf [https://perma.cc/3YM6-EZL6].

137. The vulnerability of banks to runs is typically framed in one of two ways. The first account, articulated by economists Douglas Diamond and Philip Dybvig, views runs as a coordination problem amongst a bank's dispersed depositors. *See* Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 401, 402 (1983). For a critique of this account, see generally Kevin Dowd, *Models of Banking Instability: A Partial Review of the Literature*, 6 J. ECON. SURVS. 107 (2002). The second account views runs as a product of the realization by depositors and other short-term creditors that the claims they previously believed to represent reliable stores of nominal value—or "moneyness"—are in fact sensitive to the revelation of new information about a bank's

In a nutshell, a bank run takes place when a critical mass of a bank's depositors demand their money back within a relatively short span of time. Where the vast majority of a bank's assets are invested in longer term and illiquid loans, these correlated demands can put significant pressure on a bank's balance sheet, forcing it to draw down its liquid reserves and, potentially, sell its other less liquid assets rapidly at "fire sale" prices.[138] This, in turn, can generate pernicious negative feedback effects, with depositor withdrawals eroding the bank's liquidity and solvency, and the erosion of its liquidity and solvency incentivizing yet more depositors to run.[139] Banks runs pose two principal risks. The first—*microprudential*—risk stems from the potential impact of idiosyncratic bank runs on a bank's depositors, creditors, employees, and other stakeholders.[140] The second—*macroprudential*—risk stems from the prospect that bank runs might metastasize into more widespread banking panics, leading to a reduction in bank lending, a contraction in the money supply, and broader financial instability.[141]

The financial safety net seeks to reduce the probability and impact of bank runs in three principal ways. First, the Federal Reserve Act authorizes the Fed to provide financial assistance to banks through both its discount window and open market operations.[142] These "lender of last resort" facilities enable a bank facing an incipient run to transfer its longer term, less liquid loans and other assets to the Fed in exchange for highly liquid funds—typically in the form of reserve balances credited to the bank's master account.[143] These reserve balances can then be used by the bank to pay its ongoing liabilities to depositors and other creditors. In effect, these lender of last resort facilities serve to relax the bank's liquidity constraint, avoiding the fire sale of illiquid loans or other assets, and enabling the bank to remain open for business under conditions where almost any other type of enterprise would be forced into bankruptcy.

---

creditworthiness, the quality of its underlying assets, or other variables. BENGT HOLMSTROM, BANK FOR INT'L SETTLEMENTS, UNDERSTANDING THE ROLE OF DEBT IN THE FINANCIAL SYSTEM 14–16 (2015), https://www.bis.org/publ/work479.pdf [https://perma.cc/5LXP-YB3P]; *see* Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425, 447 (2012) (noting the "[p]ublic shocks" that caused expected future spread volatility to increase). Morgan Ricks advances a third model of bank runs. Like Diamond and Dybvig, Ricks's model views bank runs as reflecting a coordination problem amongst depositors; however, unlike Diamond and Dybvig, Ricks places the *monetary* role of banks front and center in his framework. *See* RICKS, *supra* note 34, at 63–70.

138. For a review of the literature on this dynamic, see Andrei Shleifer & Robert Vishny, *Fire Sales in Finance and Macroeconomics*, 25 J. ECON. PERSPS. 29, 35–43 (2011).

139. *See id*. at 35–36.

140. *See id*. at 36–37.

141. *See id*. at 41–43.

142. *See* Federal Reserve Act § 10B, 12 U.S.C. § 347b (authorizing the Fed's regional reserve banks to extend discount window loans to member banks); 12 U.S.C. §§ 353–359 (authorizing the Federal Reserve Board to purchase or sell gold and U.S. treasury securities on the open market, along with any cable transfers, bankers' acceptances, or bills of exchange eligible for discounting under § 10B).

143. In the case of discount window lending, this transfer is facilitated by way of a *loan* collateralized against the bank's assets. In the case of open market operations, this transfer is facilitated by way of the *sale* of these assets to the Federal Reserve. Although originally created for the purpose of providing banks with assistance during periods of financial distress, today open market operations are more commonly viewed as a monetary policy tool.

The second way that the financial safety net seeks to address the problem of bank runs is through an expansive system of deposit insurance. The first federal deposit insurance scheme was introduced under the Banking Act of 1933.[144] The Banking Act created the FDIC and established a guarantee scheme that provided the depositors of failed banks with compensation of up to $2,500.[145] Today, the FDIC insures 100% of covered deposits up to a maximum of $250,000 per depositor per bank.[146] Importantly, the FDIC commits to compensate depositors of failed banks within an extremely short time frame—typically in as little as one business day.[147] The FDIC thus effectively steps into the shoes of a failed bank, honoring its commitment to return depositors' money on demand. In order to make this commitment credible, this compensation is provided by a dedicated deposit insurance fund that, in the normal course, is financed by ex ante contributions from banks and other insured depository institutions.[148] In theory, the existence of the FDIC's deposit insurance scheme thus reduces the incentives of depositors to engage in destabilizing runs.[149] In practice, the effect is to insulate covered depositors from the risk of bank failure.

The same New Deal reforms that established the FDIC and introduced federal deposit insurance also created the third core pillar of the financial safety net: a special bankruptcy or "resolution" regime for failing banks.[150] Between 1865 and 1933, the standard bankruptcy practice was to treat the depositors of a failed bank in the same fashion as its other unsecured creditors.[151] Depositors would thus have to wait until the conclusion of any bankruptcy process before getting their money back.[152] The FDIC has estimated that this process typically took

144. Pub. L. No. 73-66, § 8, 48 Stat. 162, 168 (creating the FDIC). Before 1933, several states had experimented with forms of deposit insurance. For a more detailed history of these state-level deposit guarantee schemes, see generally FED. DEPOSIT INS. CORP., A BRIEF HISTORY OF DEPOSIT INSURANCE IN THE UNITED STATES (1998), https://www.fdic.gov/bank/historical/brief/brhist.pdf [https://perma.cc/PLE2-VGYW]. This scheme supplanted the then-existing system of double liability for shareholders of national banks. *See* Jonathan R. Macey & Geoffrey P. Miller, *Double Liability of Bank Shareholders: History and Implications*, 27 WAKE FOREST L. REV. 31, 38–39 (1992).

145. *See* Banking Act of 1933 § 8.

146. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 335 (a), 124 Stat. 1376, 1540 (2010) (making permanent the increase of FDIC insured coverage to $250,000).

147. *See 5 Common Misconceptions About FDIC Insurance . . . and the Real Facts*, FED. DEPOSIT INS. CORP.: FDIC CONSUMER NEWS (Dec. 22, 2014), https://www.fdic.gov/consumers/consumer/news/cnfall14/misconceptions.html [https://perma.cc/WGN3-4JBV].

148. *See* Federal Deposit Insurance Act §§ 7, 11(a)(4), 12 U.S.C. §§ 1817, 1821.

149. *See* Diamond & Dybvig, *supra* note 137, at 413 (describing how deposit insurance eliminates coordination problems amongst depositors by rendering them indifferent to the effects of bank failure).

150. *See* Banking Act of 1933 § 8 (describing the role of the FDIC's in the event that "any member or nonmember bank shall be declared insolvent").

151. *See* FED. DEPOSIT INS. CORP., RESOLUTIONS HANDBOOK 24–25 (2014), https://www.fdic.gov/bank/historical/reshandbook/resolutions_handbook.pdf [https://perma.cc/ET54-9EXW]. Indeed, in many respects, bank receivership was even less favorable to depositors and other unsecured creditors than normal corporate bankruptcy processes. *See* STEPHEN J. LUBBEN, THE LAW OF FAILURE: A TOUR THROUGH THE WILDS OF AMERICAN BUSINESS INSOLVENCY LAW 103–04 (2018).

152. *See* FED. DEPOSIT INS. CORP., *supra* note 151, at 24 ("[Banks] received funds from the liquidation of the bank's assets after those assets were liquidated.")

somewhere in the neighborhood of six years.[153] Even then, where the eventual liquidation of a failed bank did not generate enough cash to fully repay its creditors, depositors would often receive only pennies on the dollar.[154] Understandably, this prospect only served to reinforce the incentives of depositors to run at the first sign of trouble.

The Banking Act of 1933 circumvented this standard bankruptcy practice by mandating the appointment of the FDIC as the receiver for all national banks. Today, the FDIC is also the receiver for the state-chartered banks, thrifts, and other depository institutions for which it provides deposit insurance.[155] In this capacity, the FDIC has a duty to maximize the value of the assets of a failed bank, simultaneously minimizing any compensation that must be paid by the deposit insurance fund.[156] The FDIC has been given several tools to pursue these objectives, including the ability to write down a bank's liabilities, convert its outstanding debt into equity, repudiate its contracts, and transfer its assets to either a private sector purchaser or public sector bridge bank.[157] Armed with these tools, the expectation is that the FDIC will trigger the resolution process after the close of business on Friday afternoon, with the newly restructured or acquired bank then able to open its doors for business as usual on Monday morning. Accordingly, while the resolution process can unfold in a variety of ways, the result in all cases is once again to insulate depositors from the adverse consequences of bank failure.

This financial safety net is far from perfect. Perhaps most importantly, it is the source of moral hazard problems that require an enormously complex and controversial system of bank entry and activity restrictions, capital and liquidity regulation, and intensive prudential supervision.[158] Yet what is most important from our perspective is the impact of this safety net on the relationship between banks and money. Crucially, each pillar of the safety net enhances the credibility of a bank's core commitment to its depositors: enabling them to deposit, transfer, and

153. *Id.*

154. *Id.* ("Even when depositors did ultimately receive their funds, the amounts were significantly less than they had originally deposited into the banks."). Between 1921 and 1930, the United States experienced over 1,200 bank failures. Amongst those failures, depositors of state-chartered banks were on average able to recover 62% of their deposits. For national banks, the equivalent figure was 58%. *Id.* at 25.

155. *About FDIC: What We Do*, FED. DEPOSIT INS. CORP. (May 15, 2020), https://www.fdic.gov/about/what-we-do/index.html [https://perma.cc/W6YG-GPC9].

156. *See* Federal Deposit Insurance Act § 2, 12 U.S.C. § 1821(d)(13)(E) (requiring the FDIC to maximize the net present value, or minimize any loss, from the sale of a failed bank's assets); 12 C.F.R. § 360.1 (2021) (requiring the FDIC to pursue the resolution option that would impose the lowest costs on the deposit insurance fund).

157. *See* 12 U.S.C. §§ 1818, 1821(c) (describing in full the FDIC's powers as receiver). In practice, most failed banks are sold via a process known as "purchase and assumption." *See* BARR ET AL., *supra* note 72, at 966–68 (describing the purchase and assumption process). For a more detailed examination of the development and evolution of special resolution regimes, see generally John Armour, *Making Bank Resolution Credible*, *in* THE OXFORD HANDBOOK OF FINANCIAL REGULATION 453 (Niamh Moloney et al. eds., 1st ed. 2015).

158. These regulatory frameworks are discussed in greater detail in *infra* Section III.B.

withdraw their money on demand. The Fed's lender of last resort facilities prevent runs from triggering the failure of fundamentally solvent banks, thereby ensuring that they can continue to honor their obligations to both insured and uninsured depositors under conditions where most firms would be forced to close their doors. The FDIC's deposit insurance scheme, meanwhile, ensures that covered depositors are promptly and, in the vast majority of cases, fully compensated when a bank crosses over into insolvency. Lastly, the FDIC's special resolution regime relaxes the harsh strictures of general corporate bankruptcy law: ensuring that depositors of a failed bank are not deprived of access to their money during what might otherwise be a lengthy and uncertain legal process.

Ultimately, this financial safety net is what transforms a bank's otherwise risky deposit liabilities into so-called safe assets[159] and why the public almost universally trusts them as a source of "good money."[160] Even more importantly, this safety net is only available to banks, savings associations, and a limited range of other "insured depository institutions."[161] Accordingly, while virtually anyone can promise that you will always be able to deposit, transfer, and withdraw your money on demand, only banks can back this promise up with an explicit and highly credible public safety net. By design, this gives banks an enormous comparative advantage over other private firms in the issuance of monetary liabilities. It is thus little wonder that banks have become so firmly entrenched as the dominant source of money in the modern economy.

B. RESTRICTIONS ON INFRASTRUCTURE ACCESS

In the aftermath of the global financial crisis, the financial safety net has come under considerable and largely justifiable scrutiny.[162] What has received far less attention is how the law grants banks exclusive access to the key technological

159. *See* Anna Gelpern & Erik F. Gerding, *Inside Safe Assets*, 33 YALE J. ON REG. 363, 387–404 (2016) (describing the role of various components of the financial safety net in manufacturing safe assets); Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1150–65 (2017) (same). *See generally* RICKS, *supra* note 34 (same).

160. Awrey, *supra* note 8, at 5–6 (citing the role of regulatory frameworks in increasing the credibility of institution's monetary commitments).

161. Federal Deposit Insurance Act § 18, 12 U.S.C. § 1828. Technically, the Fed is only authorized to extend discount window loans to banks that are members of the Federal Reserve System. *See* Federal Reserve Act § 10B(a), 12 U.S.C. § 347b(a). However, it is authorized to enter into open market transactions with a broader range of counterparties that includes "domestic or foreign banks, firms, corporations, or individuals." *Id.* § 14(1), 12 U.S.C. § 353. The FDIC's deposit insurance scheme and special resolution regime, meanwhile, are only available to banks, savings associations, and other insured depository institutions. *See* 12 U.S.C. §§ 1813(c)(2), 1815, 1821(d). The only elements of this financial safety net that potentially extend beyond the conventional banking system are the emergency lending powers under the Federal Reserve Act, which authorizes the Fed to extend discount window loans, subject to certain conditions and restrictions, to firms other than banks in "unusual and exigent circumstances." 12 U.S.C. § 343(3)(A).

162. *See, e.g.*, Jaime Caruana, Gen. Manager, Bank for Int'l Settlements, Keynote Address at the FSI-IADI Conference on "Bank Resolution, Crisis Management and Deposit Insurance Issues": Post-Crisis Financial Safety Net Framework: Lessons, Responses and Remaining Challenges 2–3 (Dec. 6, 2016) (transcript available at https://www.bis.org/speeches/sp170105.pdf [https://perma.cc/3WHK-PEGQ]).

and operational infrastructure that connects and drives the U.S. payment system.[163] Pursuant to Section 13(1) of the Federal Reserve Act, the Fed's regional reserve banks are only permitted to accept deposits from "member banks," "other depository institutions," or, for a limited range of purposes, any "nonmember bank or trust company."[164] As reflected in the Fed's operating rules,[165] jurisprudence,[166] proposed guidelines,[167] and academic commentary,[168] the practical effect of Section 13(1) is to restrict eligibility to open a Federal Reserve master account to commercial banks, mutual and federal savings banks, savings and loan associations, and credit unions.[169] Whereas banks are permitted to settle their obligations to one another on the accounts of the Federal Reserve, the rest of us are forced to transact through banks as the gatekeepers of the payment system.

In reality, even eligible banks have sometimes encountered significant obstacles when applying for a Federal Reserve master account. A recent case in point is the application of TNB USA Inc. for a master account with the Federal Reserve Bank of New York (FRBNY). TNB—which stands for The Narrow Bank—is a state-chartered bank established with the objective of offering large institutional investors a safe place to park their money at attractive interest rates.[170] Rather than using deposits to make loans or other investments, TNB's plan was to hold the vast majority of its assets in the form of reserve balances in its Federal Reserve master account.[171] When TNB received its temporary charter in August 2017, these reserve balances were paying an annualized interest rate of 1.25%.[172] This interest rate was far higher than the rate that conventional banks

163. Two notable exceptions are Morgan Ricks and Colleen Baker, both of whom have called out the privileged access that banks enjoy. Morgan Ricks, *Money as Infrastructure*, 2018 COLUM. BUS. L. REV. 757, 774 ("While anyone can hold paper currency, reserve balance may be held only by banks . . . ."); Colleen Baker, *Master Accounts at the Fed: An Arcane but Highly Important Issue*, BUS. L. PROF BLOG (Mar. 29, 2020), https://lawprofessors.typepad.com/business_law/2020/03/master-accounts-at-the-fed-an-arcane-but-highly-important-issue.html [https://perma.cc/3V75-8KQ6].

164. 12 U.S.C. § 342.

165. *See* FED. RSRV., FEDERAL RESERVE BANKS OPERATING CIRCULAR 1: ACCOUNT RELATIONSHIPS 2–3 (2013), https://www.frbservices.org/assets/resources/rules-regulations/020113-operating-circular-1.pdf [https://perma.cc/24E9-TYK5].

166. *See, e.g.*, Fourth Corner Credit Union v. Fed. Rsrv. Bank of Kan. City, 861 F.3d 1052, 1053 (10th Cir. 2017) (per curiam) ("A master account is, put simply, a bank account *for banks*." (emphasis added)).

167. *See* Proposed Guidelines for Evaluating Account and Services Requests, 86 Fed. Reg. 25865 (May 11, 2021).

168. *See* Ricks, *supra* note 163.

169. In addition to these deposit-taking institutions, the Fed is authorized to maintain accounts for the U.S. Treasury, 12 U.S.C. § 391; foreign governments and central banks, 12 U.S.C. § 358; designated financial market utilities, 12 U.S.C. § 5465(a); and specific government-sponsored entities, 12 U.S.C. §§ 1435, 1452(d), 1723a(g).

170. *See About Us*, TNB, https://www.tnbusa.com/about/ [https://perma.cc/RK9G-F68T] (last visited Feb. 7, 2022).

171. *See* Complaint at 1, TNB USA Inc., v. Fed. Rsrv. Bank of N.Y., No. 1:18-cv-07978-ALC (S.D. N.Y. Mar. 25, 2020).

172. *See Interest Rate on Required Reserves (IORR)*, FED. RSRV. BANK OF ST. LOUIS: FRED (July 28, 2021), https://fred.stlouisfed.org/series/IORR [https://perma.cc/2FCW-3YYS?type=image]; *Interest*

were then paying their depositors, theoretically making TNB a comparatively profitable place for depositors to park their money.

It was at this point that the FRBNY threw a wrench into TNB's plan. TNB's application for opening a master account consisted of a one-page standard form agreement that stated that the application process "may take 5-7 business days."[173] Despite this statement, TNB was forced to wait over six months before eventually being informed that the Fed had "policy concerns" regarding its application.[174] In August 2018, TNB filed a complaint in the Southern District of New York seeking declaratory judgment and injunctive relief requiring the FRBNY to open an account in TNB's name.[175] This complaint was subsequently dismissed on standing and ripeness grounds in March 2020,[176] and, as of writing, TNB is still waiting for a decision on its application.[177] The FRBNY's message appears to be that, not only must a financial institution be a bank in order to open a master account, but also the bank's business model must not explicitly seek to capitalize on the unique advantages that come with access to this vital financial infrastructure. The point here is not that TNB *should* get a master account. Indeed, insofar as the application can be viewed simply as an attempt to arbitrage the difference between the interest rates offered by the Fed and commercial banks, there is good reason for the Fed to exercise caution.[178] Rather, the point is that access to these accounts is currently restricted to banks and that, even within this relatively narrow universe of eligible institutions, the Fed has considerable discretion to impose further access restrictions.

The Federal Reserve Act's eligibility restrictions become even more critical once we expand our frame to encompass the central operational role of master accounts within the U.S. payment system. As described in Part I, the operational frameworks of each of the five major U.S. clearing networks contemplate final settlement of net payments through Federal Reserve master accounts.[179] In the case of Fedwire, CHIPS, FedACH, and EPN, these net payments settle on the master accounts of individual member banks.[180] In the case of RTP, net payments

Rate on Excess Reserves (IOER), FED RSRV. BANK OF ST. LOUIS: FRED (July 28, 2021), https://fred.stlouisfed.org/series/IOER [https://perma.cc/A7T7-Z5E3].

173. TNB USA Inc. v. Fed. Rsrv. Bank of N.Y., No. 1:18-cv-7978 (ALC), 2020 WL 1445806, at *2 (S.D.N.Y. Mar. 25, 2020).

174. *Id.* at *3.

175. Complaint, *supra* note 171, at 24.

176. *See TNB USA Inc.*, 2020 WL 1445806, at *10.

177. *See* Letter from James McAndrews, Chairman & Chief Executive Officer, TNB USA Inc., to Ann E. Misback, Sec'y, Bd. of Governors of the Fed. Rsrv. Sys. (June 11, 2021), https://www.federalreserve.gov/SECRS/2021/July/20210708/OP-1747/OP-1747_061121_138143_448935872132_1.pdf [https://perma.cc/S2LD-RQ6M].

178. The Fed has taken a similarly cautious approach toward granting master accounts to banks servicing the marijuana industry. *See, e.g.*, Fourth Corner Credit Union v. Fed. Rsrv. Bank of Kan. City, 861 F.3d 1052, 1053 (10th Cir. 2017) (per curiam).

179. *See supra* Figure 2.

180. *See, e.g.*, CLEARING HOUSE, CHIPS RULES AND ADMINISTRATIVE PROCEDURES EFFECTIVE April 1, 2020, at 16–23 (2020), https://www.theclearinghouse.org/-/media/new/tch/documents/payment-systems/chips_rules_and_administrative_procedures_2020_effective_04-01-2020.pdf [https://perma.cc/

settle within a single master account held jointly for the benefit of the network's members.[181] Given this important operational role, a Federal Reserve master account is understandably a threshold condition for membership in these clearing networks. The Rules and Administrative Procedures governing CHIPS, for example, restrict direct participation to depository institutions that "have an account on the books of a Federal Reserve Bank."[182] The Participation Rules for RTP similarly restrict direct participation to depository institutions that have "an account with a Federal Reserve Bank."[183] The practical effect of the Federal Reserve Act's strict eligibility requirements for master accounts is therefore to bar all private financial institutions, businesses, and individuals other than banks from direct access to the U.S. payment system.

In sum, the Federal Reserve Act dictates that only banks and other similar depository institutions have access to the Federal Reserve master accounts that represent the fastest, most convenient, and most reliable means of final settlement in our current payment system. And because the current payment system is built around these master accounts, this effectively excludes financial institutions other than banks from direct access to the major clearing networks. Importantly, this leaves financial institutions that aspire to compete with banks in the increasingly lucrative realm of money and payments with a stark and unpalatable choice. First, they can themselves become conventional deposit-taking banks, incurring the time, expense, and ongoing regulatory compliance burdens that this entails. This option is particularly costly for financial institutions—such as TNB—that have no intention of combining deposit-taking with the extension of loans and other forms of credit to the public. Second, they can enter into agreements with banks—their primary competitors—that give them indirect access to the basic clearing and settlement architecture. Either way, the consequence is to further entrench the role and importance of banks at the heart of the current payment system. As explored in greater detail in Part III, this has significant implications for the competitive structure of the U.S. payments industry.

3E4S-G92H]. Typically, the clearing network itself will also have a (pre-funded) master account for the purpose of making (receiving) payments to (from) member banks. *See, e.g.*, *id.* at 11–12.

181. *See* CLEARING HOUSE, RTP SYSTEM OPERATING RULES 7 (2020) (defining Prefunded Balance Account), https://www.theclearinghouse.org/payment-systems/rtp/-/media/86DC139B68A143AD9CC2FE367E6D2429.ashx [https://perma.cc/T3CV-UKY7].

182. CLEARING HOUSE, *supra* note 180, at 29. In addition, CHIPS Rules also contemplate direct access for foreign banks and Edge Act or Agreement corporations with an account at a Federal Reserve Bank. *See id.* While CHIPS Rules also contemplate *indirect* participation, indirect participants must still be depository institutions. *See id.*

183. CLEARING HOUSE, RTP PARTICIPATION RULES 3 (2019), https://www.theclearinghouse.org/payment-systems/rtp/-/media/3E5DAF36BB29436BAAC61C08D1148B6F.ashx [https://perma.cc/284S-C6L6]. Rule I.B. further specifies the definition of a depository institution. *See id.* ("For purposes of [Rule I.A.3], the term 'depository institution' means any 1. entity that is an 'insured depository institution' as defined in the Federal Deposit Insurance Act, 12 U.S.C. § 1813(c)(2); 2. uninsured branch or agency of a foreign bank that is included in the term 'insured depository institution' under 12 U.S.C. § 1813(c) for purposes of 12 U.S.C. § 1818; and 3. 'insured credit union' as defined in the Federal Credit Union Act, 12 U.S.C. § 1752(7).").

C. BROKERED DEPOSIT RULES

The financial safety net and restrictions on access to basic financial infrastructure are not the only ways that the law privileges and protects banks. Indeed, bank regulation is constantly changing in response to new technological, financial, and other developments that threaten the dominant position of banks at the apex of our intertwined systems of money and payments. In most cases, these responses are not implemented through acts of Congress or major regulatory initiatives. They attract few newspaper headlines, scant academic commentary, and little or no public attention. Instead, these responses frequently fly under the radar as part of the day-to-day process of revising and updating low profile and highly technical agency rules and procedures. Recent amendments to the FDIC's rules governing so-called brokered deposits offer a timely and illuminating example.

Historically, brokered deposits consisted of large denomination deposits that were negotiated between banks and third-party deposit brokers.[184] These deposit brokers would pool money from individual investors and then invest it in either an interest-bearing account or certificate of deposit with a commercial bank. For investors, these brokered deposits typically offered higher interest rates than those available on retail savings products. For banks, brokered deposits were viewed as a large and relatively cheap source of liquid financing.[185] Yet, for bank supervisors such as the FDIC, brokered deposits were a source of two potentially significant risks. The first was that, due to the size of these deposits and the power wielded by deposit brokers, brokered deposits exposed banks to large, correlated, and potentially destabilizing withdrawals.[186] The second was that competition for brokered deposits would compel banks to offer unsustainably high interest rates, reducing bank profitability and driving them to make more risky loans and other investments.[187] In the eyes of many observers, this second risk played an important role in setting the stage for the Savings and Loan Crisis of the late 1980s and early 1990s.[188]

184. *See* Unsafe and Unsound Banking Practices: Brokered Deposits and Interest Rate Restrictions, 84 Fed. Reg. 2366 (proposed Feb. 6, 2019) (to be codified at 12 C.F.R. § 337).

185. While banks would typically pay higher interest rates on brokered deposits, they often considered them relatively "cheap" sources of financing because of the associated savings on marketing, administration, and other expenses.

186. *See* Unsafe and Unsound Banking Practices: Brokered Deposits and Interest Rate Restrictions, 84 Fed. Reg. at 2366.

187. *See id.*

188. *See, e.g.*, Robert J. Laughlin, Note, *Causes of the Savings and Loan Debacle*, 59 FORDHAM L. REV. S301, S315–18 (1991) (describing brokered deposits as sparking interest rate competition among thrifts). Ultimately, the empirical case for the claim that brokered deposits played a significant role in the crisis is mixed. Specifically, while brokered deposits no doubt contributed to the rapid growth of many savings and loan associations, it is not clear that savings and loan associations that relied more heavily on brokered deposits were more likely to fail during the crisis. For a summary of the empirical literature, see generally David H. Pyle, *The U.S. Savings and Loan Crisis*, *in* 9 HANDBOOKS IN OPERATIONS RESEARCH & MANAGEMENT SCIENCE: FINANCE 1105 (Robert A. Jarrow et al. eds., 1995).

Today, brokered deposits represent approximately $1.1 trillion—or 8.5%—of the nearly $13 trillion deposited with U.S. banks.[189] Pursuant to Section 29 of the Federal Deposit Insurance Act, the ability of a bank to accept brokered deposits hinges on the FDIC's assessment of its regulatory capital position.[190] Specifically, whereas "well capitalized" banks are not subject to any restrictions on their ability to accept brokered deposits, "adequately capitalized" banks must first apply to the FDIC for approval on the grounds that accepting these deposits would not constitute an "unsafe or unsound practice."[191] At the other end of the spectrum, "undercapitalized" banks are completely prohibited from accepting brokered deposits.[192] While there is a strong theoretical case for this differential regulatory treatment, these restrictions arguably have little practical impact given that, as recently as 2018, the FDIC considered well over 99% of insured depository institutions to be well capitalized.[193]

From the perspective of banks, the far more costly feature of the FDIC's rules is that high concentrations of brokered deposits can attract higher deposit insurance premiums. In fact, depending on the FDIC's assessment of a bank's risk profile, brokered deposits can account for up to 25% of a "large and highly complex" bank's total premiums—and up to over 45% for "newly insured small institutions."[194] Brokered deposits are also treated as a less stable source of funding for the purposes of calculating a bank's liquidity coverage ratio. The liquidity coverage ratio is a key tool for ensuring that banks hold sufficient cash and other high-quality, liquid assets in order to meet their obligations to depositors and other short-term creditors.[195] In effect, banks that rely more heavily on brokered deposits are required both to make larger contributions to the FDIC deposit insurance fund and to hold more liquid assets in reserve—assets that would otherwise be available for the purposes of making loans and other more profitable investments.

This makes the definition of a brokered deposit extremely important. For the purposes of Section 29, this hinges on the definition of a "deposit broker," a category that includes "any person engaged in the business of placing deposits, or facilitating the placement of deposits, of third parties with insured depository institutions or the business of placing deposits with insured depository institutions

189. Unsafe and Unsound Banking Practices: Brokered Deposits Restrictions, 85 Fed. Reg. 7453, 7464 (proposed Feb. 10, 2020) (to be codified at 12 C.F.R. §§ 303, 307).

190. *See* Federal Deposit Insurance Act § 29, 12 U.S.C. § 1831f(c). Section 29 of the Federal Deposit Insurance Act is then supplemented by a more detailed set of FDIC rules and procedures. *See* 12 C.F.R. § 337.6 (2021).

191. Federal Deposit Insurance Act § 29(a), (c); 12 C.F.R. § 337.6(a)(3)(i), (b)(1)–(3) (2021).

192. 12 C.F.R. § 337.6(a)(3) & n.11 (emphasis omitted).

193. *See* Robert Clark, *10 US Banks Are Undercapitalized*, S&P GLOB.: MKT. INTEL. (Mar. 18, 2019), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/10-us-banks-are-undercapitalized-50514909 [https://perma.cc/JR9G-9826].

194. *See FDIC Assessment Rates*, FED. DEPOSIT INS. CORP. (July 14, 2017), https://www.fdic.gov/deposit/insurance/assessments/proposed.html [https://perma.cc/Y5JA-K3ET].

195. *See* 12 C.F.R. § 50 (2021) (describing at various points how the risks associated with brokered deposits are factored into the calculation of the liquidity coverage ratio); 12 C.F.R. § 249 (2021) (same); 12 C.F.R. § 329 (2021) (same).

for the purpose of selling interests in those deposits to third parties."[196] This definition is then subject to a number of exemptions, including one for agents or nominees "whose primary purpose is not the placement of funds with depository institutions."[197] Despite this "primary purpose" exemption, the definition of a deposit broker—together with the FDIC's interpretation of this key term—has been roundly criticized by banks for potentially capturing a far broader range of transactions and relationships than would have historically been viewed as brokered deposits.[198] The result is that a bank's advertising and marketing partners, technology platforms, and fintech firms all risk being classified as deposit brokers for the purposes of the FDIC's rules.[199]

One emerging line of business where the broad scope of FDIC's brokered deposit rules has reportedly posed a particular challenge are the burgeoning correspondent relationships between banks and SPPs such as PayPal, Venmo, Circle, and Wise. These platforms rely on banks to perform a variety of important functions. First, given the legal restrictions on their ability to directly access both Federal Reserve master accounts and the major clearing networks, these platforms are often forced to rely on banks to send and receive electronic payments on behalf of their customers.[200] In many cases, these payments also settle in accounts that the customers of these platforms hold with conventional deposit-taking banks. Second, many SPPs pool customer funds and hold them in bank accounts, certificates of deposits, or other money market instruments. PayPal, for example, currently holds over $35 billion in customer funds, the vast majority of which are invested with banks.[201] In theory, this last function, in particular, risks being interpreted by the FDIC as these platforms "placing" deposits with banks, thereby subjecting these banks to the enhanced deposit insurance premiums and liquidity coverage ratio requirements associated with brokered deposits.

In December 2018, the FDIC published an advance notice of proposed rulemaking targeting the relationships between SPPs and banks.[202] Specifically, the

196. 12 U.S.C. § 1831f(g)(1)(A); *see* 12 C.F.R. § 337.6(a)(5)(i)(A) (2021). Section 337.6(a)(2) defines a brokered deposit as "any deposit that is obtained, directly or indirectly, from or through the mediation or assistance of a deposit broker." 12 C.F.R. § 337.6(a)(2).

197. 12 U.S.C. § 1831f(g)(2)(I).

198. *See* Unsafe and Unsound Banking Practices: Brokered Deposits Restrictions, 85 Fed. Reg. 7453, 7454–56 (proposed Feb. 10, 2020) (to be codified at 12 C.F.R. §§ 303, 307) (describing the comments that the FDIC received in response to its advanced notice of proposed rulemaking in 2018).

199. *Id.* at 7455.

200. The only exception being where (1) both the payor and payee have proprietary accounts with the platform and (2) the payor elects to use any positive balance in their proprietary account to fund the payment to the payee. In this (limited) case, the payment would be processed by the platform and settled on the platform's proprietary accounts, thus completely circumventing the conventional payment system.

201. *See* PAYPAL, 2021 NOTICE OF ANNUAL MEETING OF STOCKHOLDERS AND PROXY STATEMENT: 2020 ANNUAL REPORT pt. 4, at 51 (2021), https://s1.q4cdn.com/633035571/files/doc_financials/2021/ar/PYPL002_AR_2020_Bookmarked.pdf [https://perma.cc/D994-AL3D] (disclosing "[f]unds payable and amounts due to customers").

202. *See* Unsafe and Unsound Banking Practices: Brokered Deposits and Interest Rate Restrictions, 84 Fed. Reg. 2366, 2366 (proposed Feb. 6, 2019) (to be codified at 12 C.F.R. § 337).

FDIC sought public input on possible changes to its brokered deposit rules in light of the "significant changes in technology, business models, and products" since these rules were first introduced.[203] This was followed in February 2020 by a notice of proposed rulemaking[204] and, in December 2020, an announcement that the FDIC had approved new brokered deposit rules.[205] At the heart of these new rules is a technical change to the definition of a deposit broker. Specifically, the FDIC has amended the primary purpose exemption to clarify that agents or nominees that place customer funds into "transaction accounts" held "for the purpose of enabling transactions" will not be deemed to be acting as a deposit broker.[206] An agent or nominee will satisfy this new test where it can demonstrate compliance with two requirements. First, the agent or nominee must place 100% of its customer funds into transaction accounts at depository institutions.[207] Second, the banks in which these funds are deposited must pay no fees, interest, or other remuneration to the agent or nominee that has deposited these funds.[208] Should a bank want to pay depositors nominal interest or other remuneration, the FDIC would more closely scrutinize the case to determine whether the depositor was still eligible to make deposits under the exemption.[209] While the FDIC does not mention them by name, the rule is plainly designed to exempt large denomination deposits by PayPal and other SPPs from the application of its brokered deposit rules.

On the surface, the FDIC's new brokered deposit rules might seem like a reasonable and straightforward change designed to update an aging definition in response to new industry developments. Indeed, in many respects, that is exactly what they are. Yet, this seemingly innocuous rule change will also have a number of potentially significant consequences—all of which further entrench banks as the gatekeepers of the U.S. payment system. As a preliminary matter, it is not clear why large denomination deposits by PayPal or other SPPs represent a more stable source of financing than more conventional brokered deposits. Even if we do not think they are technically "deposit brokers," excluding the deposits of these platforms from the FDIC's brokered deposit rules would thus seem to represent little more than a case of incremental deregulation. More importantly for our purposes, excluding these platforms from the definition of a deposit broker means that the relevant deposits will not attract the higher deposit insurance premiums and liquidity coverage ratio requirements normally associated with brokered deposits. The net result will therefore be to reduce the overall regulatory

203. *See id.*

204. Unsafe and Unsound Banking Practices: Brokered Deposits Restrictions, 85 Fed. Reg. 7453 (proposed Feb. 10, 2020) (to be codified at 12 C.F.R. §§ 303, 337).

205. *See* Unsafe and Unsound Banking Practices: Brokered Deposits and Interest Rate Restrictions, 86 Fed. Reg. 6742, 6792 (Jan. 22, 2021) (to be codified at 12 C.F.R. §§ 303, 337).

206. *Id.* at 6751–52 (accepting the proposal which asking for such an exemption).

207. *See id.* at 6750.

208. *See id.*

209. *See id.*

compliance burden on banks in connection with these increasingly important correspondent relationships.

In theory, we might expect at least some of these cost savings to be passed on to bank depositors in the form of lower fees, higher interest rates, or other benefits. Once again, however, the FDIC's new rules will tip the scales decidedly in favor of banks. As we have seen, SPPs are often forced to maintain correspondent relationships with banks in order to gain access to the conventional payment architecture.[210] Notably, the new rules further limit their options insofar as banks, ostensibly seeking to ensure compliance with the revised primary purpose test, might demand that these platforms deposit 100% of their customer funds as a condition of any correspondent relationship. Compounding matters, these rules would potentially limit the ability of banks to pay any interest on these deposits. Accordingly, even when platforms attempt to push back against these strict terms, the effect of the rules will still shift the bargaining power even further toward banks. Paradoxically, it will also mean that the banking industry's cheapest and most captive source of financing may come from some of its potentially most disruptive competitors.

* * *

Together, the financial safety net, restrictions on infrastructure access, and brokered deposit rules privilege and protect conventional deposit-taking banks, thereby reinforcing the historical bundling of banking, money, and payments. The salient questions thus become: why should we care about this bundling? What distortions does it create? And what, if anything, can we do to eliminate these distortions without jeopardizing monetary and financial stability? It is to these important questions that we now turn.

III. THE DISTORTIONS CREATED BY BUNDLING

The historical bundling of banking, money, and payments has been the source of enormous benefits. For depositors, bank accounts offer a safe and secure environment in which to build and grow their hard-earned savings. Depositors can also use banks and their vast clearing networks to make and receive electronic payments: enabling them to transact with friends, family, businesses, and governments across the globe. Simultaneously, banks mobilize these savings for the purpose of making productive investments in the people, businesses, and governments that are the ultimate engines of economic growth and development. These important and intertwined benefits are reflected in the spectacular success of banks over the course of the nineteenth and twentieth centuries.[211]

---

210. *See supra* Section II.B.

211. This success can be measured in a variety of ways, including: the number and size of banks, the scope of their activities, and the profits they generate. Of course, the ostensible success of banks on the basis of these measures must be distinguished from the broader and more important question of whether they have contributed to economic growth and development. On this question, the available empirical evidence is decidedly more mixed. For a useful overview of this evidence, see generally Howard Bodenhorn, *Two Centuries of Finance and Economic Growth in the United States, 1790–1980*, *in* HANDBOOK OF FINANCE AND DEVELOPMENT 107 (Thorsten Beck & Ross Levine eds., 2018) and RONDO

Paradoxically, these benefits are also reflected in their even more spectacular failures.[212]

Yet like any constellation of institutional arrangements, the time inevitably comes when we are forced to reexamine their rationale, benefits, and costs in light of new developments. This Part examines the costs: specifically the *distortions* created by the legally entrenched bundling of banking, money, and payments. Three distortions stand out. First, by providing banks with a robust financial safety net and exclusive access to Federal Reserve master accounts, the law distorts the competitive landscape for both money and payments, creating significant barriers to entry and, ultimately, undercutting financial innovation and inclusion. Second, by imposing strict rules on banks, the law incentivizes aspiring new entrants to engage in potentially destabilizing regulatory arbitrage. Remarkably, this regulatory arbitrage often forces new entrants to rely on conventional deposit-taking banks. And last but not least, by preventing these new entrants from offering functionally substitutable products and services outside the conventional banking system, the law effectively increases our own reliance on banks, thus exacerbating the too-big-to-fail problem.

A. LESS COMPETITION, INNOVATION, AND INCLUSION

Perhaps the most significant distortions created by the law stem from its impact on competition. As a preliminary matter, the financial safety net gives banks a clear and obvious comparative advantage in the issuance of monetary liabilities. In theory, almost anyone can issue their own money: witness Ithaca HOURs, Brixton Pounds, Canadian Tire money, and thousands of other small-scale private monies that have emerged throughout history.[213] In good times, when the issuers of these liabilities are fundamentally solvent and confidence is high, these private monies may create the illusion of being close functional substitutes for conventional bank deposits, with holders viewing them as reliable—if limited use—stores of value and means of payment.[214]

CAMERON, BANKING IN THE EARLY STAGES OF INDUSTRIALIZATION: A STUDY IN COMPARATIVE ECONOMIC HISTORY (1967).

212. *See* Ben S. Bernanke, *Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression*, 73 AM. ECON. REV. 257, 257–58 (1983) (explaining the impact of bank failures during the Great Depression on credit allocation, screening and monitoring). *See generally* FRIEDMAN & SCHWARTZ, *supra* note 78, at 299–407 (describing the impact of bank failures during the Great Depression on the money supply).

213. *See* Paul Glover, *Creating Community Economics with Local Currency*, ITHACA HOURS ONLINE (Dec. 11, 2006), http://www.lightlink.com/hours/ithacahours/intro.html [https://perma.cc/9D7T-ZXM5] (denominated in U.S. dollars, Ithaca HOURs could be earned by providing services for Ithaca residents, which could then be used to purchase services within the community); BRIXTON POUND, https://brixtonpound.org/ [https://perma.cc/QM3N-UX6Z] (last visited Nov. 3, 2021) (Brixton Pounds are a local, complementary currency that circulates alongside the British pound in the London district of Brixton); Harold Don Allen, *Canadian Tire Scrip*, NUMISMATIST, Dec. 2006, at 63, 63–64 (Canadian Tire Money was a form of coupon that could be redeeming for products and services at Canadian Tire stores).

214. Although, even then, the limited use nature of these private monies—that is, that they can only be used in specific locations or establishments—will often make them less useful than more widely used forms of money. *See* George Selgin, *Friday Flashback: The Folly That Is "Local" Currency*, ALT-M

Yet in bad times, when these issuers are in financial distress and confidence evaporates, the difference between bank deposits and these other monies becomes all too clear. As we have already seen, this difference is a function of the law. Specifically, whereas the financial safety net serves to insulate depositors from the economic consequences of bank failure, the holders of these other monetary liabilities are subject to the strict substantive and procedural requirements of general corporate bankruptcy law.[215] As a result, if your bank fails, you are highly likely to get your money back within twenty-four hours. But if PayPal fails, you may be waiting several years for your money and eventually recover only pennies on the dollar.[216] Ultimately, this is the difference between good and bad money and why—despite all their manifest shortcomings—bank deposits continue to make up the vast majority of the money supply.

The law has a similar impact on competition in the payments industry. Most importantly, by restricting access to Federal Reserve master accounts and, indirectly, the major clearing networks, the law deprives SPPs such as PayPal, Venmo, Circle, and Wise of an intermediate input that is essential to the products and services they offer to their customers. As described in Part II,[217] payment systems are characterized by significant economies of scale, with the costs of operating a system *decreasing* as the number of member banks and volume of payments *increases*. These systems are also characterized by pronounced network effects, with the benefits accruing to each user *increasing* with the size of the network. The conventional payment system capitalizes on these economies of scale and network effects through the use of clearinghouses that expand the payment networks of individual member banks to include the depositors of all other member banks—exponentially increasing the size of the payment network. In effect, these clearing networks serve as the rails of the modern payment system. As a result, any payment platform without access to these rails will be severely limited in terms of the timetables, routes, and destinations that it is able to offer its customers.

Payment platforms that do not have access to these rails are essentially left with two unpalatable options. The first is to build their own financial infrastructure and attempt to attract customers and achieve scale organically by offering superior products and services. However, while this option might be attractive in a world of perfect competition, the path dependence, economies of scale, and network effects associated with the conventional payment system represent significant barriers to entry for platforms looking to establish and grow their business in this way. The second option, typically pursued in parallel with the first, is to enter into correspondent relationships with conventional deposit-taking banks. This

(Jan. 6, 2017), https://www.alt-m.org/2017/01/06/the-folly-that-is-local-currency/ [https://perma.cc/UX7W-NYYX].

215. For a more detailed description of the impact of corporate bankruptcy law on the ability of SPPs to honor their contractual commitments to customers, see Awrey, *supra* note 8, at 32–33.

216. *See id.*

217. *See supra* notes 130–31 and accompanying text.

option has the obvious and immediate benefit of giving platforms indirect access to the major clearing networks. However, it also makes these platforms extremely reliant on banks for access to the vital infrastructure necessary for them to successfully compete with the very same banks. To continue with the railroad analogy, it would be as if one consortium of incumbent railroad companies owned all the existing lines, leaving new and potentially more efficient train services no choice but to contract with these incumbents to secure the use of the rails necessary to transport their passengers. In the antitrust context—including railroads—these relationships are typically subject to "common carrier" rules that ensure that competitors have equal access to this infrastructure on equal terms.[218] In the banking context, however, new payment platforms are essentially left at the mercy of incumbent banks.

The competitive distortions created by this reliance can manifest themselves in a variety of ways. First, correspondent relationships provide banks with valuable insights into a platform's payment volumes, growth rates, and other strategic information—information that could conceivably be used to give banks a competitive edge.[219] Second, correspondent banks can potentially leverage their position as the gatekeepers of the conventional payment system to set prices and other terms in ways designed to limit a platform's profitability, growth, and returns from scale. Lastly, over the longer term, these informational and positional advantages thus make banks the logical acquirers of these platforms—eliminating a source of potential competition.[220]

Measuring the real-world impact of these competitive distortions is extremely difficult. Amongst a host of other methodological challenges, it requires us to imagine a counterfactual world in which banks and SPPs competed on a level legal playing field. Beyond the law, there are also a variety of other factors at play, including the economies of scale and network effects that characterize banking, money, and payments. Nevertheless, there is ample anecdotal evidence to suggest that the markets for money and payments in the United States fall far short of the ideal standard of perfect competition.[221] Most importantly, in a competitive marketplace, we would expect the threat of potential new entrants to drive incumbent banks to continuously improve the products and services they offer. It should also drive them to expand the delivery of these products and services to an ever-wider range of customers. Put simply, we should expect to observe high levels of both financial *innovation* and *inclusion*.

---

218. *See* Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1332–34 (1998).

219. Conversely, banks can block or limit an SPP's access to valuable customer data. *See* Van Loo, *supra* note 5, at 242–43.

220. For an example of this type of "buy to kill" strategy in the tech context, see generally Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710 (2017) and Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions*, 129 J. POL. ECON. 649 (2021).

221. For a review of competition in the banking, credit card, and fintech industries more generally, see Van Loo, *supra* note 5, at 242–48. Some of the anecdotal evidence in terms of the impact of these competitive distortions on innovation is described in the next paragraph.

The reality is often starkly different. In terms of financial innovation, the United States is something of an anomaly amongst developed countries. Over the past several decades, the United States has been relatively slow to roll out a variety of new banking and payment technologies, including open banking,[222] mobile banking,[223] EMV security chips,[224] contactless payments,[225] and real-time settlement.[226] Although their use has declined significantly in recent years, the United States is also the only developed country in the world that still relies heavily on costly, inconvenient, unsecure, and environmentally harmful paper checks.[227] Put bluntly, the problem is not that new and better banking and payment technologies do not presently exist. Indeed, in many cases, American financial institutions and technology firms have played an important role in their *development*.[228] Instead, the problem is that American banks have been relatively slow in the *adoption* of these new technologies. Accordingly, while the United States is often held up as

222. "Open banking" refers to the development of application programming interfaces (APIs) that enable banks to securely share customer data with third parties. *See* SUSAN PANDY, FED. RSRV. BANK OF BOS., DEVELOPMENTS IN OPEN BANKING AND APIS: WHERE DOES THE U.S. STAND? 2–4 (2020), https://www.bostonfed.org/-/media/Documents/PaymentStrategies/Open-Banking-and-APIs-Brief.pdf [https://perma.cc/7F8L-XYBX] (describing the status of open banking initiatives in the United States relative to Singapore, Hong Kong, China, Japan, Australia, and New Zealand).

223. *Compare* FED. DEPOSIT INS. CORP., HOW AMERICA BANKS: HOUSEHOLD USE OF BANKING AND FINANCIAL SERVICES 4 (2019), https://www.fdic.gov/analysis/household-survey/ [https://perma.cc/K94M-W42B] (reporting that 34% of survey respondents in the United States used mobile banking), *with Online Banking Penetration in Great Britain from 2007 to 2020*, STATISTA (Aug. 2020), https://www.statista.com/statistics/286273/internet-banking-penetration-in-great-britain/ [https://perma.cc/MHD2-TJ8S] (reporting that 73% of households in the United Kingdom used mobile banking as of 2019).

224. *See* Kathleen Elkins, *Why It Took the US So Long to Adopt the Credit Card Technology Europe Has Used for Years*, INSIDER: PERS. FIN. (Sept. 27, 2015, 12:30 PM), https://www.businessinsider.com/why-it-took-the-us-so-long-to-adopt-emv-2015-9 [https://perma.cc/H2DH-6WFQ].

225. *See Is the US on the Verge of a Contactless Surge?*, PYMENTS.COM (June 6, 2019), https://www.pymnts.com/news/retail/2019/contactless-payments-tap-and-pay-mpos/ [https://perma.cc/W2XS-KS77] (noting that the United States has lagged behind other developed countries in the adoption of contactless payments).

226. *See* STEVEN T. MNUCHIN & CRAIG S. PHILLIPS, U.S. DEP'T OF THE TREASURY, A FINANCIAL SYSTEM THAT CREATES ECONOMIC OPPORTUNITIES: NONBANK FINANCIALS, FINTECH, AND INNOVATION 156 (2018) https://home.treasury.gov/sites/default/files/2018-08/A-Financial-System-that-Creates-Economic-Opportunities—Nonbank-Financials-Fintech-and-Innovation.pdf [https://perma.cc/W6ZL-MMRK] ("Many jurisdictions around the world have embarked on initiatives to increase the speed of payments. In many cases, the progress towards faster payments abroad has outpaced progress in the United States."); MORTEN BECH, YUUKI SHIMIZU & PAUL WONG, THE QUEST FOR SPEED IN PAYMENTS, *in* BANK FOR INT'L SETTLEMENTS, BIS QUARTERLY REVIEW: INTERNATIONAL BANKING AND FINANCIAL MARKET DEVELOPMENTS 57, 59–60 (2017), https://www.bis.org/publ/qtrpdf/r_qt1703.pdf [https://perma.cc/Q37X-WJDW] (describing country-level developments in real-time payment systems and notably excluding any mention of the United States).

227. *See* Katie Robertson, *Why Can't Americans Ditch Checks?*, BLOOMBERG: BUS. (July 26, 2017, 4:00 AM), https://www.bloomberg.com/news/articles/2017-07-26/why-can-t-americans-give-up-paper-checks.

228. EMV security chips, for example, were first developed by U.S.-based Visa and Mastercard, together with the European company Europay (hence the acronym "EMV"—Europay, Mastercard, Visa). *See* Robin Saks Frankel, *When Were Credit Cards Invented: The History of Credit Cards*, FORBES: ADVISOR (July 27, 2021, 9:00 AM), https://www.forbes.com/advisor/credit-cards/history-of-credit-cards/ [https://perma.cc/U82L-3XBK].

a global leader in both finance and technology, the benefits of this leadership have not always been immediately or fully shared with the customers of U.S. banks.

In terms of financial inclusion, while the United States has undoubtedly made strides in recent years, the stark reality is that a significant number of American households still do not have access to a basic bank account. The FDIC's most recent survey on *Household Use of Banking and Financial Services* estimates that over 5% of all households—7.1 million households in all—did not have any members with an active checking or savings account.[229] The rates of these "unbanked" households were even higher for lower income households, households with lower levels of educational attainment, African-Americans, Hispanics, Native-Americans, and people with disabilities.[230] Of the unbanked households that took part in the survey, over 34% identified high fees as one of the reasons for not having a bank account, almost 20% identified a lack of products and services that met their needs, and almost half identified insufficient funds to meet minimum balance requirements imposed by banks.[231] Asked what their main reason was for not having a bank account, 29% responded that they were not able to meet minimum balance requirements, 7.3% said high fees, and just under 2% said that banks did not offer the right products and services.[232]

While these statistics are part of a larger and more complex set of problems, they are also consistent with the observation that the banking industry has not been subject to the type of vigorous competition that might have otherwise driven it to harness new technologies in order to drive down costs, offer new and better products and services, and reach new customers. At the very least, it suggests that a little more competition from outside the conventional banking industry might yield some meaningful progress toward these important objectives.

B. DESTABILIZING REGULATORY ARBITRAGE

Given the significant competitive advantages that the law confers on banks, one might reasonably ask why SPPs do not simply obtain conventional banking licenses.[233] The answer, in many cases, is bank *regulation*. The financial safety net created by lender of last resort facilities, deposit insurance schemes, and special resolution regimes reduces the incentives of depositors and other creditors to monitor a bank's capital structure, investment decisions, and overall financial

229. FED. DEPOSIT INS. CORP., *supra* note 223, at 1.

230. *See id*. at 46.

231. *Id*. at 3 fig.ES.3.

232. *Id*.

233. In a limited number of cases, payment platforms have obtained conventional banking licenses. PayPal, for example, owns a subsidiary that has a banking license in the European Union. *See* EUR. BANKING AUTH.: CREDIT INSTS. REG. (Dec. 31, 2020), https://euclid.eba.europa.eu/register/cir/entityView/CRD_CRE_INS/549300ZV1RSA9F0LU821 [https://perma.cc/X5P4-ZDMW] (listing PayPal's European subsidiary as a credit institution). At present, however, it is not clear whether PayPal holds balances or processes payments on behalf of its European customers through this subsidiary's accounts.

health.[234] In theory, the resulting lack of oversight can then give bank shareholders and managers free reign to take socially excessive risks.

The regulatory frameworks governing banks seek to address this moral hazard problem using three principal strategies. The first strategy is liquidity regulation. This liquidity regulation includes reserve ratios designed to ensure that banks hold enough cash and other reserves to protect themselves against potential runs —thereby minimizing their reliance on lender of last resort facilities during periods of institutional or systemic stress.[235] In the wake of the global financial crisis, these reserve ratios have been supplemented by more sophisticated mechanisms, such as the Basel III Liquidity Coverage Ratio (LCR) designed to ensure that banks hold enough cash and other high-quality liquid assets to survive a hypothetical stress test scenario.[236]

The second strategy is capital regulation. Capital regulation requires banks to finance their operations using a minimum amount of retained earnings, common equity, and other capital instruments. The defining feature of these capital instruments is that, unlike debt, they are capable of absorbing losses without triggering bankruptcy: that is, while the bank is still a going concern.[237] At present, banks licensed in the United States are subject to a minimum capital requirement of at least 8% of their total risk-weighted assets.[238] This basic requirement is then subject to potential increase on the basis of a bank's idiosyncratic risk profile, systemic importance, prevailing macroeconomic conditions, and other factors.[239] As of June 2019, the average Common Equity Tier One (CET1) capital ratio of U.S. banks was approximately 12%.[240] Whereas liquidity requirements reduce the temptation of bank shareholders and managers to operate with an insufficient

234. *See* ARMOUR ET AL., *supra* note 27, at 370–71 (identifying various reasons, including the financial safety net, why bank depositors and other creditors have limited incentives to play an active role in bank governance).

235. The Federal Reserve's current reserve ratio requirements are published on its website. *See Reserve Requirements*, BD. OF GOVERNORS OF THE FED. RSRV. SYS. (Feb. 3, 2021), https://www.federalreserve.gov/monetarypolicy/reservereq.htm [https://perma.cc/44RT-TFEQ]. In response to the COVID-19 pandemic, the reserve ratio was reset to zero percent on March 26, 2020, where it currently remains. *See id.*

236. For a more detailed description of the rationale and design of the liquidity coverage ratio, see generally BASEL COMM. ON BANKING SUPERVISION, BANK FOR INT'L SETTLEMENTS, BASEL III: THE LIQUIDITY COVERAGE RATIO AND LIQUIDITY RISK MONITORING TOOLS (2013), https://www.bis.org/publ/bcbs238.pdf [https://perma.cc/X5HS-LNCF].

237. *See* ANAT ADMATI & MARTIN HELLWIG, THE BANKERS' NEW CLOTHES: WHAT'S WRONG WITH BANKING AND WHAT TO DO ABOUT IT 94 (2013). For a detailed explanation of why common equity in particular is capable of absorbing losses while a bank is a going concern, see *id.* at 81–99.

238. *See* BARR ET AL., *supra* note 72, at 324 & fig.2.7-2 (describing the 8% minimum threshold and its components: Tier 1 common equity capital, additional Tier 1 capital, and Tier 2 capital).

239. For a more detailed description of the various components of minimum capital requirements, see ARMOUR ET AL., *supra* note 27, at 290–313 (defining capital and describing the basic requirements, along with various mandatory and discretionary capital buffers).

240. *See* BD. OF GOVERNORS OF THE FED. RSRV. SYS., FINANCIAL STABILITY REPORT 29 fig.3-2 (2019), https://www.federalreserve.gov/publications/files/financial-stability-report-20191115.pdf [https://perma.cc/JVZ3-6D7L].

stock of liquid assets, minimum capital requirements reduce the temptation to maximize bank leverage as a means of increasing a bank's return on equity.[241]

Lastly, reflecting their foundational importance within the current monetary system, banks are subject to intensive prudential supervision.[242] The basic building blocks of bank supervision include comprehensive reporting requirements, onsite examinations by supervisory personnel, and a composite rating process designed to evaluate the safety and soundness of individual banks.[243] In the aftermath of the financial crisis, banks have also been subjected to periodic "stress testing" designed to evaluate the resilience of their balance sheets in the face of a hypothetical set of adverse financial and macroeconomic conditions.[244] The results of these stress tests are then fed back into the supervisory process, helping supervisors identify and address potential weaknesses in a bank's capital or liquidity positions. Where these stress tests reveal material weaknesses, banks may be prohibited from making distributions to shareholders or required to raise additional capital.

These regulatory frameworks are amongst the largest, most complex, and most costly in the world.[245] And while estimates of compliance costs should be taken with a grain of salt, a recent survey conducted by the Conference of State Bank Supervisors (CSBS) found that the regulatory compliance burden for a medium-sized bank with between $1 billion and $10 billion dollars in assets represented, on average, approximately 5.3% of its total operating expenses.[246] Further compounding matters, these regulatory frameworks are specifically tailored to the

241. This temptation arises because for any given amount of revenue, increasing the amount of debt on a bank's balance sheet will mechanically increase its return on equity. A simple numerical example will illustrate this point. Imagine a bank with $100 of assets that generates income of $5 per year. With a capital ratio of 10% ($10 of equity and $90 of debt), this bank will have a return on equity of 50% ($5 revenue per $10 equity). However, if the bank reduces its capital cushion to 5% (thereby increasing its debt to $95), this increases its return on equity to 100% ($5 revenue per $5 equity).

242. *See* Menand, *supra* note 67, at 974–80 (describing the monetary foundations of the National Banking System and U.S. banking supervision).

243. *See* BARR ET AL., *supra* note 72, at 898–903 (describing these reporting requirements, onsite examinations, and the CAMELS rating process).

244. In the United States, these stress tests involve two separate but complementary processes: the Dodd-Frank Act mandated stress tests (DFAST) and the Comprehensive Capital Analysis and Review (CCAR). For the 2020 DFAST results, see generally BD. OF GOVERNORS OF THE FED. RSRV. SYS., DODD-FRANK ACT STRESS TEST 2020: SUPERVISORY STRESS TEST RESULTS (2020), https://www.federalreserve.gov/publications/files/2020-dfast-results-20200625.pdf [https://perma.cc/EAR8-ZNUA]. For the 2020 CCAR results, see generally BD. OF GOVERNORS OF THE FED. RSRV. SYS., DECEMBER 2020 STRESS TEST RESULTS (2020), https://www.federalreserve.gov/publications/files/2020-dec-stress-test-results-20201218.pdf [https://perma.cc/2ZZ8-ESDV].

245. For a formal analysis of the complexity of Title 12 of the U.S. Code, governing banks and banking, see William Li, Pablo Azar, David Larochelle, Phil Hill & Andrew W. Lo, *Law Is Code: A Software Engineering Approach to Analyzing the United States Code*, 10 J. BUS. & TECH. L. 297, 343 (2015).

246. *See* DREW DAHL, JIM FUCHS, ANDREW MEYER & MICHELLE NEELY, FED. RSRV. BANK OF ST. LOUIS, COMPLIANCE COSTS, ECONOMIES OF SCALE AND COMPLIANCE PERFORMANCE: EVIDENCE FROM A SURVEY OF COMMUNITY BANKS 8 (2018), https://www.communitybanking.org/~/media/files/compliance%20costs%20economies%20of%20scale%20and%20compliance%20performance.pdf [https://perma.cc/R7H7-HDYQ] (this calculation excludes interest expense).

business models of conventional deposit-taking banks. Perhaps most importantly, sophisticated risk-based capital requirements, intensive prudential supervision, and rigorous stress testing are all designed to measure, monitor, and constrain risk-taking by financial institutions that combine deposit-taking with retail and commercial lending, investments in capital markets, and an increasingly wide range of other financial services.[247]

The upshot for SPPs is that obtaining a conventional banking license requires ongoing compliance with a complex and costly rulebook that is not tailored to their specific—and often far narrower—business models. It is therefore hardly surprising that many of these platforms have instead sought out more flexible, less burdensome regulatory frameworks. For these platforms, the regulatory frameworks of choice have been a collection of highly fragmented and heterogeneous state laws that were first introduced in the 1930s to regulate telegraphic wire transfer services such as Western Union. While the names given to these firms vary from state to state, they are often referred to generically as "money services businesses" or MSBs.[248]

The state laws that govern MSBs utilize three principal regulatory strategies to ensure their safety and soundness. These strategies include minimum net worth requirements, security requirements, and restrictions on permissible investments. Together, these strategies—often referred to as a "Three-Legged Stool"[249]—are designed to protect customer funds, ensure that MSBs can meet their customer obligations, and, more generally, preserve confidence in both the money services business and the broader financial services industry.[250] At least in theory, therefore, this three-legged stool can be viewed as broadly equivalent to the core regulatory strategies employed by conventional bank regulation.

In practice, however, these strategies are often far less sophisticated, less standardized, and, ultimately, less effective. Take the minimum net worth requirements

---

247. For a description of how the "business of banking" has expanded over time, see BARR ET AL., *supra* note 72, at 189–219. For a description of the expanding "business of banking" within the context of derivatives, see generally Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the "Business of Banking,"* 63 U. MIA. L. REV. 1041 (2009).

248. These names include "money services businesses," "money transmission businesses," and "money remittance businesses." As used here, the term MSB encompasses all of these terms. MSBs are also subject to regulation at the federal level. For example, they are required to register with the U.S. Department of the Treasury, falling within the perimeter of its Financial Crimes Enforcement Network (FinCEN), and to comply with basic customer disclosure obligations. *See* 31 U.S.C. §§ 5330(a), 5331(a)(2); 12 C.F.R. § 1005.31(b) (2020). Nevertheless, the bulk of the regulation to which MSBs are subject—including, most importantly, the requirements designed to ensure their prudential safety and soundness—are imposed by state law.

249. *E.g.*, CONF. OF STATE BANK SUPERVISORS, MSB MODEL LAW: EXECUTIVE SUMMARY 5 (2019), https://www.csbs.org/sites/default/files/2019-10/Executive%20Summary%20-%20Draft%20Model%20Law%20%28Sept%202019%29.pdf [https://perma.cc/HQ2L-TV9L].

250. *See* NAT'L CONF. OF COMM'RS ON UNIF. STATE L., UNIFORM MONEY SERVICES ACT 33 (2004) (addressing surety bond requirements); *id.* at 38 (addressing net worth requirements); *id.* at 60–63 (addressing permissible investment restrictions); *see also* CONF. OF STATE BANK SUPERVISORS, *supra* note 249, at 2 (explaining that the model law is designed to "protect consumers from harm," "prevent bad actors from entering the money services industry," and "preserve public confidence in the financial services sector").

for example. Like bank capital requirements, minimum net worth requirements are designed to ensure that MSBs hold sufficient retained earnings and equity capital to absorb a threshold level of losses without triggering bankruptcy.[251] At present, however, these requirements vary significantly from state to state: ranging from zero dollars in four states to $3 million in Washington and Oklahoma.[252] Even more importantly, these requirements are not cumulative.[253] This means that PayPal, for example, can comply with its net worth requirements *in all states* by holding the $3 million in retained earnings and equity required in both Washington and Oklahoma.[254] Given that PayPal reported total assets of just over $70 billion in its most recent financial statements,[255] this translates into an effective minimum capital requirement of just over 0.004%.[256] To put this figure into context, that's approximately 1/3000 of the average CET1 capital level for U.S. bank holding companies.[257] Viewed from this comparative perspective, MSB minimum net worth requirements thus contemplate a razor thin layer of capital protection.

The protections afforded under surety bond, letter of credit, collateral deposit, insurance, and other security requirements are similarly inadequate. Like deposit insurance schemes, these security requirements are designed to ensure that a minimum amount of money is put aside for distribution to an MSB's customers in the event of its bankruptcy.[258] Once again, however, these security requirements vary significantly from state to state, ranging from as low as $10,000 to as much as $1 million.[259] In contrast with net worth requirements, these security requirements

---

251. *See* Awrey, *supra* note 8, at 47.

252. *Id*. at 47–48. Similarly, while some states only impose minimum net worth requirements, others combine minimum requirements with a hard cap on the amount of equity and retained earnings that MSBs must hold. Moreover, harkening back to the golden age of the telegram, many states still calculate these requirements based on the number of physical locations—that is, offices or branches—that an MSB has within a given state.

253. *Id*. at 48.

254. In some cases this will create de facto harmonization of net worth requirements across states.

255. *See* PAYPAL, *supra* note 201, pt. 2 at 25 (reporting total assets of $70,379,000,000 as of December 31, 2020).

256. Calculated as $3,000,000 ÷ $70,379,000,000 = 0.004262635%.

257. *See* BD. OF GOVERNORS OF THE FED. RSRV. SYS., *supra* note 240 (reporting an average Tier 1 capital ratio for U.S. banks of over 12%; 12 ÷ 0.004 = 3000). "While one might object to this comparison on the basis that banks take more risks, this is ultimately an empirical question that, as we shall see, cannot simply be taken for granted." Awrey, *supra* note 8, at 49. A technically more valid criticism is that, while the calculations for PayPal are based on its *total* assets, bank capital requirements are typically based on *risk-weighted* assets. Ultimately, however, this divergence is nowhere near large enough to account for the more than 3,000 times difference between these figures.

258. Whereas surety bond and bank account requirements envision that an MSB will put aside liquid assets, letters of credit envision that an MSB will arrange (and pay for) a guarantee from a bank pursuant to which the bank agrees to pay the specified amount to customers in the event of the MSB's bankruptcy. *See* Awrey, *supra* note 8, at 49–51.

259. *Id*. at 50. Several states impose additional security requirements on MSBs whose financial condition is impaired. "In many cases, these minimums are then supplemented by additional amounts calibrated on the basis of either the volume of payments processed by an MSB or the number of physical locations within the relevant state. Many states also impose a cap on these requirements, ranging from to $125,000 in Alaska to $7 million in California." *Id*.

are typically calculated on a cumulative basis.[260] As a result, MSBs are required to satisfy the minimum security requirement, plus any supplemental amounts, in each state. Thus, for example, assuming that PayPal was subject to the maximum security requirement in each state, it would currently be required to set aside somewhere in excess of $42 million.[261] While this is undoubtedly a significant sum, it also pales in comparison to the approximately $35 billion currently sitting in PayPal's customer accounts.[262] Roughly speaking, it is the equivalent of a deposit-insurance scheme that committed to paying out just under *twelve cents* for every *hundred dollars* deposited with a failed bank.

The third and arguably most important leg of the stool consists of restrictions on the types of financial instruments in which MSBs are permitted to invest. Like bank liquidity requirements, these permissible investment restrictions are designed to ensure that MSBs retain enough cash and other highly liquid assets to immediately and fully honor customer redemption requests. Against this backdrop, it is perhaps surprising that many states permit MSBs to invest in a range of risky financial instruments—everything from publicly traded shares and corporate bonds, to mortgage-backed securities and opaque and illiquid intragroup debt.[263] Indeed, ten states lack any restrictions whatsoever on how MSBs may invest customer funds.[264] Although these lax restrictions give MSBs considerable latitude when investing customer funds, they also expose the customers to significant liquidity and solvency risks. Equally important, these risks may be poorly understood by the customers that face them.

Ultimately, state MSB laws are the product of a bygone era when firms like Western Union would only hold customer funds for a very brief period of time—typically, only as long as it took for the intended recipient to get to the nearest branch. The fleeting nature of these holdings meant that MSBs were not in a position to invest customer funds in risky financial instruments, and that customers were only briefly exposed to the risk that an MSB might default on its obligations. But times have changed. Today, some of the largest MSBs are using customer

---

260. *Id.*

261. *See id.* at 50–51 & n.191 ("Assuming that PayPal is not in a compromised financial position, in which case many states would require additional security. Regrettably, without more detailed state-by-state information regarding PayPal's payment volumes, it is not possible to provide a more accurate estimate.").

262. As previously acknowledged:

> Unfortunately, PayPal does not disclose granular information regarding the geographic location of its customers or payment flows. However, if we (conservatively) assume that the United States accounts for ten percent of PayPal's outstanding customer balances, the estimated aggregate security requirements ($42 million) would amount to [1.2%] of these balances as of [December 31, 2020].

Id. at 51 n. 192.

263. *See id.* at app. A (describing the range of permissible investments in each state).

264. *See id.* (including Alabama, Delaware, Georgia, Maine, Montana, New Hampshire, Pennsylvania, Rhode Island, West Virginia, and Wisconsin).

funds to accumulate vast pools of longer-term capital.[265] Existing state laws then permit these MSBs to invest this capital in potentially risky financial instruments, all while continuing to promise customers the option to transfer or withdraw the ability to their funds on demand. Although this combination of longer-term, risky, and potentially illiquid assets with short-term, highly liquid monetary liabilities presents familiar risks, they are not the risks that state MSB laws are currently designed to address. By exploiting these antiquated state laws, SPPs are contributing to the emergence of a less stable monetary and financial system.

The potential instability generated by the exploitation of lax state MSB laws would likely be amplified by the co-dependent relationship between SPPs and conventional deposit-taking banks. State MSB laws generally permit platforms to deposit customer funds with banks or other insured depository institutions. Where an SPP then combines these deposits with more risky investments, this will increase the probability that the platform will experience a run—thereby triggering a large withdrawal of customer funds from the bank. Indeed, given their legally constructed liquidity, MSBs are likely to withdraw bank deposits *first*, that is, before selling risky and more profitable investments in order to fund customer withdrawal requests. In theory, these large and lumpy withdrawals could then spark doubts about the bank's own liquidity and solvency, potentially triggering a run on the bank itself. Crucially, of course, this is precisely one of the risks that brokered deposit rules were designed to address. Accordingly, the combination of lax state MSB laws and the recent rollback of the FDIC's brokered deposit rules serves both to cement the interconnectedness between banks and MSBs and sow the seeds of potential monetary and financial instability.

C. EXACERBATING THE "TOO-BIG-TO-FAIL" PROBLEM

Last but not least, the unique privileges and protections that the law extends to conventional deposit-taking banks exacerbate the too-big-to-fail problem. As described by the Financial Stability Board (FSB), the global oversight body for systemic risk, the too-big-to-fail problem arises "when the threatened failure of a [systemically important financial institution] – given its size, interconnectedness, complexity, cross-border activity or lack of substitutability – puts pressure on public authorities to bail it out using public funds to avoid financial instability and economic damage."[266] Historically, the too-big-to-fail problem has reflected society's reliance on banks as critical sources of financing, money, and payments.[267] As we have seen, although banks may no longer represent the dominant

265. *See, e.g.*, *supra* notes 200–01 and accompanying text (describing PayPal's holdings of customer funds).

266. FIN. STABILITY BD., EVALUATION OF TOO-BIG-TO-FAIL REFORMS ¶ 2 (2019), https://www.fsb.org/wp-content/uploads/P230519.pdf [https://perma.cc/Q4EV-Y5AS].

267. *See generally* Lee Davison, *Continental Illinois and "Too Big to Fail," in* 1 FED. DEPOSIT INS. CORP., HISTORY OF THE EIGHTIES – LESSONS FOR THE FUTURE: AN EXAMINATION OF THE BANKING CRISES OF THE 1980S AND EARLY 1990S, at 235 (1997), https://www.fdic.gov/bank/historical/history/235_258.pdf [https://perma.cc/4SNY-DVA8] (describing the origins of the term "too-big-to-fail" in this context).

sources of financing in the United States, they remain the dominant sources of both money and payments.[268] Moreover, despite the striking fragmentation of the U.S. banking industry, the vast majority of money and payments are concentrated in a handful of systemically important banks. As described in Part I, less than 1% of U.S. banks account for the bulk of domestic payment flows.[269] Similarly, as of September 2020, the then-sixty-one member banks of the RTP clearing network were collectively responsible for approximately 70% of the total demand deposit accounts in the United States.[270]

Ultimately, of course, this reliance provides a compelling rationale for the financial safety net. Importantly, however, it also creates the widespread expectation—reinforced by historical experience—that policymakers will go beyond the financial safety net to bail out systemically important banks in the thick of a crisis.[271] This expectation can be observed empirically in the form of lower financing costs for banks that are viewed as protected by this second, implicit, and far more controversial safety net.[272] In effect, if a bank's creditors expect the government to bail them out in a crisis, they will be willing to lend the bank money at lower rates of interest. Viewed in this light, the too-big-to-fail problem is yet another source of competitive distortions, giving the banks that benefit from it access to an important resource—capital—at a lower price than their competitors.

As reflected in the FSB's description, one of the key determinants of the existence and size of the too-big-to-fail problem is *substitutability*.[273] In a nutshell, where a socially useful financial product (such as money) or service (such as payments) is only offered by a relatedly small number or type of financial institutions, the failure of these institutions introduces the risk that the supply of these products or services may be insufficient to meet societal demand.[274] The destructive effects of this lack of substitutability were observed during the Great Depression, where widespread bank failures led to a

268. *See supra* Sections I.A, I.B.

269. *See* SORAMÄKI ET AL., *supra* note 123, at 3.

270. *See Financial Institutions Holding 70% of U.S. Deposit Accounts Have Access to RTP Network for Real-Time Payments*, CLEARING HOUSE (Sept. 9, 2020), https://www.theclearinghouse.org/payment-systems/articles/2020/09/09-09-2020-fis-holding-us-deposit-accounts-access-rtp-network [https://perma.cc/U36G-AS3S].

271. *See* Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Rsrv. Sys., Statement Before the Financial Crisis Inquiry Commission 20 (Sept. 2, 2010) (transcript available at http://www.federalreserve.gov/newsevents/testimony/bernanke20100902a.pdf [https://perma.cc/S5ML-LZ4F]).

272. For recent empirical work documenting this phenomenon, see generally Viral V. Acharya, Deniz Anginer & A. Joseph Warburton, The End of Market Discipline?: Investor Expectations of Implicit Government Guarantees (May 1, 2016) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1961656 [https://perma.cc/MN5C-KT2T] and Priyank Gandhi & Hanno Lustig, *Size Anomalies in U.S. Bank Stock Returns*, 70 J. FINANCE 733 (2015).

273. The importance of substitutability is also reflected in the Basel III Capital Rules, where it represents one of the key variables for identifying and calculating the capital surcharge for systemically important banks.

274. Conversely, where these products and services are offered by a wide variety of financial institutions, policymakers can permit a subset of these institutions to fail without risking a more general contraction in their supply.

severe contraction in both the money supply[275] and the provision of lending and other financial services.[276] It is this risk that ultimately compels policymakers to intervene, using bailouts as an administratively expedient, albeit politically toxic, strategy for ensuring the continued supply of these products and services. Against this backdrop, the financial safety net and restrictions on infrastructure access make it extremely difficult for firms other than banks to provide truly substitutable products and services. This increases our reliance on banks for arguably the two most essential products and services in our entire economic system: money and payments. Ultimately, this legally mandated reliance amplifies the too-big-to-fail problem.

* * *

Inevitably, measuring the impact of these distortions with any real certainty is incredibly difficult. Identification, measurement, and other methodological problems abound. Compounding matters, we are unable to observe the counterfactual worlds in which banks are not so deeply embedded within our systems of money and payments. Nevertheless, identifying these potential distortions provides us with a starting point for evaluating two important questions. First, what role should the law play in supporting the development of new financial technologies, platforms, and institutions that hold out the potential to transform our systems of money and payments? Second, how can the law balance this role with the overarching objective of promoting financial and monetary stability?

IV. THE UNBUNDLING PROJECT

The distortions created by the legally entrenched bundling of banking, money, and payments only matter in a world where we might have better options. After all, these distortions only represent a barrier to competition if there is actually something on the other side: the seeds of a better, faster, and more inclusive financial system. For most of the past two centuries, it was far from clear that this was the case. This left conventional deposit-taking banks safely ensconced at the apex of our financial and economic system as the only game in town. But recent technological developments have opened up a world of new possibilities—including in the realm of money and payments. This is not to suggest that all of these new technologies will necessarily yield meaningful social benefits. Indeed, there is good reason to think that at least some of them will turn out to be little more than a flash in the pan—fool's gold.[277] Yet predicting the potential uses and ultimate social value of emerging technologies has always been fraught with difficulty. In the case of money and payments, this difficulty is compounded by the existence of regulatory frameworks that, while distorting competition, also play a vital role

275. *See generally* FRIEDMAN & SCHWARTZ, *supra* note 78, at 299–420 (analyzing the government's monetary policy response to the Great Depression).

276. *See* Bernanke, *supra* note 212, at 257.

277. *See, e.g.*, Edmund Schuster, *Cloud Crypto Land*, 84 MOD. L. REV. 974, 974 (2021) (arguing against the "feasibility of a meaningful blockchain-based economic system").

in promoting financial and monetary stability. The question thus becomes how public policy should balance the objectives of fostering greater competition and innovation with the imperative of protecting society against the buildup and crystallization of systemic risk.

This Part explores this question in greater detail. It begins by identifying the essential policy problem: how can we calibrate the perimeter of the financial safety net and prudential regulation in a way that simultaneously promotes both competition and financial stability? It then describes in greater detail the emergent process of unbundling, the various models of unbundling that have been advanced, and articulates a proposed blueprint for regulatory reform. It concludes by evaluating the potential benefits of this blueprint in comparison with other models, while also addressing possible challenges and objections.

A. THE ESSENTIAL POLICY PROBLEM

In almost any other industry, the existence of significant legal obstacles to effective competition would not pose anything resembling an intractable policy problem. In many cases, all that policymakers would need to do is *remove* the obstacles, thereby creating a level legal playing field. But banking is not just any industry. In banking, the essential policy problem is that these obstacles—and specifically the financial safety net—also perform a socially useful function: reducing the probability and impact of idiosyncratic bank failures and preventing them from metastasizing into wider and more destructive financial crises. For this reason, the conventional wisdom has long been that leveling the legal playing field would pose a serious threat to both monetary and financial stability.[278] At one end of the policy spectrum, eliminating the financial safety net could undermine public confidence in banks, precipitating correlated depositor runs, draining money from the banking system, and ultimately triggering a generalized contraction in the money supply. At the other end, expanding this safety net beyond the conventional banking system could generate moral hazard problems, thus sowing the seeds of future financial and monetary instability.

The resulting dilemma is compounded by the fact that, in order to successfully eliminate potential moral hazard problems, policymakers must expand the perimeter of financial regulation to encompass the emergence of new markets, institutions, and technologies. This poses a host of technocratic challenges.[279] As a preliminary matter, policymakers must demarcate the optimal boundaries of the expanded regulatory perimeter, identifying the universe of markets, institutions, and activities that should fall within the subject matter scope of the relevant regulatory frameworks. Having set this boundary, policymakers must then design and implement rules that are both functionally equivalent to existing regulatory frameworks and yet specifically tailored to the unique business models of these

278. *See, e.g.*, Gary H. Stern, *Government Safety Nets, Banking System Stability, and Economic Development*, 9 J. ASIAN ECON. 21, 21 (1998).

279. For a more detailed description of these challenges, see ARMOUR ET AL., *supra* note 27, at 80–81.

new markets, institutions, and activities. Lastly, policymakers must attempt to insulate these frameworks from the corrosive hydraulic effects of regulatory arbitrage and the resulting prospect that burdensome new rules will simply incentivize market participants to shift their business—and risks—outside the regulatory perimeter.

Predictably, policymakers have not always been entirely successful in addressing these challenges. In most cases, this is not for lack of trying. Rather, designing and calibrating these regulatory frameworks is genuinely hard: demanding that policymakers navigate significant information gaps and uncertainty, anticipate potential unintended consequences, and often forcing them to balance competing regulatory objectives. Two brief examples from the realm of money and payments help illustrate this point. The first is money market funds (MMFs). MMFs emerged in the 1970s in response to demand for savings products that promised the safety and liquidity of bank deposits, but that were not subject to the restrictions then imposed by the Federal Reserve on how much interest banks were permitted to pay their depositors.[280] Over time, MMFs grew to play an important and largely unchecked role within the U.S. financial system, most notably as ready purchasers of short-term debt issued by other financial institutions.[281] This role would eventually bring MMFs to prominence in the thick of the global financial crisis.

The financial crisis exposed the vulnerability of MMFs to the same types of destabilizing runs as conventional deposit-taking banks, ultimately forcing the Federal Reserve and U.S. Treasury Department to provide a public backstop to the entire MMF industry.[282] In response, policymakers undertook a comprehensive review of MMF regulation. This review included a 693-page notice of proposed rulemaking, prompted over 1,400 comment letters from industry and other stakeholders, and resulted in an 893-page final rule that came into effect almost eight years after the financial crisis.[283] Yet despite years of study, consultation, and deliberation, the final rule appears to have done little to enhance the safety and soundness of MMFs. By the time the ink was dry, most institutional investors had already shifted their funds into MMFs that were not subject to the new rules.[284] Even more importantly, the COVID-19 pandemic triggered a pronounced spike in investor redemptions from MMFs that were subject to the new rules, once again forcing the Federal Reserve to provide liquidity support to the

280. *See generally* R. Alton Gilbert, *Requiem for Regulation Q: What It Did and Why It Passed Away*, 68 FED. RSRV. BANK ST. LOUIS REV. 22 (1986) (detailing the invention of MMFs and other financial products in reaction to the Fed's regulation of interest rate ceilings).

281. *See* Jeffrey N. Gordon, *Letter to the SEC on Money Market Fund Reform* 5–6 (Columbia L. Sch. Ctr. for L. & Econ. Stud., Working Paper No. 352, 2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1473275 [https://perma.cc/8HHP-8TBB].

282. For a more detailed description, see Dan Awrey & Kathryn Judge, *Why Financial Regulation Keeps Falling Short*, 61 B.C. L. REV. 2295, 2323 (2020).

283. *Id.* at 2324.

284. *See* BD. OF GOVERNORS OF THE FED. RSRV. SYS., FINANCIAL STABILITY REPORT 33–34 & fig.4-4 (2018), https://www.federalreserve.gov/publications/files/financial-stability-report-201811.pdf [https://perma.cc/7KRE-KTVW].

MMF industry.[285] More than a decade after the financial crisis, policymakers thus find themselves back at square one in designing an effective regulatory framework for MMFs.[286]

The second example is MSBs. As we have seen, the state-level regulatory frameworks governing MSBs were originally introduced in response to the emergence of telegraphic wire services such as Western Union. Today, however, these same regulatory frameworks are at the front lines of regulating a far more sophisticated and risky range of payment platforms. In response, the CSBS has recently proposed updating its model MSB law to incorporate a mechanism ostensibly based on a combination of bank capital and liquidity requirements.[287] Known as the "suspension bridge," this mechanism would use an MSB's loss absorbing capacity—that is, its tangible net assets minus total liabilities—to determine the scope of applicable permissible investment restrictions.[288] In effect, the larger an MSB's capital cushion, the broader the range of financial instruments in which it would be permitted to invest.

In many respects, the suspension bridge mechanism can be viewed as an intuitively appealing way of updating what has become an antiquated patchwork of state regulatory frameworks. Nevertheless, the potential application of this mechanism to MSBs raises a host of thorny and as yet unanswered questions.[289] Paramount amongst these questions is whether this mechanism—borrowed from the toolkit of conventional bank regulation—is sufficiently tailored to the business models of MSBs that it would serve to enhance their safety and soundness without simultaneously imposing costly, inflexible, and potentially unnecessary new regulatory burdens. In this respect, it is worth observing that the business models of PayPal, Wise, and other SPPs do not really resemble those of conventional deposit-taking banks. MSBs are essentially intermediaries, aggregating funds from their customers and then using these funds to invest in financial instruments.[290] They do not "create" money in the same way that banks do when they extend loans to borrowers,[291] nor is there evidence to suggest that their portfolios are concentrated in the type of longer-term, risky, and illiquid loans that, for

285. *See* Lei Li, Yi Li, Marco Macchiavelli & Xing (Alex) Zhou, *Run on Prime Money Funds During the COVID-19 Crisis*, VOXEU (July 14, 2020), https://voxeu.org/article/prime-money-funds-during-covid-19 [https://perma.cc/FGA9-W464].

286. *See* Request for Comment on Potential Money Market Fund Reform Measures in President's Working Group Report, 86 Fed. Reg. 8938, 8938 (Feb. 10, 2021) (soliciting comments from the public to "inform consideration of reforms to improve the resilience of money market funds").

287. *See* CONF. OF STATE BANK SUPERVISORS, *supra* note 249, at 7–9.

288. *Id.* at 7–8.

289. These questions include: Do MSBs have the internal expertise and resources needed to effectively manage the market, liquidity, and other risks associated with their investment portfolios? Do the banking supervisors in all fifty states have the expertise and resources needed to effectively supervise ongoing compliance with these proposed new requirements? What happens if an MSB—faced with a severe liquidity crisis—is no longer able to comply with these requirements?

290. *See* ARMOUR ET AL., *supra* note 27, at 478 (describing investment funds, insurance companies, and other financial institutions that perform this type of intermediation function).

291. *See* Michael McLeay, Amar Radia & Ryland Thomas, *Money Creation in the Modern Economy*, 54 BANK ENG. Q. BULL. 14, 16 (2014), https://www.bankofengland.co.uk/-/media/boe/files/

much of the twentieth century, were the staple of conventional deposit-taking banks.[292] These differences suggest that bank regulation may not be the most constructive starting point for designing a new regulatory framework for MSBs. Perhaps for this reason, the CSBS's proposal has yet to gain any significant traction with state banking supervisors.

Collectively, these technocratic challenges help explain why policymakers have often been reluctant to fundamentally rethink the legal frameworks that support and entrench our current bundled system of banking, money, and payments. If policymakers fail to expand the perimeter of regulation rapidly and effectively in response to the emergence of new markets and institutions, they risk contributing to the buildup of new sources of systemic risk. By the same token, however, if policymakers introduce new and untested regulatory frameworks, they must thread a difficult needle between taking too light a hand and imposing overly burdensome regulation that risks undercutting the transformative potential of new firms, business models, and technologies.

Faced with these unpalatable choices, policymakers have instead increasingly attempted to shoehorn new entrants into existing regulatory frameworks. The most controversial example of this approach is the proposal, championed by the OCC, for the creation of special purpose "fintech" charters.[293] While the full details of this proposal have yet to be made public, the OCC is essentially seeking to use its existing authority to charter national banks to license a broader range of financial technology—hence *fintech*—firms. While these firms would then be subject to the same regulatory and supervisory framework as national banks, the OCC has also signaled that it "may need to account for differences in business models" of these new licensees.[294] Perhaps not surprisingly, the proposal has received a cool reception from the fintech firms it was designed to attract: many of which do not closely resemble banks, and almost all of which would rather not be subject to the burdensome regulation and supervision that is imposed on them.[295] Compounding matters, the proposal has been challenged in court on the grounds that it contravenes both the letter and spirit of the OCC's chartering

quarterly-bulletin/2014/money-creation-in-the-modern-economy.pdf [https://perma.cc/G5AH-BG8S] (describing how the issuance of loans creates new deposits).

292. Although at present there is little publicly available information regarding the composition of MSB investment portfolios.

293. *See* OFF. OF THE COMPTROLLER OF THE CURRENCY, EXPLORING SPECIAL PURPOSE NATIONAL BANK CHARTERS FOR FINTECH COMPANIES 2 (2016), https://www.occ.gov/publications-and-resources/publications/banker-education/files/exploring-special-purpose-nat-bank-charters-fintech-companies.html [https://perma.cc/5H87-7TEL].

294. *Id.* at 2, 6. The OCC's statements in this regard are somewhat inconsistent. On the one hand, the OCC has stated that "applying a bank regulatory framework to fintech companies will help ensure that these companies operate in a safe and sound manner." *Id.* at 2. On the other hand, it has acknowledged that many firms would not be subject to the same safety and soundness standards as insured depository institutions. *See id.* at 6.

295. *See* Rachel Witkowski, *Google and PayPal Explored OCC's Fintech Charter, Then Walked Away*, AM. BANKER (June 16, 2019, 9:50 PM), https://www.americanbanker.com/news/google-and-paypal-explored-occs-fintech-charter-then-walked-away.

authority under the National Bank Act.[296] Yet, even if the OCC ultimately prevails in this litigation, the result will still be a functionally compromised fudge that is unlikely to strike an effective balance between promoting greater competition and innovation and addressing potential threats to financial and monetary instability.

So where do we go from here? To answer this question, we must first acknowledge that this policy problem is not the Gordian Knot that it might first appear. Indeed, once we understand that the potential social value of these new markets, institutions, and platforms stems not from their ability to *replicate* the existing relationship between banking, money, and payments—but rather from their potential to *unbundle* it—we can start to untether ourselves from the intellectual, conceptual, and legal frameworks underpinning conventional bank regulation. This, in turn, opens the door to a range of policy options that do not force policymakers to make a false choice between promoting competition and innovation or addressing potential systemic risks.

B. MODELS OF UNBUNDLING

There are many different models of unbundling. The first model, already well established in many parts of the world, involves the issuance and transfer of monetary liabilities by proprietary peer-to-peer (P2P) payment platforms such as PayPal.[297] These payment platforms utilize the Internet to communicate payment instructions and execute fund transfers between the platform's customers. Importantly, they also allow customers to maintain positive balances in their accounts on the platform's books.[298] In theory, when this custodial function is combined with the promise that customers will be able to transfer these balances on demand—including transfers to a customer's own bank account[299]—these balances thus bear a close functional resemblance to conventional bank deposits. Viewed in this light, P2P payment platforms have evolved to perform many of the same monetary and payment functions as conventional deposit-taking banks.

A second, but still embryonic, model of unbundling revolves around so-called "stablecoins." Stablecoins are a species of cryptocurrency: privately-organized payment systems that utilize digital ledgers to create tokens and execute and record P2P payments.[300] As their name suggests, stablecoins are designed to maintain a stable value in relation to the value of a specified reference asset—often a

296. *See* Lacewell v. Off. of the Comptroller of the Currency, 999 F.3d 130, 134 (2d Cir. 2021).

297. For a more detailed description of proprietary P2P payment platforms and how they differ from bank-based and money remittance platforms and other SPPs, see Awrey & van Zwieten, *Mapping the SPP*, *supra* note 16, at 14–16.

298. PayPal, for example, currently has over $35 billion in positive customer balances. *See* PAYPAL, *supra* note 201.

299. Crucially, the ability of customers to transfer positive balances to their own bank account is functionally equivalent to a withdrawal.

300. *See* MORTEN BECH & RODNEY GARRATT, CENTRAL BANK CRYPTOCURRENCIES, *in* BANK FOR INT'L SETTLEMENTS, BIS QUARTERLY REVIEW: INTERNATIONAL BANKING AND FINANCIAL MARKET DEVELOPMENTS 55, 57–62 (2017), https://www.bis.org/publ/qtrpdf/r_qt1709f.pdf [https://perma.cc/VV6K-U66D] (elaborating upon the various features of cryptocurrency). There is some debate around

conventional fiat currency such as the U.S. dollar.[301] The value of a stablecoin can be tethered to the value of its reference asset in a variety of ways. First, the sponsor of the stablecoin can contractually promise that it will redeem each unit for an equivalent unit of the reference asset on a one-to-one basis. This is the approach taken by JPMorgan's recently launched JPM Coin.[302] Second, the sponsor can make this promise more credible by setting aside dedicated reserve assets.[303] Ideally, these reserve assets should be highly liquid, denominated in the same currency as the reference asset, and equal to the outstanding market value of the relevant stablecoin. This is the approach taken by Circle's USDC.[304] Lastly, sponsors can use algorithms designed to maintain a stable price, typically by increasing or decreasing the supply of the relevant stablecoin, as necessary, in response to changes in market demand.[305]

The first generation of stablecoins were developed as a bridge between crypto and fiat currencies, reducing the holder's exposure to price volatility during the cumbersome and often lengthy process of executing and settling transactions. Other stablecoins, including Tether, USD Coin, and Maker's Dai, have been developed with a view to leveraging the potential applications of "distributed ledger technology" and "smart contracts" in finance and other domains.[306] Increasingly, however, stablecoin sponsors have articulated even grander ambitions to fundamentally transform our systems of money and payments. By far the most high profile example is Facebook's Diem project, the stated mission of which is to create a portfolio of single-currency stablecoins that serve as "a simple global payment system and financial infrastructure that empowers billions of people."[307]

---

whether cryptocurrencies should be viewed as "token" or "account-based" systems, along with whether they must necessarily utilize distributed ledger technologies. This Article sidesteps these debates, instead observing that all cryptocurrencies rely on some form of digital ledger to execute and record transactions. *See* Sarah Allen, Srjan Čapkun, Ittay Eyal, Giulia Fanti, Bryan A. Ford, James Grimmelmann, Ari Juels, Kari Kostiainen, Sarah Meiklejohn, Andrew Miller, Eswar Prasad, Karl Wüst & Fan Zhang, *Design Choices for Central Bank Digital Currency: Policy and Technical Considerations* 7 (Nat'l Bureau of Econ. Rsch., Working Paper No. 27634, 2020), https://www.nber.org/papers/w27634 [https://perma.cc/MM9K-4FS9].

301. *See* ARNER ET AL., *supra* note 17, at 3.

302. *See* Jess Cheng, *How to Build a Stablecoin: Certainty, Finality, and Stability Through Commercial Law Principles*, 17 BERKELEY BUS. L.J. 320, 322 (2020).

303. *Id.*

304. *Id.*

305. *See* ARNER ET AL., *supra* note 17, at 6.

306. *Id.* at 2–4.

307. DIEM, WHITE PAPER 1 (2020), https://perma.cc/VJS3-Q4QR. However, Diem has more recently signaled its intention to perhaps scale back these ambitions, announcing both its decision to move its operations to the United States and its partnership with a licensed bank. *See* Nikhilesh De, *Facebook-Backed Diem Partners with Silvergate Bank to Issue US Dollar Stablecoin*, COINDESK (Aug. 24, 2021, 3:54 PM), https://www.coindesk.com/facebook-backed-diem-partners-with-silvergate-bank-to-issue-us-dollar-stablecoin [https://perma.cc/CBL9-UGB8].

The emergence of privately-issued stablecoins has coincided with—and possibly helped spur[308]—a flurry of announcements by governments and central banks that they are exploring the possibility of launching their own digital currencies.[309] In a sense, we have already encountered one variety of central bank digital currency (CBDC): the reserve balances held by banks within the Federal Reserve system.[310] What is new is the prospect of expanding access to these CBDCs to individuals, households, and businesses, and then enabling this wider audience to use CBDCs as a general unit of account, store of value, and means of payment.[311] Like stablecoins, these general-purpose CBDCs are still in their infancy and could theoretically vary across a number of important dimensions. Important and outstanding design questions include whether a CBDC should be held and transferred on a decentralized (or "distributed") ledger or a more traditional centralized book-entry system,[312] whether the digital wallets in which the public would hold CBDCs should be managed by the Federal Reserve or commercial banks,[313] and what level of security and privacy to offer CBDC users.[314] That these fundamental questions remain outstanding suggests that there is still no broad consensus around the definition of a CBDC or how they would work.[315] Nevertheless, as of December 2020, the Federal Reserve and a number of other leading central banks have announced that they are exploring the prospect of introducing some form of CBDC.[316] By the same token, the myriad of outstanding technical questions suggests that, for most jurisdictions, any potential rollout is still a long way off.

The debates surrounding the possible introduction of CBDCs have largely focused on their potential impact in the realm of monetary policy. Yet CBDCs

---

308. *See* Omarova, *supra* note 21, at 1250.

309. For an up-to-date list, see RAPHAEL AUER, GIULIO CORNELLI & JON FROST, BANK FOR INT'L SETTLEMENTS, RISE OF THE CENTRAL BANK DIGITAL CURRENCIES: DRIVERS, APPROACHES AND TECHNOLOGIES, at annex B (2020), https://www.bis.org/publ/work880.pdf [https://perma.cc/88UT-NGEX].

310. Although some would distinguish existing reserve balances from CBDCs, the fundamental principles of holding and transferring an account-based CBDC would essentially be identical to those of existing central bank reserve balances. For the view that CBDCs should be distinguished from central bank reserves, see Michael Kumhof & Clare Noone, *Central Bank Digital Currencies — Design Principles and Balance Sheet Implications* 8–14 (Bank of Eng., Working Paper No. 725, 2018), https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2018/central-bank-digital-currencies-design-principles-and-balance-sheet-implications [https://perma.cc/QW4K-84L2].

311. *See* Allen et al., *supra* note 300, at 5. Indeed, even this prospect is not so much "new" as it is "rediscovered." *See* James Tobin, *Financial Innovation and Deregulation in Perspective*, 3 BANK JAPAN MONETARY & ECON. STUD. 19, 25–26 (1985).

312. *See* Michael D. Bordo & Andrew T. Levin, *Central Bank Digital Currency and the Future of Monetary Policy* 6 (Nat'l Bureau of Econ. Rsch., Working Paper No. 23711, 2017), https://www.nber.org/papers/w23711 [https://perma.cc/K3DA-H5SX].

313. These wallets would serve as a CBDC user interface for the purposes of authenticating a user's identity and allowing them to view account balances and initiate transactions. *See* Allen et al., *supra* note 300, at 8.

314. *See id.* at 8–9.

315. *See id.* at 11.

316. *See* AUER ET AL., *supra* note 309, at 5–9.

have also featured prominently in a number of recent policy proposals designed to promote greater financial inclusion and "democratize" finance.[317] One proposal, advanced by Professors John Crawford, Lev Menand, and Morgan Ricks, calls for the creation of FedAccounts: giving individuals, households, and businesses the option to open an account at the Federal Reserve.[318] These FedAccounts would be linked to the conventional payment system, offering users the same transactional functionality as regular bank accounts. Along the same vein, Professor Robert Hockett has advocated for the creation of scalable public P2P payment platforms that would enable all legal residents of a jurisdiction to hold and transfer balances maintained by local, state, or national governments on a centralized inclusive value ledger.[319] Professor Saule Omarova, meanwhile, has articulated a far more ambitious vision.[320] First, unlike both the FedAccounts and inclusive value ledger proposals, Professor Omarova would completely eliminate bank deposit accounts and replace them with a general-purpose CBDC.[321] Second, Professor Omarova would combine this change to the *liability* side of the Federal Reserve's balance sheet with a fundamental overhaul of the *asset* side, including new facilities designed to replace deposit funding for banks, promote investment in public infrastructure, and stabilize financial markets.[322]

It is still far too early to predict which of these models, if any, might eventually rise to compete with or supplant our current bank-based system of money and payments. All of these models hold out potential benefits: whether they be faster and more secure payments, streamlining international payments, or expanding access to basic financial products and services. Yet each of these models also poses significant and unresolved regulatory challenges. As we have seen, SPPs such as PayPal expose customers to the risk that they will lose their money in the event of a platform's bankruptcy.[323] The sponsors of stablecoins may similarly fail to live up to their contractual and other promises. These risks are exacerbated by the fact that both SPPs and stablecoin sponsors face inevitable commercial pressures to invest customer funds in risky financial instruments, extend loans to related parties, or under-collateralize their outstanding obligations—thus further undermining the credibility of their commitments.[324] Compounding matters, existing rules often fail to address these challenges, potentially necessitating the creation of new, bespoke, and untested regulatory and supervisory frameworks.[325]

317. *See* Omarova, *supra* note 21, at 1249–50.

318. *See* Crawford et al., *supra* note 19, at 113.

319. *See* Hockett, *supra* note 20, at 1.

320. *See* Omarova, *supra* note 21, at 1234 (making a case for "challeng[ing] . . . the currently dysfunctional U.S. financial system by reimagining its fundamental structure").

321. *See id*. at 1257–68.

322. *See id*. at 1268–82.

323. *See* Awrey, *supra* note 8, at 1; Cheng, *supra* note 302, at 344–45.

324. *See* FROST ET AL., *supra* note 55, at 30–35; Awrey, *supra* note 8, at 1.

325. Further compounding matters, stablecoin ecosystems rely on multiple intermediaries performing different roles, which makes the regulation and supervision of this ecosystem difficult. *See* Cheng, *supra* note 302, at 323.

Collectively, these challenges put these models at a competitive disadvantage to conventional deposit-taking banks. Conversely, while CBDCs would effectively eliminate these challenges, they would do so at the potential expense of creating a government monopoly over money and payments. Thus, the tradeoffs between these different models effectively mirror our essential policy problem: forcing policymakers to make a false choice between competition and innovation versus financial and monetary stability.

C. A BLUEPRINT FOR REGULATORY REFORM

Fortunately, there is a better model—a blueprint grounded in the logic of unbundling itself. This logic reflects the fact that our current bundled system transforms money and payments into hostages, with their fate tied firmly to the mast of risks taken within the conventional banking system. To minimize the resulting threats to monetary and financial stability, we grant banks a financial safety net and exclusive access to basic financial infrastructure, while imposing a comprehensive and costly system of prudential regulation and supervision. Yet, as we have seen, these well-intentioned regulatory frameworks create significant barriers to entry, undermine financial innovation and inclusion, spur destabilizing regulatory arbitrage, and exacerbate the too-big-to-fail problem.[326] The value of unbundling therefore resides in its potential to sever this unstable relationship, enabling us to pursue policies that promote competition and innovation in the realm of money and payments *and* enhance the safety and soundness of the monetary and financial system.

This blueprint envisions three relatively straightforward changes to federal law. The first change is an amendment to Section 13(1) of the Federal Reserve Act that would enable financial institutions *other than banks* to open and maintain master accounts within the Federal Reserve System. This first change shares fundamental similarities with Tobias Adrian and Tommaso Mancini-Griffoli's recent proposal for a "synthetic" CBDC (or sCBDC).[327] As the authors of this proposal explain, granting non-bank financial institutions access to Federal Reserve master accounts would open the door to something resembling a public-private partnership, with financial institutions harnessing new technologies to provide customers with valuable new products and services and the Federal Reserve providing the basic infrastructure—the rails[328]—on which these products and services are provided.[329]

The second change reflects the potentially significant risks stemming from this proposed expansion of access to Federal Reserve master accounts. Specifically, in order to open and maintain a master account, a non-bank financial institution

326. *See supra* Part III.

327. *See* TOBIAS ADRIAN & TOMMASO MANCINI-GRIFFOLI, INT'L MONETARY FUND, THE RISE OF DIGITAL MONEY 12–15 (2019), https://www.imf.org/en/Publications/fintech-notes/Issues/2019/07/12/The-Rise-of-Digital-Money-47097 [https://perma.cc/DL7C-9XMM].

328. *See supra* Section III.A.

329. *See* ADRIAN & MANCINI-GRIFFOLI, *supra* note 327, at 12.

should be required to hold 100% of customer deposits in this account. Thus, for every dollar, pound, euro, or tether that these institutions accept on behalf of their customers, an equal amount, denominated in the same currency, must be immediately deposited into their master account. While this second change—what we might call a *no intermediation* rule—may seem extreme, it is certainly not without precedent. In Kenya, for example, Safaricom's highly successful M-Pesa requires that 100% of customer funds be placed in a bankruptcy remote trust.[330] In China, meanwhile, AliPay and WeChat Pay are both required to deposit customer funds into a "ring-fenced"[331] reserve account with the People's Bank of China.[332] And in the United States, James McAndrews and Lev Menand have advanced a functionally similar proposal designed to replace the heterogenous and inadequate state laws currently governing MSBs.[333]

Nor is the no intermediation rule a new idea. Its basic institutional structure bears a superficial resemblance to Irving's Fisher's "100% Money," the "Chicago Plan," and other so-called narrow banking proposals.[334] Yet, this version of the rule would differ in two important and related respects. First, in terms of the rule's scope, while narrow banking proposals specifically target conventional deposit-taking banks, this rule would effectively target SPPs: financial institutions *other than banks* that seek to provide money and payments. Second, in terms of its objectives, whereas narrow banking proposals have typically been concerned with the inflationary and other perceived evils of fractional reserve banking, this proposal is designed to strike a better balance between competition and financial stability *outside the conventional banking system*. More specifically, it is designed to address the potential moral hazard problems arising from the proposed expansion of the universe of financial institutions that are eligible to open Federal Reserve master accounts.

Perhaps more than any other element of this blueprint, the no intermediation rule reflects the unique logic of unbundling. If new financial institutions and platforms want to bundle lending with money and payments, then functionally speaking, there is no reason why they should not be regulated as banks. Indeed, if their objective is simply to *replicate* the business of banking—just without the pesky regulation—then it is difficult to understand what social benefits these new institutions could possibly yield. Simultaneously, if these new institutions and platforms simply seek to provide money and payments, then the no intermediation rule is little more than a peppercorn to pay in exchange for direct access to Fed

330. *See* Awrey & van Zwieten, *Mapping the SPP*, *supra* note 16, at 32–34.

331. *See id*. at 32. Ring-fencing in this context refers to each platform aggregating customer funds in a single, dedicated custodial account on the balance sheet of the People's Bank of China. The account does not pay interest to the platform or its customers.

332. *See id*. at 43–44.

333. *See* James McAndrews & Lev Menand, Shadow Digital Money 4 (Mar. 13, 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3554006 [https://perma.cc/PRW7-5KZ3].

334. *See* FISHER, *supra* note 24, at xi; SIMONS, *supra* note 24, at 14–16; FRIEDMAN, *supra* note 24, at 52–76.

master accounts and the broader U.S. payment network, the ability to reduce their reliance on conventional deposit-taking banks, and the opportunity to leverage new technologies to compete with banks on a level playing field.

Delivering on the logic of unbundling requires a third and long-overdue change to federal banking law: the definition of a bank itself. Under current law, this definition is based on a tautology. § 378(a)(2) defines a bank as engaged "in the business of receiving *deposits*."[335] Crucially, however, § 378(a)(2) does not define what constitutes a "deposit" for these purposes. For this definition we must look to § 1813(I)(1), which defines a "deposit" as "money or its equivalent received or held *by a bank*."[336] Under federal law, a bank is thus a firm that issues deposits, and deposits are financial instruments that are issued by a bank. This circular definition has created a glaring loophole that many new financial institutions and platforms have readily exploited. The third and final change would be to close this loophole by adopting a functional definition of a bank, along the lines proposed by Professor Morgan Ricks, as including any financial institution that combines lending with the creation of monetary liabilities.[337]

D. BENEFITS OF UNBUNDLING

This blueprint would yield several important benefits—both in comparison with the current bundled system and other models of unbundling.[338] First, it would promote greater competition and innovation in the fields of money and payments. The combination of the no intermediation rule and the requirement to hold 100% of customer funds in non-defaultable and completely liquid reserve balances would transform the monetary liabilities of non-bank payment platforms into good money, thus rendering them *true* functional substitutes for conventional bank deposits. Granting these platforms access to Federal Reserve master accounts would also remove a significant barrier in terms of their eligibility to become direct participants in the major clearing networks, enabling them to capture the economies of scale and network effects currently enjoyed only by member banks. By the same token, enabling these platforms to become full participants in the conventional payment system would mean that new entrants would not be forced to make the unpalatable choice between paying the extremely high initial and ongoing costs of building and maintaining their own payment networks or relying on banks—their principal competitors—for indirect access to the existing system. The credible prospect of cutting out banks as middlemen would also help eliminate the distortions created by the FDIC's brokered deposit rules. Some of the resulting cost savings could then be channeled into the

335. 12 U.S.C. § 378(a)(2) (emphasis added).

336. 12 U.S.C. § 1813(I)(1) (emphasis added).

337. For proposed statutory language, see RICKS, *supra* note 34, at 223–47.

338. This discussion brackets the potential benefits of unbundling in terms of the execution of monetary policy. For a discussion of these potential benefits, see ADRIAN & MANCINI-GRIFFOLI, *supra* note 327, at 13–14 and Omarova, *supra* note 21, at 1259–60. Notably, this blueprint could conceivably work in tandem with structural changes to the design of regulatory agencies of the variety proposed by Rory Van Loo. *See* Van Loo, *supra* note 5, at 269–78.

development of new, better, and less expensive products and services.[339] Faced with greater competition, banks would then be compelled to follow suit—further driving competition and innovation and potentially opening up basic banking and payment services to a wider universe of customers.

Ultimately, there are limits on the extent to which policymakers can rely on more competitive markets to promote greater financial innovation and inclusion. Indeed, there is no reason to think that PayPal, Circle, or Facebook will be any more interested in providing *unprofitable* products or services than incumbent banks. Crucially, however, this blueprint would not only help foster private competition, but also support state and local governments and civil society organizations hoping to implement proposals such as Professor Hockett's inclusive value ledger. At present, public and charitable sector organizations looking to launch a savings or payment platform would face a variety of obstacles. Perhaps most importantly, they would need to make significant investments in building and maintaining the technological and operational infrastructure necessary to create their own fast, safe, secure, and reliable platforms. Many of these investments would need to be made upfront—that is, before a platform was in a position to attract the critical mass of new users that would ultimately make these investments worthwhile. Compounding matters, there is the risk that too many organizations launching too many distributed value ledgers would lead to the fragmentation of the payment system, thus failing to capitalize on the significant economies of scale and network effects associated with money and payments, and forcing organizations to coordinate in the development of interoperable financial infrastructure. Viewed in this light, the ability of these organizations to open a Federal Reserve master account would represent an attractive turnkey solution: eliminating the need to make large, risky, and potentially duplicative infrastructure investments and instead enabling them to focus their attention and resources on designing financial products and services that meet the specific needs of their target constituents.[340]

Second, this blueprint would enhance the safety and stability of our monetary system.[341] The combination of the no intermediation rule and full collateralization of customer funds in a Federal Reserve master account would effectively eliminate the risk that a customer would lose their money in the event of a

339. Amongst the costs that would be eliminated are the fees and expenses associated with maintaining bank correspondent relationships, along with the strategic costs stemming from the reliance of platforms on banks for access to vital financial infrastructure.

340. In theory, assuming that an organization was not interested in making its platform interoperable, all the core functions of the platform could be undertaken within a single master account. Simultaneously, however, where an organization wanted to make its platform fully interoperable with other payment networks, it would have to comply with the membership requirements imposed by these networks.

341. The impact of this blueprint on the funding model of banks and specifically their vulnerability to runs is discussed in *supra* Section II.A.

platform's default or bankruptcy.[342] By removing credit risk from the equation, this blueprint would eliminate the incentives that might otherwise drive customers to engage in destabilizing runs. This would represent a vast improvement over many existing regulatory frameworks—including state MSB laws—which, as we have seen, do little to address the risk of institutional instability, let alone the wider risk that this instability might spill over into the conventional banking system. Simultaneously, by expanding the definition of a "deposit" for the purpose of federal banking law, this blueprint would help ensure that functionally equivalent products and services did not emerge just outside this expanded regulatory perimeter.

Eliminating the risk of destabilizing runs would yield another important benefit. As we have seen, reducing the probability and impact of runs is one of the principal rationales for extending a public financial safety net to conventional deposit-taking banks. Much of the rationale for sophisticated prudential regulation and supervision is then grounded in the desire to curb the resulting moral hazard problems generated by this safety net. By eliminating run risk, this blueprint would therefore remove the need for policymakers to functionally replicate this complex and costly system of backstops, regulation, and supervision in order to level the legal playing field for new entrants. To be clear, these institutions would still need to be supervised to ensure compliance with the no intermediation rule and that customer funds were deposited in a Federal Reserve master account. They would also be subject to existing conduct, consumer protection, and transaction reporting requirements, along with structural regulation designed to enforce the separation of banking from commerce.[343] Nevertheless, relative to the current state of affairs, this blueprint would enhance the safety and stability of the monetary system without requiring a significant increase in the scale or scope of the regulatory state.

This blueprint would be relatively easy for policymakers to implement. The basic institutional architecture—master accounts—already exists. Unlike CBDCs, there would therefore be no need to design and build entirely new technological and institutional infrastructure. Full collateralization of reserve balances, meanwhile, would mean that the Fed would not be exposed to the default of either SPPs or their customers. At the same time, this blueprint also poses relatively few policy risks. Perhaps most importantly, if this blueprint successfully promotes greater competition, the financial safety net will be there to soften any impact on conventional deposit-taking banks. And if this competition fails to materialize, we can continue to rely on banks as the dependable—if sometimes plodding—custodians of our current systems of money and payments.

---

342. As discussed in *supra* Section II.A, a process would also need to be put in place to ensure that customers had *immediate access* to their money in the event of a platform's bankruptcy.

343. Although beyond the scope of the Article because these new platforms would not be insured depository institutions, this blueprint would require technical amendments to federal banking law to ensure the continued separation of banking—in this more narrow, *unbundled* sense—from commerce.

Lastly, this blueprint would help ameliorate the too-big-to-fail problem. Under the current bundled system, restrictions on infrastructure access make the government, businesses, and households extremely reliant on a small handful of large banks to process the vast majority of payments. Likewise, SPPs such as PayPal rely on many of these same banks for indirect access to the conventional payment system. By expanding eligibility to open Federal Reserve master accounts, and opening the door to direct membership in the major clearing networks, this blueprint would help reduce our reliance on banks for the provision of this most basic of all financial services. At the same time, opening the door for SPPs to access the major clearing networks would minimize the distortions created by the FDIC's brokered deposit rules—thereby reducing the fragile and opaque interconnections between these platforms and the conventional banking system. The net effect would therefore be to reduce the probability that the failure of systemically important banks, or more generalized banking crises, would trigger either the widespread interruption of payments or broad-based contractions in the money supply. This, in turn, would serve to undercut two of the most common and theoretically compelling rationales that policymakers have historically advanced in support of taxpayer-funded bailouts.

Viewed collectively, the benefits of this blueprint reflect the comparative advantages of its key stakeholders. As a preliminary matter, leveling the legal playing field would enable private enterprises to compete on more equal terms. It would also enable new entrants to enter and potentially disrupt the market with new products and services without first having to make costly and potentially duplicative investments in building basic network infrastructure. By the same token, this blueprint would give state and local governments and civil society organizations much needed technological and operational support in filling the inevitable gaps that greater competition fails to address. And last but not least, this blueprint would leave the Federal Reserve to oversee and protect the stability of the financial and monetary system, and to coordinate the maintenance and periodic improvement of the basic infrastructure upon which this system is built.

E. POSSIBLE CHALLENGES AND OBJECTIONS

Like any blueprint, translating it into institutional structures in the real world will inevitably pose a range of practical challenges. One important threshold challenge would be determining whether this new framework should sit alongside or altogether replace the existing patchwork of state MSB laws and other regulatory frameworks such as New York's new "BitLicense" regime.[344] In theory, having multiple regulatory frameworks would promote greater competition and experimentation in regulatory design.[345] In practice, however, this experimentation has

344. *See* N.Y. COMP. CODES R. & REGS. tit. 23, § 200.1 (2021) ("[R]egulations relating to the conduct of business involving Virtual Currency . . . .").

345. For a flavor of the long running debate over the existence and value of regulatory competition in U.S. corporate law, compare ROBERTA ROMANO, THE GENIUS OF AMERICAN CORPORATE LAW 14–32 (1993), with Lucian Arye Bebchuk, *Federalism and the Corporation: The Desirable Limits on State*

often failed to materialize, in part because firms are often required to comply with the relevant regulatory frameworks in each state in which they carry on business. This dampens the incentives of regulatory authorities to experiment, while simultaneously increasing the temptation to free ride off the regulatory and supervisory frameworks imposed by other states.

Of course, even where regulatory competition did materialize, there is no guarantee that it would be socially desirable—especially when it comes to delivering public goods such as financial and monetary stability.[346] Indeed, one might predict that many, if not most, SPPs would prefer to remain subject to the fragmented but relatively lax state MSB laws that currently enable them to generate profits by investing customer funds in risky financial instruments. This frames an important challenge. The existing regulatory architecture in the United States effectively enables SPPs to have their cake and eat it too, permitting them to combine deposit-taking and financial intermediation without also subjecting them to the constraints of conventional bank regulation. The resulting prospect of regulatory arbitrage poses risks for customers, financial and monetary stability, and, ultimately, the success of the proposed blueprint. Specifically, in a world where registering as an MSB is still a possibility, many SPPs will prefer the flexibility of this option over the privileges of direct access to a Fed master account and the wider U.S. payment system combined with the constraints imposed by the no intermediation rule. What this suggests, however awkwardly, is that this blueprint would be most effective if pursued in combination with a strategy of federal preemption of state MSB laws.[347]

A second practical challenge would be to ensure that the customers of any SPP subject to this new regulatory framework had immediate access to their money in the event of its bankruptcy. Importantly, while this blueprint would effectively eliminate the vulnerability of SPPs to destabilizing runs, this would not foreclose the possibility that they might still be forced into bankruptcy stemming from losses in other parts of their business. To replicate FDIC deposit insurance, customers would therefore need to have timely and complete access to funds held in the platform's master account with the Federal Reserve. From a purely technical perspective, this would not be a difficult problem to solve—perhaps simply necessitating that firms be required to send customer balances and contact information to the Federal Reserve immediately upon any bankruptcy filing.[348]

Competition in Corporate Law, 105 HARV. L. REV. 1435, 1444–48 (1992). Ultimately, however, this debate has limited traction in an environment where firms are required to comply with laws and regulations in each state in which they do business.

346. *See* ARMOUR ET AL., *supra* note 27, at 59 (describing public goods such as financial stability and why private markets will often underproduce them).

347. Perhaps the most expedient way to achieve this, especially for large and established SPPs such as PayPal, would be for the Financial Stability Oversight Council to designate them as systemically important financial market utilities, thus subjecting them to consolidated prudential regulation and supervision by the Federal Reserve.

348. In theory, this could also be combined with resolution tools—for example, compulsory sale, write-down, conversion, repudiation, purchase and assumption, or bridge banks—similar to those currently used by the FDIC in the context of conventional bank failures.

Nevertheless, these and other technical challenges would need to be addressed in order to ensure full substitutability with conventional bank deposits and instill consumer confidence in these new platforms.

This blueprint will also undoubtedly attract several, seemingly more substantive, objections. The first is that the no intermediation rule would deprive SPPs of an important source of revenue—namely, the returns generated by investing customer funds—necessary for them to monetize their investments in the development of new financial products and services. This objection is uncompelling for several reasons. First, it is worth observing that the Federal Reserve currently pays highly competitive rates of interest on the reserve balances held in its master accounts.[349] Second, the application of new financial technologies by these platforms opens the door to a wide range of new revenue sources, including enhancements to the customer experience, the development of application programming interfaces, and the collection and analysis of financial and other data generated from customer holdings and payment flows.[350] Third, access to Fed master accounts and the wider U.S. payment system will inevitably defray at least some of the infrastructure investment that would otherwise be necessary to build, maintain, and expand their own payment network. Lastly, and most fundamentally, if the business model of these firms relies heavily on revenues from investing—that is, from *bundling* banking, money, and payments—then there is no functional reason why we should not regulate them as conventional deposit-taking banks.

A second substantive objection is that subjecting banks to greater competition would undermine the stability of the conventional banking system.[351] There are essentially two variants of this objection. The first is that greater competition would slowly siphon deposits away from banks, including the wholesale deposit funding currently provided by SPPs via their correspondent relationships.[352] The second is that the existence of truly credible substitutes for bank deposits would further incentivize depositors to run from banks during periods of institutional or broader financial instability.[353] These concerns are valid but overstated. Nothing in this blueprint would stop banks from competing for deposits by offering higher interest rates, better products and services, or offering these products and services

349. *Compare Interest Rate on Required Reserves (IORR)*, *supra* note 172, *with Standout Online Savings Accounts*, NERDWALLET, https://perma.cc/55TB-9TLM (listing interest currently payable on savings and checking account balances with major banks). Simultaneously, there are also potentially compelling policy reasons why it might not be desirable to extend the current IORR and IOER frameworks to SPPs. While beyond the scope of this Article, this question, together with the reserve interest framework for SPPs, would need to be addressed in connection with the implementation of the blueprint.

350. For an overview of some of these potential revenue sources, see Zac Townsend, *Scanning the Fintech Landscape: 10 Disruptive Models*, MCKINSEY & CO. (May 8, 2019), https://www.mckinsey.com/industries/financial-services/our-insights/banking-matters/scanning-the-fintech-landscape# [https://perma.cc/6N5X-ESR4]. Platforms such as Wise can also generate revenue through foreign exchange spreads.

351. *See Free Exchange: The Disintermediation Dilemma*, ECONOMIST, Dec. 5, 2020, at 74, 74.

352. *See id.*

353. *See id.*

to a wider universe of customers.[354] Indeed, this is precisely the type of consumer welfare enhancing competition that this blueprint is designed to promote. Nor, importantly, does this blueprint do anything to undermine the existing financial safety net. As we have seen, this safety net exists to promote confidence in banks, prevent destabilizing runs, and protect depositors when illiquid banks cross over the threshold into insolvency.[355] Viewed from this perspective, this safety net puts the conventional banking system in a far better position to undergo a competitive restructuring than just about any other industry.

A third objection is that shifting savings out of the conventional banking system, combined with the no intermediation rule, would decrease the amount of capital available for investment in the real economy. While this objection is not without merit, it rests on two contestable assumptions. The first assumption—grounded in the classical "intermediation" view of banking—is that banks need deposits in order to make loans and other investments.[356] The obvious problem with this view is that it fails to incorporate the important role that banks play in money creation.[357] Specifically, while deposits can certainly be transformed into loans, *new loans also create new deposits*. As a result, while bank capital and liquidity requirements can impose meaningful constraints on bank intermediation, new deposits are not strictly necessary as the "raw material" for the issuance of new loans. This is not to suggest that unbundling would not have any impact on intermediation. Ultimately, we should expect any significant decrease in aggregate demand for bank deposits to eventually be reflected in a decrease in the supply of new bank loans. What it does suggest, however, is that the classical intermediation view tends to overstate this risk—especially in a world, as presently exists, characterized by ample reserves within the conventional banking system.

The second assumption is that the customer funds deposited with the Federal Reserve would be somehow immobilized and incapable of being used to finance productive investments. Crucially, however, the core legal and institutional machinery already exists to channel these funds back into the financial system and real economy. The most important piece of this machinery is the Federal Reserve's discount window. While at present the discount window is almost universally viewed as part of the Fed's "lender of last resort" framework—for use only in the most dire of emergencies—there is little practical reason why it could not be repurposed to provide short-term financing for banks under normal market conditions.[358] Thus, for example, a bank could use its existing loans and other assets as collateral for a discount window loan, the proceeds of which it could

354. *See* ADRIAN & MANCINI-GRIFFOLI, *supra* note 327, at 13. The one possible concern here is that banks will offer interest rates on deposits that compel them to take on higher investment risks. However, federal banking regulators already possess the regulatory and supervisory tools to address these risks.

355. *See supra* Section II.A.

356. *See, e.g.*, N. GREGORY MANKIW, PRINCIPLES OF MACROECONOMICS 262 (6th ed. 2011).

357. *See* McLeay et al., *supra* note 291.

358. For an example of just such a proposal, see Omarova, *supra* note 21, at 1270–71.

then use to make new investments. This discount window lending would replace any lost deposit funding—with the additional benefit that it would not leave banks vulnerable to destabilizing runs.

The final objection stems from the prospect that granting SPPs access to Fed master accounts—and with them the opportunity to leverage existing economies of scale and network effects within the U.S. payment system—will eventually lead to the emergence of a new breed of dominant financial institutions and platforms. Once again, this is an important and legitimate concern. Indeed, there is already a strong case for more robust enforcement of antitrust laws in many parts of the financial services industry.[359] Yet this prospect also demonstrates why institutionally neutral access to core financial infrastructure is so important. Over the long term, one of the most effective ways to prevent inefficient concentrations of market power is to remove structural barriers to competition, thereby reducing the costs of entry, promoting the emergence of new business models and technologies, and using the resulting threat of competition to constrain the monopolistic impulses of incumbent firms.[360] Accordingly, while this blueprint is by no means sufficient to forever solve problems of market power in finance, it is arguably necessary to ensure the longer-term dynamic efficiency of our intertwined systems of money and payments.

These challenges and objections need to be taken seriously. At the same time, none of them is unresolvable, and many reflect the narrow thinking that is the product of centuries of institutional path dependence. This grounds one final point: unbundling banking, money, and payments will not only require changes to our laws and institutions. It will also require changes in our thinking about the functions of finance, about how the law and regulation can support and impede these functions, and, ultimately, about the universe of available options for building a faster, better, and stronger financial system.

359. For a more detailed discussion of the current interplay between antitrust law and financial regulation in the United States, see Samuel N. Weinstein, *Financial Regulation in the (Receding) Shadow of Antitrust*, 91 TEMP. L. REV. 447, 453 (2019). For an exploration of some of the potential antitrust issues in financial regulation, see, for example, Felix B. Chang, *Financial Market Bottlenecks and the "Openness" Mandate*, 23 GEO. MASON L. REV. 69, 72–73 (2015) and Van Loo, *supra* note 5, at 234–36.

360. *See* MKT. STRUCTURE & ANTITRUST SUBCOMM., COMM. FOR THE STUDY OF DIGIT. PLATFORMS, REPORT 79 (drft. 2019), https://www.judiciary.senate.gov/imo/media/doc/market-structure-report%20-15-may-2019.pdf [https://perma.cc/2CYL-LGTP]. *See generally* Jerrold Nadler & David N. Ciciline, SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. COMM. ON THE JUDICIARY, INVESTIGATION OF COMPETITION IN DIGITAL MARKETS: MAJORITY STAFF REPORT AND RECOMMENDATIONS (2020), https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf?utm_campaign=4493-519 [https://perma.cc/33CP-GWYQ] (suggesting ways to reduce monopolistic forces in the digital markets).

CONCLUSION

Writing in 1985, economist and Nobel Laureate James Tobin observed:

> The basic dilemma is this: Our monetary and banking institutions have evolved in a way that entangles competition among financial intermediary firms with the provision of transactions media. The entanglement is the source of risks of default and breakdown. Protection against those risks has brought the government interventions now seen to have inefficient by-products: bureaucratic surveillance, deposit insurance, lender-of-last-resort guarantees by central banks. There is no possible complete resolution of this dilemma, but we may hope to limit its scope.[361]

Tobin could not have predicted the sweeping technological and other changes that would revolutionize finance over the next four decades. Yet as this observation makes clear, these developments present challenges that are almost as old as banking itself. This Article has framed these challenges as a product of the historical bundling of banking, money, and payments. Ultimately, it is this bundling that creates the need for a public financial safety net and sophisticated prudential regulation, thus erecting significant barriers to entry, undermining financial innovation and inclusion, spurring destabilizing regulatory arbitrage, and exacerbating the too-big-to-fail problem. This Article has articulated a blueprint for how we can harness new technological developments to safely unbundle these functions: striking an effective balance between competition and financial stability. Like the Babylonians and goldsmiths before us, we have an opportunity to build a better, faster, safer, and more inclusive financial system. While it may not completely resolve Tobin's dilemma, unbundling banking, money, and payments is the first step in this direction.

361. Tobin, *supra* note 311, at 20–21.