**The Case Against Bank****s and the Case For Banks**

Jonathan R. Macey

Sam Harris Professor of Corporate Law, Corporate Finance and Securities Law, Yale Law School

“Here we go again. The Federal government is bailing out the banking industry, and the American people, who have seen this show far too often, have every right to be furious.” The New York Times, March 14, 2023

“The disconcerting truth about banking business: in good times, it is run for private profit by private firms but, in bad times, it becomes a direct public responsibility and a public expense.” Saule Omarova, Public Banking as an Institutional Design Challenge, forthcoming, forthcoming, Yale J. Reg. 2024

“The vulnerability of highly leveraged financial institutions engaging in maturity transformation to shocks that create systemic risk, and the deleterious economic aftereffects of financial crises lasting far longer than downturns of the business cycle are sources of utmost public policy concern.” Roberta Romano, Are There Empirical Foundations for the Iron Law of Financial Regulation?, American Law & Economics Review, *forthcoming* 2024

*Abstract*

*Banks, which are businesses that simultaneously make loans and take deposits that are available to customers on demand, are inherently unstable. The instability exists because the mismatch in the (long-term) maturity of banks’ assets and the (short term) maturity of their liabilities makes them susceptible to runs and panics that destabilize the economy and require bailouts on a regular basis. As such, banks essentially hold society hostage. They must be continuously propped up by government to prevent them from collapsing and bringing the rest of the economy down with them.*

*There is a strong need for the transaction-account services provided by banks, and there is a strong need for the loans provided by banks. The issue why it is necessary to combine lending and deposit taking, within a single firm, rather than have them supplied by separate firms, such as commercial lending companies and money market mutual funds has received surprisingly little attention. The main arguments in favor of banks are that economies of scope can be achieved by combining lending and deposit taking. For example, by offering checking accounts to borrowers, banks obtain private information about these borrowers that is not available to rival, non-bank lenders. This private information from depositors is thought to made banks unusually efficient as lenders.*

*In this Article I first argue that improvements in technology and information retrieval and sharing have reduced or eliminated the traditional efficiency justification for combining deposit-taking and lending. At the same time, other improvements in technology have made banks even more fragile by making it easier for depositors to trigger runs by withdrawing their funds electronically.*

*Previous scholars have argued for “narrow banks” that would unbundle the provision of lending and deposit-taking. Here I observe that these scholars do not consider the rationales offered by financial economists to explain why these activities are combined. They ignore the sparse but important literature in economics and finance that models how combining lending and deposit taking generates efficiencies in the form of synergies. Thus, these scholars focus on the costs of combining lending and deposit taking without considering the benefits.*

*While the scholars who argue for narrow banks ignore the beneficial efficiencies associated with combining lending and deposit taking, the financial economists who argue that combining lending and deposit taking is efficient ignore the harmful costs associated with combining these two functions. In particular, combining lending and deposit taking makes banks unstable, requires massive regulation to deal with that instability, and causes periodic runs and panics. This Article concludes that when the costs associated with combining lending and deposit taking are properly considered, the arguments that traditional banking is efficient appear highly doubtful.*

**Table of Contents**

[***Abstract 2***](#_Toc161174420)

[***I. Introduction 4***](#_Toc161174421)

[***II. What is Banking and Why is it Inherently Unstable? 5***](#_Toc161174422)

[***III. The Economic Rationales for Combining Lending and Deposit Taking 10***](#_Toc161174423)

[***IV. What is Left of the Argument that Combining lending and Deposit Taking is Efficient? 38***](#_Toc161174424)

[***V. Conclusion 45***](#_Toc161174425)

I. Introduction

Banking combines deposit taking and lending. Surprisingly, the rich theoretical and empirical literature in finance has “with few exceptions not addressed a fundamental question: why is it important that *one institution carry out both functions under the same roof?*”[[1]](#footnote-1) In the absence of an explanation for why lending and deposit taking are combined, one is left wondering whether the banking industry exists as it does today is a result of distortions caused by regulation, and whether the traditional form in which banks are organized remains a socially desirable and efficient organizational structure.

This inquiry seems important because banks receive copious government subsidies and bailouts.[[2]](#footnote-2) Such subsidies and bailouts are necessary because combining lending and deposit taking makes for a very risky way to organize a business.

The most conspicuous form of government support for banks comes in the form of deposit insurance, which, from the point of view of the banks whose depositors are protected by such insurance, serves as a form of credit enhancement that enables banks whose deposits are insured to fund their loans and other assets at rates far lower than their non-bank competitors. Outright bailouts of banks are very common. Other subsidies take the form of access to the Federal Reserve’s discount window, direct access to the Federal Reserve’s payment system,[[3]](#footnote-3) and access to cheap loans from Federal Home Loan Banks.[[4]](#footnote-4) And, it seems, the bigger the bank, the bigger the subsidy, as banks considered “too big to fail” not only borrow at lower rates of interest, but they also take bigger risks.[[5]](#footnote-5)

 The subsidies and bailouts of banks can be viewed as a form of industrial policy, as industrial policy is defined as any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity of particular sectors, technologies, or tasks.[[6]](#footnote-6) In fact the global subsidies and bailouts of banks combine to make the banking industry and banks arguably the greatest beneficiaries of industrial policy in history.

The subsidies and bailouts routinely provided to banks make it impossible to know whether banks as we know them today would exist in the absence of such subsidies. Simply put, these subsidies and bailouts prevent the critical process of “Creative Destruction” from working in the banking industry to weed out obsolete ways of doing business in order to make way for newer ones.[[7]](#footnote-7) For all we know, banking might well be an obsolete industry without people really being aware of its obsolescence.

The central insight offered in this Article is that there is a strong argument to be made that banks are, in fact, obsolete. The argument that banks are obsolete is based on the simple premise that as markets and technology have evolved over the past several decades, close substitutes for banks have emerged that provide services to bank customers that are likely superior to the services provided by banks. These subsidies and bailouts that are routinely and predictably provided to banks have prevented these alternatives services from competing with banks on a level playing field.

In the following section of this Article I explain what banking is and why it is inherently unstable. I then provide a brief history of bank bailouts and argue that such bailouts are inevitable. Then, turning to the main arguments in the paper, in the following two sections I survey the economic rationales for banks and then show that close substitutes for banks have emerged that bring into serious doubt the notion that the banking industry remains economically relevant. In light of the emergence of close substitutes for the deposit-taking and lending functions of banks, I propose that deposit insurance be fully and competitively priced and that the historical system of multiple liability for bank shareholders be reintroduced.

II. What is Banking and Why is it Inherently Unstable?

The term “bank” refers to firms that simultaneously take deposits and make loans.[[8]](#footnote-8) The simultaneous provision of liquidity services to lender/depositors in the form of transaction accounts that provide clients with immediate access to their deposited funds and lending services, which involve assessing credit risk and funding and monitoring investment projects,[[9]](#footnote-9) is unusual. Generally speaking, businesses attempt to match the term (maturity) structure of their assets and liabilities,[[10]](#footnote-10) but banks do not do this.

Matching the maturity structure of assets and liabilities would seem to be a matter of simple logic. After all, if one is borrowing money to finance a project that is not expected to generate revenues for 18 months, it hardly makes sense for the borrower to pledge to repay the loan immediately, before there are any funds available to repay the loan. Similarly, if someone is lending money to a business, it does not seem sensible to expect repayment on demand if one knows that the money is being used to buy assets that cannot be sold immediately on terms that will generate sufficient funds to repay the loan.

Another distinct, but related feature of banks that is quite unusual is that the liquidity of their assets and liabilities are highly asymmetrical. Banks assets are highly illiquid, while bank deposits are highly liquid. Bank’s liabilities are predominantly in the form of deposits that are available to depositors on demand. In other words, deposits are the equivalent of cash. The Federal Reserve Bank of New York recently estimated that “deposits make up roughly 80 percent of bank liabilities.” Moreover, “[t]he bulk of deposits are demand deposits, available for withdrawal without notice. This suggests that deposits are a short-maturity, floating-rate liability.”[[11]](#footnote-11) In contrast, over 44 percent of the assets of U.S. commercial banks is in the form of loans.[[12]](#footnote-12) Unlike deposits, loans are highly illiquid. There is no ready secondary market for most commercial loans, and they are considered financially opaque in the sense that it is difficult to estimate their value. As Kayshap, Rajan and Stein point out, “[l]ending involves acquiring costly information about opaque borrowers, and extending credit based on that information.”[[13]](#footnote-13) This means that banks’ balance sheets often are dominated by assets that cannot be readily sold at a price close to their fair market value as estimated by a discounted cash flow analysis.

A third unusual feature of banks is that they are very thinly capitalized relative to other sorts of firms, where capitalization is defined as the amount of equity relative to debt. Specifically, “banks tend to have very little equity relative to other firms. Although it is not uncommon for typical manufacturing firms to finance themselves with more equity than debt, banks typically receive 90 percent or more of their funding from debt.”[[14]](#footnote-14)

These odd features of banks’ balance sheets are easy to explain. The way that banks generate profits is by obtaining a return on their loan portfolios that is sufficient to cover their costs, including the costs of managing and maintaining the liabilities, particularly their customers’ deposit accounts, along with their other borrowing. Generally speaking, interest rates on borrowing increases with the maturity of such borrowing. Borrowers of funds that mature in the near term pay lower rates of interest than borrowers of funds that mature in the distant future.

A yield curve is a graphical depiction of the relationship between short-term interest rates and long-term interest rates. Typically, though not always, the yield curve is positively sloped.[[15]](#footnote-15) Because banks can borrow money at (generally) lower short term rates of interest, and lend money at (generally) higher long term rates of interest, they profit from the positive slope of the yield curve. As market conditions cause the slope of the yield curve to steepen, banks’ profits increase.[[16]](#footnote-16)

Similarly, the ability of banks to offer depositors instant liquidity for their deposits lowers banks’ costs of borrowing, while banks can demand higher interest rates from borrowers for funding illiquid assets. And of course the government guarantees associated with deposit insurance are an additional important source of profitability

For banks, one of the costs of doing business is the necessity of keeping sufficient funds on hand to cover the expected liquidity needs of their customers. The more reserves banks have to keep on hand to meet their demands for cash from their customers, the lower their expected profits will be.

These fundamental characteristics of banks render them inherently unstable, and essentially unworkable in the absence of government-sponsored deposit insurance: “Deposit insurance, created during the Great Depression in 1933, has sharply reduced the frequency of bank runs that once were common in the U.S. … [A]bout 40% of all U.S. banks disappeared between 1929 and 1933: ‘They failed, closed, or were absorbed by other banks. That happened because there were massive runs, bank runs, where people lost confidence in the banks and pulled out their money…The ones that were closed couldn’t make loans, obviously, and the ones that survived became extremely cautious being very reluctant to make loans.”[[17]](#footnote-17)

A critical skill for bankers is estimating how much cash and high-quality liquid assets to keep in reserve to meet customers’ liquidity demands. Just as insurance companies must make probability estimates of the number and magnitude of insured events that will occur during any particular time frame, so too must banks make probability estimates of the number and size of withdrawals that will occur during any particular time period, so that they can have enough cash on hand to meet those needs. As in the insurance industry, the key to survival in the banking industry is ensuring that depositors’ demands for funds are uncorrelated.

The business of banking thus involves a sort of financial alchemy in the form of maturity transformation and liquidity transformation. Maturity transformation refers to the process of utilizing short-term funds to finance longer-term assets. Liquidity transformation is a closely related concept that describes the use of liquid, cash-like liabilities to buy illiquid assets.

Thus, three characteristics combine to make banks inherently risky businesses. First, they issue liabilities that are due on demand and use the money they receive from those loans to fund long-term assets. Second, they fund illiquid assets with illiquid liabilities. Finally, banks are risky because they have relatively little capital (equity) with which to absorb losses and prevent them from exposing their creditors to losses.

These characteristics of banks mean that banks are inherently unstable. The primary source of this instability is the game-theoretic collective action problem facing bank depositors. Depositors are well aware of the fact that as a group it is impossible for them to obtain repayment of their deposits simultaneously for the simple reason that if all depositors ask for their funds back at the same time, the bank will not have enough money on reserve to repay them. Too many requests for repayment by depositors likely will require the bank “to take value-reducing actions such as liquidating commercial loans at distress prices or calling loans prematurely.”[[18]](#footnote-18) The collective action problem takes the form of a prisoner’s dilemma in which “everyone rushes in to withdraw their deposits before the bank gives out all of its assets.”[[19]](#footnote-19)

Because it is far cheaper for bank depositors simply to withdraw their funds from their bank rather than investigate the quality of their bank’s assets, rational uninsured depositors will quickly withdraw their money from banks on the slightest hint of a problem. For this reason, banks runs that cause the failure of an entirely solvent bank can easily occur.

The inherent riskiness of banks would not be particularly concerning if the costs of bank failure were borne solely by bank creditors. But of course, that is not the case. Bank failures impose massive costs on society. As Saule Omarova trenchantly has observed, every banking crisis, even small “mini crises” exposes “the disconcerting truth about banking business: in good times, it is run for private profit by private firms but, in bad times, it becomes a direct public responsibility and a public expense.” [[20]](#footnote-20) Moreover, bank failures impose macroeconomic shocks on the financial system as a whole. As Diamond and Dybvig famously have observed:

Bank runs are a common feature of the extreme crises that have played a prominent role in monetary history. During a bank run, depositors rush to withdraw their deposits because they expect the bank to fail. In fact, the sudden withdrawals can force the bank to liquidate many of its assets at a loss and to fail. In a panic with many bank failures, there is a disruption of the monetary system and a reduction in production.[[21]](#footnote-21)

Diamond and Dybvig’s formal model showed that deposit insurance is likely the logical and inevitable regulatory mechanism for mitigating the social costs imposed by the combination of illiquid assets and liquid liabilities that characterize banks.[[22]](#footnote-22) The policy justification for government-sponsored deposit insurance programs is based on the premise that the capital structure of banks is worth defending and protecting even at great cost.

A fundamental conundrum in finance that has not been adequately addressed in the literature is why a single institution simultaneously conducts both lending and deposit taking in light of the inherent instability caused by doing so.[[23]](#footnote-23) As Kayshap, Rajan and Stein observe, it is far from clear why loans should not be funded with debt rather than demand deposits, or why demand deposits cannot be backed by liquid securities like high grade commercial paper and T-bills, rather than with loans.[[24]](#footnote-24)

The following section of this Article reviews and critiques the existing economic justifications for combining deposit-taking and lending in a single firm and argues that these justifications have not withstood the test of time. Market innovations and improvements in information technology have obviated traditional justifications for combining lending and deposit taking under one roof. In the absence of an efficiency explanation for banks, one is left to conclude that the traditional commercial bank continues to exist because of a vestigial industrial policy that props banks up by bailing their lenders (depositors) out when they fail, and by enabling banks to fund themselves at below-market rates through the provision of federally-subsidized deposit insurance.

III. The Economic Rationales for Combining Lending and Deposit Taking

Scholars have justified combining lending and deposit-taking on the grounds that banks can achieve economies of scope by doing so. Economies of scope (as a distinct from economies of scale) exist when cost savings can be achieved by combining two or more products or services in one firm rather than producing them separately.[[25]](#footnote-25)

The economies of scope associated with combining lending and deposit-taking derive from three sources. First, it is argued that banks obtain valuable “inside information” in their role as administrators of their borrowers’ depository accounts, and this inside information makes them superior lenders.[[26]](#footnote-26) Second, it is argued that, while bank deposits are a very cheap source of funding for banks, they are not as risky as they appear to be because bank deposits are “sticky” in the sense that, while depositors have the contractual right to withdraw their funds on demand, in fact they tend to leave their money in banks for long period of times. In addition, it is thought that banks can successfully predict when depositors will withdraw their funds, enabling them to plan accordingly. The stickiness and predictability of deposits is thought to make banking safer than it appears to be.

Finally, and perhaps most importantly, the combination of lending and deposit taking is thought to be efficient because it is efficient to combine deposit-taking with “contingency lending.” Contingency lending consists of a promise to provide financing to a borrower at some future date or for some specified period of time. Lines of credit and loan commitments are examples of contingency lending. Kashap, Rajan and Stein defend the combination of lending and deposit taking as efficient because there are synergies between the two activities to the extent that there is an imperfect correlation between the liquidity demands of depositors and the liquidity demands of borrowers with lines of credits or loan commitments from banks.[[27]](#footnote-27)

The argument that the strange structure of banks’ balance sheets survives only because of the existence of the regulatory safety net must confront the fact that banks made loans backed by demand deposits long before there was government safety net. In fact, banks’ funded medium and long-term loans with demand deposits long before deposit insurance. As Mark Flannery has observed, “[b]anking trade publications from the early 1930’s contain numerous references to bank liquidity risks, including the assertion that “Every commercial banker knows that his deposits can and may be withdrawn at any time.”[[28]](#footnote-28) In fact, outside of the U.S., banking remained “essentially unregulated” in various parts of the world until at least the mid-1960s.[[29]](#footnote-29)

The fact that banks survived without bailouts and subsidies prior to the New Deal would support the proposition that they combining lending and deposit-taking is efficient except for the fact that, prior to regulation and bailouts banking panics were regular events in which “even solvent banks could not [meet] the demands of depositors trying to withdraw funds at one time.”[[30]](#footnote-30) Banking panics, in other words, are a “nearly universal experience”[[31]](#footnote-31) in countries with banks, and the recurring incidence of banking panics “has led many governments to regulate the banking industry.”[[32]](#footnote-32)

In other words, the argument that combining lending and deposit-taking is no longer efficient does not mean that combining lending and deposit-taking was never efficient. In the context, however, describing the pre-New Deal banking system as “efficient” means only that it was better than the next best alternative at the time. And the world today is vastly different than it was 100 years ago.

Not only did banking failures and panics cause substantial economic dislocation prior to the introduction of deposit insurance, it also is significant that prior to the implementation of deposit insurance, depositors gained protection of their funds by requiring banks to operate under a system of multiple liability. Legal regimes imposing multiple liability required bank shareholders to pledge to contribute additional funds beyond the amount of their initial investments to meet their banks’ obligations to depositors in the case of insolvency.[[33]](#footnote-33)

Significantly, arguments about the historical efficiency of combining lending and deposit taking have focused on the positive effects of depositor monitoring in reducing agency costs by disciplining bank managers. For example, Charles Calomoris and Charles Kahn posit that where “demandable debt (deposits) has an important advantage as part of an incentive scheme for disciplining the banker” who makes loan decisions.[[34]](#footnote-34) On this view, demandable debt enables and incentivizes depositors to monitor their bankers’ loan decisions because depositors can “vote with their feet” by withdrawing their funds.[[35]](#footnote-35) And because depositors are repaid on a “first-come, first-served basis,” depositors who monitor are rewarded by obtaining access to their deposits, while those who don’t risk losing out.[[36]](#footnote-36) Those depositors who do not monitor receive benefits from depositors who do monitor because “the active monitors keep the banker in line and thereby provide a benefit to the passive depositors.”[[37]](#footnote-37) The bankers benefit because the monitoring by depositors who are allowed access to their funds on demand allows them to make a credible commitment that they will not abscond with depositors’ funds.[[38]](#footnote-38)

Of course, in a world of deposit insurance,[[39]](#footnote-39) depositors lack incentives to monitor the quality of the loans and other assets that banks invest in with their money. In a world of deposit insurance, we must look for explanations other than depositor discipline to explain why banks combine lending and deposit taking. As Calomoris and Kahn themselves recognize, “where … deposit insurance makes depositor monitoring less important, demandable debt may persist simply as an artifact of regulation.”[[40]](#footnote-40)

Thus, while it is true that banks combined deposit taking and lending for eons before deposit insurance came on the scene, the cost was that banks placed financial systems in a constant state of peril. The constant danger of bank runs and bank collapse “led to a search or mechanisms capable of protecting banks from liquidity shocks induced by deposit runs. Diamond and Dybvig (1986) showed that deposit insurance could offer banks such a protection while still affording them the opportunity to provide liquidity services to depositors.”[[41]](#footnote-41) In other words, the traditional thinking is that banking is a necessary evil, and that deposit insurance is required in order to mitigate the social costs of having a banking system.[[42]](#footnote-42)

The following section of this Essay explores the reasons why it is necessary to combine lending and deposit-taking.

1. The ‘Checking Account’ Hypothesis

Another issue that has received far too little attention in the legal academy is the extent to which theories about credit markets and banking “have centered on information and information flows.”[[43]](#footnote-43) The “fundamental proposition of this theory, which was developed by Fisher Black and elaborated on by Eugene Fama, is that information is crucial to bankers both in determining risk premiums which set the price of credit, and in collecting loans, ensuring that lenders are repaid as much as possible within the terms of the contract.”[[44]](#footnote-44) The implication of the theory, of course, is that the lenders with the best information will perform better and thus out-compete rivals with inferior access to timely, high quality information.

According to this theory, banks succeed because the “asymmetric information,” i.e. information that banks have that their rivals do not have, gives them a competitive advantage. The hypothesis that banks have informational advantages, “has been the foundation of modern theories of commercial banking that justify the ‘special’ character of banks and the unique regulatory treatment that banks receive.[[45]](#footnote-45)

In a nutshell, then, the economic theory of banking as presented in the standard models, is that “banks act on behalf of depositors to monitor borrowers, a role known as delegated monitoring.”[[46]](#footnote-46) The theory, was first articulated by Fisher Black and later advanced by Eugene Fama, who pointed out that banks have a cost advantage over non-banks because their borrowers are also depositors:

Banks have a cost advantage in making loans to depositors. The ongoing history of a borrower as a depositor *provides information that allows a bank to identify the risks to loans to depositors and to monitor the loans at lower cost than other (non-bank) lenders*. The inside information provided by the ongoing history of a bank deposit is especially valuable for making and monitoring the repeating short-term loans (rollovers) typically offered by banks. Information from an ongoing deposit history also has special value when the borrower is a small organization (or individual) that does not find it economical to generate the range of publicly available information needed to finance with outside debt or equity.

Two facts tend to support these arguments. First, banks usually require that borrowers maintain deposits (often called compensating balances). Second, banks are the dominant suppliers of short-term inside debt. The inside debt or private placements offered by insurance and finance companies (which do not have the monitoring information provided by ongoing deposit histories) are usually much longer-term than bank loans.[[47]](#footnote-47)

The observation that banks obtain information from their borrowers’ checking accounts that enhances their ability to make and monitor their commercial loans has been dubbed the “checking account hypothesis.”[[48]](#footnote-48) The core claim is that banks have a competitive advantage over nonbanks as commercial lenders because of their privileged access to the information that can be derived from observing the ebbs and flows of money in and out of customers’ checking accounts.[[49]](#footnote-49) However there is reason to doubt the continued validity of the checking hypothesis, arguing that improvements in technology have made it possible for non-bank lenders to access the same high quality information that traditionally has only been available through checking accounts.[[50]](#footnote-50)

The idea that the information in checking accounts is useful to banks in their role as lenders is predicated on the fundamental principal that “[i]n the world of finance, the most precious commodity is *information*.”[[51]](#footnote-51) The “golden rule of conventional finance” is that “the party that can obtain and control the flow of information ultimately gets the gold.”[[52]](#footnote-52) The checking account hypothesis provides the justification for allowing depository institutions to make risky loans.

As Alan Greenspan observed:

The heart of financial intermediation is the ability to obtain and use information. The high cost of gathering and using facts in the past meant that banks and other intermediaries could profit from their cumulative store of knowledge about borrowers by making significantly more informed credit decisions than most other market participants. These other market participants were thus obliged to permit depository intermediaries to make credit decisions in financial markets and therefore allow bank credit to substitute for what would otherwise be their own direct acquisition of credit market instruments[[53]](#footnote-53).

The argument is that depriving lenders of their ability to offer demand deposits would “come at a substantial cost in the efficiency of financial intermediation” because banks would lack access to the valuable “inside information” about their borrowers that make them superior lenders.[[54]](#footnote-54)

It is difficult to overstate the centrality of the checking account hypothesis as a justification for combining deposit-taking and lending. As Ben Bernanke observed long ago, the business model of banks is based on private information about borrowers and loan quality.[[55]](#footnote-55) The “real services performed by the banking system is the differentiation between good and bad borrowers,”[[56]](#footnote-56) and the costs of providing these services include screening, monitoring and accounting costs, all of which can, it is thought, be minimized by access to the information contained in banks’ checking accounts.

The checking account hypothesis, however, is predicated on a critical assumption about the information contained in bank transaction accounts that is no longer valid for several reasons. The assumption is that the valuable information contained in bank checking accounts is, in fact, “inside information” that is proprietary and not available to other, non-bank financial institutions.[[57]](#footnote-57) This assumption is invalid for two reasons.

First, small businesses, including sole proprietors increasingly are using online and web-based systems like QuickBooks and Quicken to manage their finances and accounting, and to provide budgeting, payroll, invoicing, automatic payments, tax preparation, and other business needs.[[58]](#footnote-58) QuickBooks provides lenders with even more detailed and higher quality information than the information available from checking accounts because it includes not only account balances and records of cash flows in and out of bank accounts, it also provides information about sales trends and seasonality of cash flows, profitability over time, and invoices and cash flow forecasts.[[59]](#footnote-59) In fact, it is now possible for individuals and small businesses to apply for loans with banks and other lenders directly from their accounts at accounting software companies like QuickBooks.[[60]](#footnote-60) Thus, lenders often no longer obtain information about prospective and current borrowers from the information gleaned from resident checking accounts, but from information gleaned from online accounting and financial applications.

Second, we now live in a world of “open banking” (sometimes called “open finance”), in which third-party developers access financial data in traditional banking systems through so-called “Application Programming Interfaces.”[[61]](#footnote-61) This data can then be freely shared with anyone that borrowers and consumers select to be recipients of such information.

The checking account hypothesis has long been invalid as applied to large borrowers, who borrow from multiple banks and from non-bank lenders, and who have publicly-traded equity and/or debt that provides an ongoing, real time assessment of the financial condition of such borrowers.[[62]](#footnote-62) However, the hypothesis was thought to retain at least some validity as applied to small borrowers.[[63]](#footnote-63) Technology has caught up with the checking account hypothesis even as it applies to small borrowers. Online lenders and nonbank credit providers are increasingly serving small borrowers, including small business borrowers.[[64]](#footnote-64)

Significantly, data from the Small Business Credit Survey administered by the 12 Federal Reserve Banks, indicate that “smaller, newer, and minority-owned firms are more likely to apply to online lenders” than to traditional banks.[[65]](#footnote-65) In addition, “the data suggest medium- and high-credit-risk applicants have had greater success obtaining credit at online lenders than at traditional banks (approval rates at 76 percent versus 34 percent at large banks and 47 percent at small banks).”[[66]](#footnote-66)

The core components of open banking are data access, sharing, portability, and interoperability.[[67]](#footnote-67) Open banking allows customers to have access to all of the personal, financial and transactional information that their financial institution collects and maintains, and it gives customers the ability to instruct their financial institutions to share this information with third parties.[[68]](#footnote-68)

Open banking fundamentally undermines the traditional “closed system in which … personal and transactional information resides within legal, technological, and economic vaults to which only incumbents enjoy access.”[[69]](#footnote-69) The “entrenched (competitive) advantage over both their own customers and any potential competitors” that banks’ exclusive access to its customers’ financial data has disappeared because the essential information about borrowers to which banks had access through their administration of borrowers’ deposit accounts is no longer the exclusive domain of banks. This essential information is increasingly freely available to banks’ competitors.

In essence, open banking consists of the secure exchange of financial information of exactly the kind that is reflected in bank transaction accounts, and more between banks and non-bank third-party providers. Open Finance provides access to account information, account balances, and transaction history.[[70]](#footnote-70) In other words, it provides access to all of the information reflected in bank transaction accounts. In addition, APIs can actually function as banks, allowing for the transfer of funds, the initiation of payments and direct debits and deposits, and for the advertisement of financial products, including rates and terms posted on websites and internet marketplaces.[[71]](#footnote-71)

Of course, incumbent banks have strong incentives to decline to share customers’ valuable information with their competitors. As the Consumer Financial Protection Bureau has observed, “[p]eople can become trapped by providers that hold their data.”[[72]](#footnote-72) If loans could not be made to borrowers without the data contained in checking accounts, then only banks, which are the only businesses that offer checking accounts, could make loans.

The banking industry is clearly losing the political battle over the allocation of property rights in customers’ financial information in the United States and elsewhere. In the U.S., Section 1033 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, passed in the aftermath of the 2007-08 financial crisis requires banks and other financial institutions to make available, “in an electronic form usable by consumers”[[73]](#footnote-73) information they control or possess “relating to any transaction, series of transactions, or to the account including costs, charges and usage data.”[[74]](#footnote-74) The Consumer Financial Protection Bureau (CFPB) was directed to promulgate rules to implement Section 1033. These rules must “promote the development and use of standardized formats for information, including through the use of machine readable files to be made available to consumers.”[[75]](#footnote-75) On October 19, 2023, the CFPB released a proposed rule on Personal Financial Data Rights. The proposed rule “establishes a comprehensive regulatory framework providing consumers and their authorized third parties with rights to receive structured, consistent and timely access to consumers’ personal financial data held by financial institutions and by imposing limitations on authorized third parties’ collection, use and retention of that data.”[[76]](#footnote-76)

The proposed Personal Financial Data Rights rule has several components. It would prohibit banks and other data providers from charging fees for sharing data.[[77]](#footnote-77) Banks and other providers subject to the rule would have to make personal financial data available, at no charge to consumers or their agents, through dedicated digital interfaces.[[78]](#footnote-78) Bank customers would have a legal right to grant third parties access to information associated with their credit card, checking, prepaid, and digital wallet accounts.[[79]](#footnote-79)

The CFPB is ideologically committed to open banking.[[80]](#footnote-80) As the Bureau observed in 2023:

New digital banking technologies have the power to expand and open market access for American consumers and emerging businesses. In a more competitive market, Americans will be able to earn higher rates on their savings, pay lower rates on their loans, and more efficiently manage their finances. But the new technologies, and the competition they can fuel, have not yet reached their full potential. Consumers continue to encounter all too familiar obstacles when trying to switch banks or apply for loans.

The CFPB is working to accelerate the shift to open banking through a new personal data rights rule intended to break down these obstacles, jumpstart competition, and protect financial privacy. To do this, the CFPB is formalizing an unused legal authority enacted by Congress in 2010. This authority gives consumers the right to control their personal financial data. These rights will become a practical reality after the CFPB implements a rule that sets expectations for the market. We expect to solicit comments on our formal proposal in a few months and finalize in 2024.[[81]](#footnote-81)

Open banking is growing outside of the U.S. as well.[[82]](#footnote-82) Since 2017 the United Kingdom has mandated open banking by requiring virtually all banks to make customer information available to third party competitors in a standardized format.[[83]](#footnote-83) Australia and the European Union are also moving towards implementing open banking.[[84]](#footnote-84) Open banking is not merely the future of the financial services industry. It is the present. Data aggregators like Plaid provides API connectivity to more than 12,000 financial institutions and fintech firms.[[85]](#footnote-85)

Plaid is a “fintech solution built for developers and financial technology companies that require access to users’ banking and financial information securely. Plaid facilitates the connection between users’ bank accounts and third-party applications.”[[86]](#footnote-86) Plaid and other APIs “gather and analyze financial data… serving developers and financial technology companies that require secure access to bank account information.”[[87]](#footnote-87) Yodle, TrueLayer, Finbox, and Tink provide similar services.[[88]](#footnote-88)

It is far from clear whether the regulators who are working hard to “accelerate the shift to open banking”[[89]](#footnote-89) through new data rights rules, fully recognize the existential threat that open banking poses for the traditional model of banking.[[90]](#footnote-90) In particular, despite the centrality of the checking account hypothesis to the economic theory of banking, regulators and policy makers have never addressed the profound way that open banking undermines the checking account hypothesis. Technology and law are conspiring to give non-bank competitors of banks access to precisely the same high quality, real time information that traditionally gave banks a competitive advantage over their non-deposit-taking rivals. Bank no longer are unique in their ability to “identify the risks to loans to depositors and to monitor the loans at lower cost than other (non-bank) lenders.”[[91]](#footnote-91)

Luckily for banks, however, free market competition is not something that they have to worry about. Unlike their non-bank rivals, commercial banks have access to a government-funded safety net through deposit insurance, which lowers banks’ funding costs by making the costs of funding bank activities from deposits largely insensitive to traditional credit risk factors, such as asset quality, bank liquidity and interest rate risk. Of course banks’ are only subsidized and insulated from competition by deposit insurance to the extent that deposit insurance is not fully priced.

Unfortunately, deposit insurance is not fully priced. In particular, the current deposit insurance limit is $250,000, but in practice deposits above $250,000 often receive protection.[[92]](#footnote-92) This fact was amply in evidence in March, 2023 when the FDIC covered billions of dollars in deposits above the $250,000 insurance limit when Silicon Valley Bank and Signature Bank failed.[[93]](#footnote-93) This oddity in deposit insurance pricing creates an anomalous and perverse set of incentives in which banks are strongly incentivized to attract large, uninsured deposits for which they obtain free government-sponsored deposit insurance.

Besides open banking, further existential challenges to the checking account hypothesis come from the emergence of cryptocurrencies and central bank digital currencies. Simply put, the checking account hypothesis is based on the fundamental premise that people will continue to keep their money in checking accounts. And, at the moment, this is true. In excess of 97% of the money in circulation today is emanated from checking deposits.[[94]](#footnote-94) While cash has largely become digitized, with the emergence of credit and debit card transactions and banking apps, these systems generally rely on customers linking their payment services to their bank debit and credit cards.[[95]](#footnote-95) As such, at least for the moment, the traditional transactional checking account remains at the core of the banking system.

But the system may well be unraveling. The emergence of cryptocurrencies, particularly stablecoins, and the parallel emergence of central bank digital currencies threatens fundamentally to the long-standing role of the checking account as the centerpiece of the payments system.

*Stablecoins and “DeFi”*

 Stablecoins are digital currencies recorded on distributed ledger technologies (blockchains) that peg their value to an external reference value, usually the U.S. dollar.[[96]](#footnote-96) Stablecoins also can be pegged to other currencies, and to other cryptocurrencies such as Bitcoin, and even to commodities like gold.[[97]](#footnote-97) The use of stablecoins has surged in recent years, with growth averaging 30 percent per month for the first five months of 2021.[[98]](#footnote-98) The market capitalization of stablecoins rose from $5 billion to $120 billion between 2020 and 2021.[[99]](#footnote-99) A primary use of stablecoins is a “bridge between fiat currencies and crypto-assets,” with 75 percent of all trading on crypto trading platforms involving the use of a stablecoin.[[100]](#footnote-100)

In theory, and generally in practice as well, most “stablecoins are backed by cash-equivalent reserves such as bank deposits, Treasury bills and commercial paper and offer 1-for-1 redemption for U.S. dollars or other fiat currencies.”[[101]](#footnote-101) Other stablecoins, known as algorithmic stablecoins, are governed by smart contracts that purchase and sell the assets invested by the buyers of the stablecoins to maintain the value of the stablecoins. For example, sometimes a stablecoin that is pegged to an established value of $1.00 will issue a cryptocurrency to back up the stablecoin. If the market value of the underlying cryptocurrency goes below the established value (known as the “peg”), the algorithm will remove (“burn”) cryptocurrency from the market until the value increases to the peg. If the value of the market value of the cryptocurrency goes above the peg, the algorithm will mint additional cryptocurrency until the value declines to the peg. Other, more complex algorithmic stablecoins will buy and sell multiple cryptocurrencies in order to maintain a stable peg.

Stablecoins offer a direct competitive alternative to bank transaction accounts, both as a repository for cash and as a mechanism for effectuating payments:

Stablecoins have the potential to spur growth and innovation in payment systems, allowing for faster, cheaper payments. Because stablecoins can be used to transfer funds near-instantaneously peer-to-peer between digital wallets for potentially low fees, stablecoins may lower payment barriers and exert pressure on existing payment systems to provide better services. This is especially important for cross-border transfers, which can take several days to clear and carry high fees. These fees and delays are a burden on low and middle-income countries, which receive financial support from remittances.[[102]](#footnote-102)

There is no question that stablecoins have the potential to disrupt bank-led credit intermediation should they become widely used as a substitute for bank deposits.[[103]](#footnote-103) Of course, to the extent that issuers of stablecoins are themselves commercial banks, or to the extent that non-bank issuers of stable coins deposit customers’ funds dollar-for-dollar in commercial banks, then commercial banks will not be affected.

Decentralized finance, often referred to as “DeFi,” which has been descriged as “one of the hottest trends in finance,”[[104]](#footnote-104) presents a challenge to commercial banking related to the challenge presented by stablecoins. DeFi describes the provision of a wide range of financial services on public blockchains such as Ethereum.[[105]](#footnote-105) Customers utilize DeFi by downloading an app, which runs on a blockchain, which allows users to store cash, make loans (usually by lending stablecoins), receive loans, and to purchase and sell various assets, particularly crypto assets. In fact the whole focus of DeFi is “building a new, internet-native financial system, using blockchains to replace traditional intermediaries (i.e. banks) and trust mechanisms.[[106]](#footnote-106)

With DeFi, “instead of transacting through banks, people trade directly with one another,” using distributed ledgers to maintain records of their transactions.[[107]](#footnote-107) DeFi is already a reasonably significant part of the financial landscape, with about $77 billion in assets, making it roughly equivalent in size to the 38th largest bank in the U.S. by deposits.[[108]](#footnote-108) Stablecoins “are a critical part of the DeFi market” because they are the currency used to effectuate DeFi transactions.[[109]](#footnote-109)

DeFi is a challenge to traditional banking because it provides a way for customers to store their own funds without using an intermediary such as a bank. DeFi allows customers to borrow money using stablecoins and other cryptocurrencies as collateral. DeFi also threatens to disrupt bank’s transaction account franchise because it allows users to deposit stablecoins and other cryptocurrencies on a platform or protocol that pays interest.

One can easily compare the interest rates offered on DeFi accounts with the interest rates offered by traditional banks. For example, on February 19, 2024, the average bank saving account offered an interest rate of 0.58 percent. In contrast, accounts denominated in USD Coin (known as USDC), a digital stablecoin cryptocurrency pegged to the U.S. dollar and managed by Circle,[[110]](#footnote-110) paid 6.15 percent.[[111]](#footnote-111) Those denominated in USDT, the stablecoin created by Tether Limited, paid 8.83 percent,[[112]](#footnote-112) and those denominated in DAI, a stablecoin on the Ethereum blockchain and developed by Maker Foundation, paid 4.78 percent.[[113]](#footnote-113) DeFi platforms paying such rates included firms such as YouHolder, YieldApp, and Wirex.[[114]](#footnote-114)

*Central Bank Digital Currency*

At present in the U.S. there are essentially two types of so-called “central bank money,” which simply money that is considered the responsibility of the central bank: physical currency (formally called Federal Reserve Notes) issued by the Federal Reserve and digital balances held by commercial banks at the Federal Reserve.[[115]](#footnote-115) Currently, cash is the only type of central bank money available to the general public.[[116]](#footnote-116) Central bank digital currency is a digital form of money that is a liability of a central bank, rather than of a commercial bank, and is available to the general public.[[117]](#footnote-117)

Central bank digital currencies give customers the ability to keep their funds “on deposit” at the central bank, rather than at a commercial bank.[[118]](#footnote-118) The movement of commercial and personal transaction accounts from commercial banks to central banks is an existential threat to the existence of traditional banks.

While the U.S. is lagging in the move towards a central bank digital currency, the rest of the world is forging ahead at a rapid pace. As of December, 2023, 130 countries, representing 98 percent of global GDP were actively exploring issuing a central bank digital currency.[[119]](#footnote-119) 19 of 20 G20 countries are in the advanced stage of central bank digital currency development.[[120]](#footnote-120) 11 countries, led by China, have already launched a central bank digital currency.[[121]](#footnote-121) China’s central bank digital currency is used by 260 million people, and allows payment for public transit, stimulus payments, and e-commerce.[[122]](#footnote-122)

Central banks are motivated to issue central bank digital currency for a variety of reasons. The emergence and explosive growth of cryptocurrencies directly threatens to displace central banks as the source of currency in the economy, and to undermine the ability of central banks to carry out monetary policy by expanding and contracting the money supply. In addition, commercial banks, which are regulated by the government, are increasingly outsourcing their payments services to unregulated, non-bank big tech companies, and central bankers rightly see this trend as a challenge to their ability to regulate the payments system. Central bank digital currencies are also viewed as “promoting financial inclusion by providing easy and safer access to money for unbanked and underbanked populations; introducing competition and resilience in the domestic payments market, which might need incentives to provide cheaper and better access to money.”[[123]](#footnote-123)

1. Sticky Deposits

In addition to obtaining information about their loan customers from their window into their borrowers’ checking accounts, another important reason the capital structure of banks is viable is the so-called “deposit franchise.”[[124]](#footnote-124) Essentially, the deposit franchise hypothesis is that bank deposits are “sticky” in the sense that bank depositors are insensitive to changes in interest rates or monetary policy.[[125]](#footnote-125) The idea is that, while depositors have the legal right to access their funds on demand, in practice they do not do so. As a result, “even though deposits are short term, funding via a deposit franchise resembles funding with long-term fixed-rate debt.”[[126]](#footnote-126) The existence of a deposit franchise is crucial to the hypothesis that the simultaneous deposit-taking and commercial lending done by banks is a viable business model because it suggests that “deposit-taking and long-term lending have important synergies”[[127]](#footnote-127) and “should *not* be separated.”[[128]](#footnote-128)

Deposit stickiness is important for bank stability because, to the extent that deposits are sticky, then rising interest rates and other macroeconomic events that depress the market value of a bank’s assets do not immediately and automatically lead to bank runs.[[129]](#footnote-129) The notion that deposits are sticky directly confronts the received wisdom that banks are inherently unstable due to the mismatch in the term structure of their assets and their liabilities. The idea is that, while bank assets have an average estimated duration of 3.7 years, as compared to an average duration of only 0.3 years for their liabilities,[[130]](#footnote-130) this mismatch is more apparent than real because depositors do not withdraw their money in response to changes in interest rate, because “aggregate bank cash flows are insensitive to interest rate changes.[[131]](#footnote-131)

 It is far from clear why this is the case. The dominant explanation in the finance literature is frustratingly tautological:

This apparent paradox is explained by the fact that having a deposit franchise gives banks substantial market power over retail deposits. In particular, market power allows banks to keep their deposit rates low even when the short rate rises. Since retail (core) deposits comprise over 70% of banks’ liabilities, this low sensitivity carries over to their overall interest expense. The deposit franchise thus allows banks to simultaneously have a large duration mismatch and a near-perfect match of the interest rate sensitivities of their income and expense.[[132]](#footnote-132)

The argument appears to be that depositors do not withdraw their funds from banks when interest rates rise because the services they provide their customers, including providing branches and other “retail outlets,” and “offering the latest financial technologies” induces depositors to keep their money in their transaction accounts through thick and thin.

 As Koont, Santos and Zingales have observed, however, technology plays an important role in this story.[[133]](#footnote-133) In particular, depositors are no longer doing their banking through bricks and mortar retail outlets. This means that these traditional “retail outlets” are no longer the draw that they once were for depositors. In addition, as explained in the preceding section’s discussion of open banking, there are a host of non-bank providers of financial services that provide customers with the latest financial technologies. As Koont, Santos and Zingales explain, banking has become mobile:

Since the Great Financial Crisis, over half of the roughly 4,000 existing banks have introduced a mobile app (Koont (2023)). Thus, moving money from a de-posit to a money market fund can be done with a single mouse click without leaving your sofa. As a result, it is reasonable to expect that the demand for bank deposits has become much more sensitive to the interest rates offered by alternative forms of liquidity storage (like money market funds), especially in banks with well-functioning digital platforms.[[134]](#footnote-134)

The introduction of mobile banking has made deposits less sticky, and this reduction in stickiness “has reduced the franchise value of deposits and consequently (reduced) the stability of the banking sector.”[[135]](#footnote-135) Simply put, technology in the form of digital banking has drastically reduced the transaction costs of withdrawing money from a bank. Thus, bank runs are getting cheaper. As mobile banking becomes ever-more prevalent, we should expect to see banks becoming increasingly fragile and susceptible to runs, thereby further undermining the case for banks. As Koont, Santos and Zingales point out, “digitalization,” or depositors’ ability to use technology to more easily access their funds and to move those funds out of banks and into brokerage accounts and money market funds “has important consequences for bank stability.”[[136]](#footnote-136) In particular, the presence of digital platforms and the ability of depositors to digitally link their bank accounts with their brokerage accounts “have made deposits more sensitive to increases in the deposit spread (the spread between interest rate paid on deposits and the interest rates available elsewhere) than before.”[[137]](#footnote-137)

The failure of Silicon Valley Bank as an example of the effects of digitalization on bank stability. The failure of Silicon Valley Bank in March 2023 is generally attributed to the decline in the market value of its large portfolio of long-term U.S. government securities, which were not marked to market on the Bank’s balance sheet due to the fact that SVB was intended to hold those assets to maturity. While it is true that the value of SBV’s portfolio of long-term securities declined in value as interest rates went up, it is important to recognize that these securities were not in danger of any sort of default or delay in meeting scheduled payments of interest or principal. Rather, SBV failed because it experienced a run. If SVB’s deposits had been sticky enough, the bank never would have failed. As Koont, Santos and Zingales observe, SBV failed because it was a digital bank, whose depositors were not sticky. If SVB were a traditional bank, it would have remained solvent.[[138]](#footnote-138) Simply put, technology has made banks less stable, and it has made the rationale for combining long-term assets with short-term liabilities within the same banking organization less tenable.

An even more alarming effect of technology on the traditional economic model of banking relates to the role of social media in facilitating communication among depositors and undermining the traditional notion that demand deposits is a viable way to fund long term assets such as commercial loans. In a recent paper, Cookson, Fox, Gil-Bazo, Imbet and Schiller investigate the impact of social media on the U.S. banking industry during the bank run on Silicon Valley Bank.[[139]](#footnote-139) Significantly, Cookson, Fox, Gil-Bazo, Imbet and Schiller find that the “openness and speed” of coordinated social media engagement by depositors “contributed to the run on SVB *and* more importantly, social media amplified the severity of the episode for other banks.[[140]](#footnote-140)

The point is quite simple. It has long been understood that communication among depositors can play a role in instigating bank runs.[[141]](#footnote-141) As Goldstein and Pauzner have observed, banks fail, regardless of the bank’s balance sheet strength immediately preceding a bank run, whenever enough depositors collectively decide to withdraw their deposits.[[142]](#footnote-142) The failure is due to the fact that banks are unable to liquidate their assets fast enough and at high enough prices to enable them to meet their depositors’ demands for cash.

Social media platforms such as Twitter (now *X*) facilitate communication among various groups and permanent and temporary coalitions of people, including, it appears, among people whose money is on deposit at the same bank. Early academic work on bank runs has focused on the way that communications in group settings and by word of mouth within discrete social groups such as immigrant communities can cause financial contagion.[[143]](#footnote-143) But social media is, of course, much faster, more public, and more widely accessible than traditional forms of communication.[[144]](#footnote-144)

Of course, television and radio has been around for a long time, and those mediums of communication reach very large audiences. However, these avenues of communication operate in only one direction, do not aggregate information from as many sources, and do not remain fixated on a particular, narrow subject for extended periods of times.[[145]](#footnote-145) Nevertheless, these more traditional forms of communication similarly have been shown to destabilize the banking system. For example, Ziebarth has shown that the as the fraction of people who received radio signals during the Great Depression experienced higher levels of banking stress, as measured by deposit withdrawals, between 1930 and 1933.[[146]](#footnote-146)

The available evidence is that social media increases the risk of bank runs of both insolvent and financially healthy banks.[[147]](#footnote-147) Around the time of the SVB collapse, rumors spread on social media about interest rate risk associated with insufficient hedging of interest rate risks, the decline in value of hold-to-maturity assets, and exposure to commercial real estate lending in various banks.[[148]](#footnote-148) The emergence of social media “amplifies classical bank run risks.”[[149]](#footnote-149) In particular, the more a bank is the focus of a conversation string on Twitter, the more susceptible the bank is to experiencing depositor withdrawals.[[150]](#footnote-150) Thus the emergence of social media, which “provides a means for individuals to coordinate and communicate beyond what older technologies allow,” increases bank run risk.[[151]](#footnote-151)

Just as the theoretical underpinnings of the checking account hypothesis are eroding, so too is the validity of the deposit franchise theory subject to increasing doubt. The deposit franchise theory is based on the assumption that “deposits are ‘sticky,’ i.e. they are not very sensitive to movements” in interest rates.[[152]](#footnote-152) Here too, however, technology is undermining the validity of an historical hypothesis about the economics of banking. Specifically, banking is becoming increasingly digital, and the availability of well-functioning digital mobile banking platforms has made deposits less sticky, and thereby “has reduced the franchise value of deposits and consequently the stability of the banking sector.”[[153]](#footnote-153)

1. Commitment Lending: Lines of Credit and Loan Commitments

Alongside the Checking Account Hypothesis and the Deposit Franchise Hypothesis as explanations for tying together the traditional commercial banking activities of deposit-taking and lending is a more recent theory, developed by Anil Kashyap, Raghuram Rajan and Jeremy Stein, that there are synergies between deposit taking and lending because both of these activities require banks to hold large balances of liquid assets.[[154]](#footnote-154) Kashyap, Rajan and Stein usefully point out that a major role played by lending institutions involves providing corporate clients with lines of credit and loan commitments, [[155]](#footnote-155) both of which give a borrower the option to receive a loan on demand over some specified period of time.[[156]](#footnote-156)

Kashyap, Rajan and Stein interestingly point out that loan commitments function like demand deposits in that a borrower who has access to a loan commitment or line of credit has immediate access to their funds: “the customer can show up and withdraw funds, and these withdrawals will be somewhat random from the bank’s perspective.”[[157]](#footnote-157) Thus, like demand deposits, loan commitments and lines of credit provide customers with liquidity on demand to accommodate unpredictable needs.[[158]](#footnote-158)

The key to Kashyap, Rajan and Stein’s argument that there are efficiencies to combining lending and deposit-taking is that there are synergies in offering both loans and deposits “as long as deposit withdrawals and commitment takedowns are not too highly correlated.”[[159]](#footnote-159) The idea is that synergies arise to the extent that deposits flow into banks just as borrowers in need of liquidity emerge to takedown their previously committed lines of credit.

The “main point” of this research is the rather strange assertion that deposit taking and lending are the same thing, “just two manifestations of the same function—the provision of liquidity on demand.”[[160]](#footnote-160) After all, a line of credit is “nothing more than a checking account with overdraft privileges, or a demand deposit with a negative balance.”[[161]](#footnote-161) This is true, as far as it goes. But the fact that a line of credit is like a checking account with overdraft privileges does not turn a line of credit into a checking. After all, balance sheets matter, especially to a firm’s creditors. When a depositor has a positive balance in their checking account, they are a creditor of the bank. When the bank balance turns negative, the depositor becomes a debtor rather than a creditor, and their account moves from the liability side of the bank’s balance sheet to the asset side. Being a creditor and debtor is not the same thing.

Still, Kashyap, Rajan and Stein’s claim that there are synergies to offering both of these services together is creative and interesting.[[162]](#footnote-162) Their work provides another argument that “the institutional form of the commercial bank maybe attributable to real considerations or economic efficiency, rather than simply to historical accident or the distortions inherent in policies such as deposit insurance.”[[163]](#footnote-163) In support of their theory, Kashyap, Rajan and Stein show that “[a]pproximately 70 percent of banks’ lending is through lines of credit, with 31 percent coming from secured lines of credit. By comparison, only 51 percent of finance company lending is through lines of credit, and hardly any of these – just 5 percent are unsecured lines of credit.”[[164]](#footnote-164)

The observation that there are synergies in combining lending and deposit taking, however, merely establishes that there are benefits to combining these two activities. A complete analysis of the economic value of combining lending and deposit taking requires that one also consider the costs of these two activities. Unfortunately, Kashyap, Rajan and Stein do not consider the massive social costs associated with combining lending and deposit taking.

Kashyap, Rajan and Stein are correct in pointing out that “[i]f we further assume for simplicity that commitment takedowns are perfectly negatively correlated with deposit withdrawals, it is clear that (banks) will have an advantage in competing with (finance companies and other non-bank lenders) because it does not have to add to its cash balance to offer this service.”[[165]](#footnote-165)

In this regard, it is important to recognize that Kashyap, Rajan and Stein do not claim that deposit withdrawals and loan commitment takedowns are completely uncorrelated. Significantly, the authors argue: “Intuitively, a deposit-taking bank holds a buffer stock of cash and securities as a hedge against a state of the world where there are large deposit outflows. But in many other states, there are no deposit outflows, and the buffer stock just sits idle. If the buffer stock can instead be used to accommodate commitment takedowns in those states, efficiency will be enhanced.”[[166]](#footnote-166)

In other words, it is clear that there are synergies between issuing loan commitments and credit lines where banks are holding deposits that can be used to fund these commitments and credit lines. And, to the extent that deposit withdrawals and commitment takedowns are negatively correlated, then banks will have cash from depositors when they need it, and they will not have to incur the costs of holding cash when they don’t need it. In other words, banking works fine as long as depositors put money into the bank when borrowers draw down their loan commitments. Unfortunately, things go awry when both depositors and borrowers decided that they want access to their cash simultaneously.

Kashyap, Rajan and Stein ignore the implications of this inconvenient fact. Put simply, they possibility of a run on the bank does not exist in their analysis. But bank runs are a real problem in the absence of government-sponsored deposit insurance and constant supervision.

In order for the combination of deposit taking and lending (including making loan commitments) to truly be considered efficient, the costs of the repeated bank failures that occur due to the admittedly unstable financial structure of banks must be lower than the efficiency benefits. If traditional banking were efficient, and if combining lending and deposit taking generated economic benefits in the form of synergies, then there would be no need to subsidize banks, and there would be no need to bail them out on a continuous basis.

Simply put, Kashap, Rajan and Stein do not purport to show that combining deposit taking and loan commitments is always efficient, only that it is efficient sometimes. Specifically, it is efficient when deposit taking and commitment takedowns are not too highly correlated. Unfortunately, in the real world, banks fail when deposit taking and commitment takedowns become “too highly correlated.” And this happens whenever depositors want their money at the same time that borrowers want banks to make good on their loan commitments. In other words, the Kashap, Rajan and Stein model ultimately depends on the deposit franchise acting effectively to keep depositors from withdrawing their funds.[[167]](#footnote-167)

In a world without deposit insurance and other government subsidies of banks, the costs associated with bank failures would be mostly borne by a bank’s shareholders. In such a world, banks should be free to take advantage of whatever synergies may arise when loan commitments and deposits are less than perfectly correlated. But in the real world, when the assumptions of the model no longer hold because borrowers and depositors demand cash simultaneously, it is taxpayers and local communities, generally are left holding the bag.

This Section of the Article has critiqued three justifications for combining lending and deposit taking.

1. Banks’ Provision of Transformation Services: Creating Liquidity

The combination of lending and deposit taking results in the transformation service of creating liquidity by financing illiquid assets (loans) with relatively liquid liabilities (deposits). The basic idea is very simple: loans are the lifeblood of business, particularly small businesses that do not have access to alternative sources of funding such as selling securities in the public capital markets. Because deposits fund loans, traditional banking is necessary. The liquidity transformation function has been called “the most subtle and probably the most important function of banks.”[[168]](#footnote-168)

Of course, it is clear that the provision of transformation services is what makes banks subject to runs in the first place.[[169]](#footnote-169) Thus, a key question in determining the ongoing social value of banks is whether individuals and businesses would have sufficient access to credit if lenders no longer funded their loans with demand deposits. It seems clear that, at least historically, the answer to this question was a resounding “no.” Instituting “narrow banking” (sometimes called “one hundred percent reserve banking”), which would eliminate the mismatch in assets and liabilities by requiring banks keep short-term, high quality liquid assets such as Treasury bills or interest-bearing Federal Reserve bank deposits has been proposed as a way of superior alternative to banks.[[170]](#footnote-170)

Narrow banking has been criticized because it would make loans less available to a wide array of borrowers, “even borrowers who do not appear to be dependent on banks liquidity.”[[171]](#footnote-171) As Douglas Diamond and Philip Dyvig have explained:

Almost all corporations issuing commercial paper to raise short-term cash obtain backup lines of credit from banks. The line of credit gives the corporations an emergency source of funds to circumvent a potential liquidity crisis that could prevent them from rolling over their commercial paper. Firms that issue substantial quantities of commercial paper would be subject to runs (liquidity crises) when they tried to roll it over. Similarly, existing money market funds themselves use banks as sources of liquidity: their assets often include large quantities of bank certificates of deposits.[[172]](#footnote-172)

 Diamond and Dybvig, however, base their claim that a modern economy cannot exist without traditional banking (combining lending and deposit taking) simply by assuming that there are no substitutes for the lending function historically performed by banks. They may well have been right back in 1986 when they published their article making this argument. After all, loans are vital to the economy, so if deposits are necessary to fund loans, then we must avoid regulations that impeded the combination of lending and deposit taking.

 In fact, non-depository institutions are neck and neck with banks in lending. Moreover, it has long been known that securitization of income-producing assets such as commercial and residential mortgage loan debt, credit card receivables, student loans, and automobile loans, enables banks to move loans off of their balance sheets and into the hands of investors.[[173]](#footnote-173)

 In 2022 nonbanks accounted for over one-half (50.9 percent) of mortgage loans in 2022, and they accounted for 60.7 percent in 2021.[[174]](#footnote-174) Nonbank lenders similarly account for approximately one-half of the new credit extended to small businesses.[[175]](#footnote-175) At some points in recent history, as much as 70 percent of home mortgages were funded by nonbanks,[[176]](#footnote-176) and banks’ (including credit unions) share of the market was as low as 28 percent.[[177]](#footnote-177)

 Other researchers have forcefully argued that the lending function traditionally carried on by commercial banks can be carried out by non-banks. Some sources estimate that banks’ share of business debt at less than 20 percent.[[178]](#footnote-178) Adam Levitin has argued that:

Capital markets are technically capable of assuming the entire Lending Function. There is no need for banks to make loans. A shift of the Lending Function entirely to capital markets would require some institutional expansion within capital markets, but it is all technically feasible, and it would not be difficult to redeploy the human capital and technological expertise that currently exist at fractional reserve banks to non-depository money brokerages.[[179]](#footnote-179)

 Professor Levitin observes that not only mortgages, but also the financing of non-mortgage consumer debt and non-financial corporate debt increasingly is coming from nonbanks.[[180]](#footnote-180) Business lending by nonbanks involves every segment of the market, including syndicated corporate loans, loans to middle-market firms and loans to small businesses.[[181]](#footnote-181) Thus, it is clear that “banks no longer play as important a financial intermediation role as they once did.”[[182]](#footnote-182) Interestingly, nonbank lenders, particularly nonbank online lenders appear to appeal disproportionately to Black and Hispanic owned firms.[[183]](#footnote-183) In fact, while there is evidence that both banks and non-bank FinTech firms discriminate against LatinX and African-American borrowers, FinTech firms appear to reduce rate disparities somewhat, particularly for FHA purchase loans and FHA refinance loans.[[184]](#footnote-184) Rejection rates appear to be about the same for minority and non-minority borrowers.[[185]](#footnote-185)

 Other research has shown that:

Fintech firms are more likely than banks to offer mortgage credit to consumers with lower-income, lower-credit scores, and those who have been denied credit in the recent past. Fintechs are also more likely than banks to offer personal loans to consumers who had filed for bankruptcy (thus also more likely to receive credit card offers overall) and those who had recently been denied credit. For both personal loans and mortgage loans, fintech firms are more likely than other lenders to reach out and offer credit to nonprime consumers.[[186]](#footnote-186)

It appears that non-bank Fintech lenders outcompete banks in the market for lending to lower-income people with lower credit scores because of their ability to “leverage alternative data and more complex artificial intelligence/machine learning (AI/ML) modeling in their risk evaluation and pricing and in their fully digitized credit-decisioning process.”[[187]](#footnote-187)

 Turning from the asset side of the bank balance sheet to the liability side of the balance sheet, the banking industry does not appear to have succeeded in providing transaction account services broadly throughout the population.[[188]](#footnote-188) Simply put, “[f]or low- and moderate-income people with few assets and some unpredictability in their income and expenses, banks simply don’t stack up well against check cashers and payday lenders.”[[189]](#footnote-189) This is because “banks are often costlier for the poor than check cashers or other alternative services.”[[190]](#footnote-190)

 As the Federal Reserve Board recently observed, “notable gaps in access to financial services still exist, particularly among those with low income, Black and Hispanic adults, and those with a disability.[[191]](#footnote-191) Six percent of adults in the U.S. were “unbanked” in 2022, meaning that neither they nor their spouse or partner had a checking, savings or money market account.”[[192]](#footnote-192) Of course poor people number disproportionately in the ranks of the unbanked, with seventeen percent of adults with income below $25,000.[[193]](#footnote-193) Members of minority groups and those with disabilities are also disproportionately unbanked.[[194]](#footnote-194) Discouragingly, it appears that the numbers of people in poor communities who are unbanked is going up, not down.[[195]](#footnote-195)

 Similarly, there appears to be little evidence that separating lending and deposit taking would reduce the supply of credit to high risk borrowers. In fact, firms with higher credit risks appear to be more likely to apply to nonbank lenders.[[196]](#footnote-196) Thus, there appears to be little if any support for the proposition that traditional banking is particularly effective in providing credit or access to transaction services to the poor or to historically marginalized groups.

 The success of nonbank lending is particularly impressive in light of the fact that nonbank lenders are competing with traditional bank lenders whose costs are lower because they receive cheap funding from depositors whose claims are backed by the government sponsored deposit insurance program.

IV. What is Left of the Argument that Combining lending and Deposit Taking is Efficient?

 Distilling the points made in the previous section, on inspection, the benefits of combining lending and deposit taking appear mostly ephemeral. Those benefits, which are largely ignored in the literature, are discussed here in more detail. First, and foremost it is worth noting that the articulated benefits of the maturity transformation that comes from combining lending and deposit taking are exclusively on the asset side of banks’ balance sheets. In other words, the synergies facilitate the lending function, not the deposit-taking function. To briefly summarize the literature discussed in the previous section, banks are alleged to benefit from combining lending and deposit taking either because of their superior access to information, or because of their ability to attract cheap funding, either through sticky deposits or deposits that are available to fund banks’ promises to make credit available to borrowers in the future. But *depositors* do not appear to get much out of the deal, other than the opportunity to park their money in a very risky enterprise that relies on a massive panoply of government support for survival.

Second, the efficiency benefits from combining lending and deposit taking do not come from traditional lending, but from contingent lending in the form of loan commitments and lines of credit. Oddly, the economists who argue that deposit taking and lending are efficient defend their position simply by observing that there are benefits in the form of synergies and economies of scope from combining these functions. The problem with this framing, of course, is that it ignores the fact that there are costs as well as benefits from combining lending and deposit taking. As such, even if there are benefits from combining lending and deposit taking, in order to make the case that this combination is efficient, one must further consider whether these benefits equal the considerable costs of such a combination. This Section will elaborate on these observations.

1. Benefits of Combining Lending and Deposit Taking: the Liability Side of the Balance Sheet

Even Diamond and Dybvig, who are among the most ardent proponents of the view that combining lending and deposit taking is efficient, acknowledge the distinct possibility that banks appear to be “no longer needed for liability services” to depositors[[197]](#footnote-197) And, as discussed below, the emergence of money market mutual funds demonstrates decisively that financial firms can offer safe and reliable repositories for cash that is immediately available for withdrawal by investing “depositors’” funds in high-quality, liquid short-term securities, thereby drastically reducing credit and interest rate risk.

 This is because “money market mutual funds, brokers’ asset management accounts and credit cards have competed more or less directly with the banks in the market for the provision of secure and liquid stores of funds and in the market for clearing transactions.”[[198]](#footnote-198) As is always the case, the key to understanding the way the world has changed lies in understanding the role of technology:

Changes in the payments technology have weakened the link between the money supply and bank deposits. This fact has two implications for macroeconomics. One is that banks need not be so important to macroeconomics as they were before since close substitutes exist in the provision of payment and other liability services. The other (antithetical) implication is a potential policy goal of trying to repair the money supply linkage by tightening bank regulation and keeping nonbanks out of the liability service businesses.[[199]](#footnote-199)

In other words, moving to a narrow banking system, or otherwise preventing businesses that offer demand deposit accounts from making loans, would not inconvenience depositors or reduce people’s ability to find safe repositories for their cash. In particular, there is nothing that would prevent deposit insurance from being available for transaction accounts in narrow banks in precisely the same way as such insurance is available for transaction accounts at present. The only difference would be that the risks to the government of offering such insurance would be minimized.

As I have argued previously, money market mutual funds serve as a superior substitute for the demand deposits issued by traditional banks.[[200]](#footnote-200) Money market mutual funds closely resemble narrow banks in that they offer transaction accounts but do not make commercial loans.[[201]](#footnote-201) Unlike a bank, however, the returns to investors in the mutual funds are not guaranteed by the fund itself. Rather, investors’ returns are a function of the performance of the assets in which the fund is invested. Thus, unlike bank deposits:

Shares in a mutual fund are not debt instruments. The fund does not promise to pay back the investor at any specified value, but rather commits to redeem investments based on the fund’s NAV at the time of redemption. Whereas banks set an administered rate, MMFs (money market mutual funds) provide a market return. Interests in a mutual fund are thus a form of demand equity rather than demand debt. This feature means that a run on mutual funds is unlikely (and helps explain why such runs have been quite rare when compared to bank products). Even if a customer hears troubling news about a mutual fund in which he or she has invested, there may be little advantage to redeeming shares immediately because he or she will receive only a pro rata share of NAV. There may be a marginal advantage nonetheless for participating in a run on a mutual fund because of concern that NAV will decrease during a run as a result of emergency liquidation of assets to meet customer demand. However, the highly safe asset base and highly liquid nature of MMFs – which are even more safe and more liquid under the SEC’s recent Rule 2a-7 amendments – make such liquidations extremely rare occurrences. Furthermore, the new rules give the boards of MMFs the ability to suspend redemptions if necessary.[[202]](#footnote-202)

As a type of mutual fund, a money market mutual fund is an investment vehicle (organized as a corporation or a business trust) that raises capital by selling shares to investors, and uses the capital it raises to construct a portfolio of investments.[[203]](#footnote-203) The difference between money market mutual funds and other mutual funds is that money market mutual fund generally restrict their investments to short-term (one day to 397 day) debt obligations such as Treasury bills, federal agency notes, certificates of deposit, commercial paper and repurchase (“repo”) agreements.[[204]](#footnote-204) In addition, money market mutual funds “promise that investors can redeem their shares at any time at the price they purchased them for: typically a fixed NAV (net asset value, calculated as the market value of the assets money market mutual fund’s investments divided by the number of fund shares outstanding) of one dollar per share.”[[205]](#footnote-205)

As Dan Awrey has observed:

MMFs (money market mutual funds) have also evolved to offer their investors the ability to write checks payable from the proceeds of redeeming their MMF shares. From the perspective of investors, it is this combination of a fixed NAV, the promise to redeem investors’ shares on demand, and potential access to the payment system that make MMF shares such close and attractive substitutes for conventional bank deposits.[[206]](#footnote-206)

 Thus, money market mutual funds provide investors with liquidity, a market-based rate of return, and safe-keeping of their principal. While money market mutual funds are clearly “substitutes for bank deposits,”[[207]](#footnote-207) they operate at a distinct competitive disadvantage to banks due to the fact that shares in money market mutual funds lack the deposit insurance protection for investors that bank depositors enjoy, and because various other regulations that limit money market mutual funds ability to compete with banks. In addition, money market mutual funds typically are less convenient than banks. Withdrawing or transferring money from a transaction account at a bank is virtually instantaneous. In contrast, “[t]ypically, “it takes three to five business days to sell a money market mutual fund and transfer the money from your investment account to savings.”[[208]](#footnote-208)

 Nevertheless, money market mutual funds are remarkably successful in competing with banks. In 2023 it was estimated that $17.269 trillion was on deposit at U.S. banks,[[209]](#footnote-209) while money market mutual funds reported outstanding fund values of $5.52 trillion.[[210]](#footnote-210)

 Money market mutual funds strive to maintain a stable price and employ investment and valuation techniques that allow them to sell and redeem (purchase) shares for $1.00, even if there are variations in the capital markets. Money market mutual funds that market to retail investors have some regulatory flexibility in calculating their NAVs in order to allow them to maintain a stable $1.00 NAV in fluctuating markets. Institutional money market mutual funds currently are required to use a floating NAV.

SEC Rule 2a-7 promulgated under the Investment Company Act imposes strict rules requiring money market mutual funds to hold sufficient liquid assets to meet foreseeable shareholder redemptions.[[211]](#footnote-211) The SEC also requires money market mutual funds to adopt “know your customer” policies and procedures to assure that funds undertake appropriate efforts to identify the risk characteristics of their investors in order to anticipate their likely liquidity requirements.[[212]](#footnote-212)

Rules promulgated in July, 2023 require money market mutual funds to hold daily liquid assets and weekly liquid assets of 25 percent and 50 percent respectively.[[213]](#footnote-213) In addition, certain money market mutual funds designated as “institutional” funds are required to charge a mandatory liquidity fee on clients wishing to withdraw their money from the fund if the fund has total daily redemptions that exceed five percent of the fund’s net assets.[[214]](#footnote-214) As Dan Awrey has summarized other aspects of the regulation of money market mutual funds: “MMFs are subject to tight portfolio restrictions that limit their ability to invest in many of the most risky debt instruments. They are also required to maintain a stock of highly liquid assets for the purpose of honoring shareholder redemption requests.”[[215]](#footnote-215)

While runs on money market mutual funds are rare, they do happen. In particular, there were runs on money market mutual funds during the 2007-2009 financial crisis and again during the Covid-19 pandemic.[[216]](#footnote-216) Some have argued that money market mutual funds are fragile,[[217]](#footnote-217) without providing any indication of what the term “fragility” means. If fragility simply means “subject to risk,” then of course they are fragile. A better question, though, is whether money market mutual funds are less fragile than banks, and clearly they are.

In particular, even when MMFs “break the buck” they do not impose significant losses on investors. The most famous example of a run on a money market mutual fund was the run on the Reserve Primary Fund, which was only the second time in history that a money market mutual funds’ NAV fell below $1.00 since the invention of the product in 1971.[[218]](#footnote-218) Reserve Primary Fund had a substantial investment in the short-term debt of Lehman Brothers, and when Lehman fell, the Reserve Primary Fund experienced a spate o redemption requests from investors. Importantly, when the Reserve Primary Fund ultimately was liquidated and a final payout was made to investors, investors received more than $0.99 per share, a figure vanishingly close to the $1.00 NAV goal.[[219]](#footnote-219)

 The point is that there is no doubt that the risks to a government insurer from providing a government backstop to insure funds held in money market mutual funds are substantially less than the risks to the government from providing deposit insurance on traditional bank deposits. Gary Gorton and Andrew Metrick, [[220]](#footnote-220) following the Group of 30,[[221]](#footnote-221) propose that money market mutual funds that offer transaction account services, including “withdrawals on demand at par, and assurances of maintaining a stable net asset value (NAV) at par should be required to organize as special-purpose bans, with appropriate prudential regulation and supervision, government insurance, and access to central bank lender-of-last resort functions.”[[222]](#footnote-222)

1. Benefits of Combining Lending and Deposit Taking: the Asset Side of the Balance Sheet

Distilling the literature in economics and finance that explain and defend the combination of lending and deposit taking, it becomes clear that only viable efficiency argument in favor of combining lending and deposit taking is that banks provide “contingency lending” in the form of lines of credit and loan commitments. In other words, it is not lending and deposit taking that is efficient, it is the ability to make a credible promise to provide a loan in the future that, when combined with deposit-taking is efficient. This is the central argument of both Kashyap, Rajan and Stein,[[223]](#footnote-223) and Diamond and Dybvig. Kashyap, Rajan and Stein argue that combining lending and deposit taking reduces lending costs by lowering banks’ costs of funding. Diamond and Dybvig argue that lines of credit “give corporations an emergency source of funds to circumvent a liquidity crisis that could prevent them from rolling over their commercial paper.”[[224]](#footnote-224) And Kashyap, Rajan and Stein are quite clear that in their model, “there is no synergy between a bank’s deposit activities and its term lending.”[[225]](#footnote-225)

Strangely, those advocating the divorce of lending and deposit taking have not confronted the argument that this traditional combination of services is valuable for contingent lending.[[226]](#footnote-226) While I have cast some doubt on the validity of the argument that combining contingency lending and deposit taking are efficient, I have not disproven it. In particular I acknowledge that traditional banks do more lending through lines of credit than do non-bank lenders. On the other hand, it clearly is the case that non-banks provide plenty of lending through lines of credit. Specifically, as Kashyap, Rajan and Stein report, “approximately 70 percent of banks’ lending is through lines of credit, with 31 percent coming from unsecured lines of credit. By comparison, only 51 percent of finance company lending is through lines of credit, and hardly any of these – just 5 percent – are unsecured lines of credit.”[[227]](#footnote-227) However, finance companies are not the only source of non-bank contingency lending, as insurance companies also offer unsecured lines of credit.[[228]](#footnote-228) Thus, it is far from true that commercial banks are the only source of contingent lending.

Even if one were to assume that Kashyap, Rajan and Stein and Diamond and Dybvig are right in arguing that there are synergies in combining lending and deposit taking, the existence of such synergies does not prove or even suggest that combining these two functions is efficient because the analysis looks only at the benefits of this combination. Their analysis entirely ignores the costs. And the costs are significant. Among the “devices” required to deal with the fragility of banks are:

capital regulation and government deposit insurance to address solvency concerns, and reserve requirements and government liquidity facilities to address liquidity concerns. Layered across these solvency and liquidity protections are regular supervisory examinations, activity restrictions, and investment limitations — all of which are aimed at preventing banks from having to turn to the solvency and liquidity protections in the first place.[[229]](#footnote-229)

Thus, putting aside the “enormous transaction and political costs of regulation,”[[230]](#footnote-230) as Roberta Romano has observed, “the vulnerability of highly leveraged financial institutions engaging in maturity transformation to shocks that create systemic risk, and the deleterious economic aftereffects of financial crises lasting far longer than downturns of the business cycle are sources of utmost public policy concern.”[[231]](#footnote-231) These sorts of costs appear to be a very high price to pay for the theoretical promise of saving a few basis points in the credit markets for contingent debt.

1. Payments and Money Creation!

While banks are defined as businesses that simultaneously take deposits and make commercial loans, of course, they do far more than that. In particular, banks serve two other core functions in the economy: money creation and facilitating payments systems. But, as Dan Awrey has observed, we are in a budding process of unbundling these services and “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.”[[232]](#footnote-232)

V. Conclusion

 This Article makes three contributions to the literature on banking regulation. First, it connects the primary economic justification for combining lending and deposit taking, to the emerging phenomenon of open banking. The primary economic justification for combining deposit taking and lending is that the information that banks glean from customers’ transaction accounts is secret and highly valuable because it enables bank lenders to monitoring borrowers in ways that their non-bank rivals cannot. Open banking (also called open finance) is an important emerging banking practice that provides non-bank lenders and other bank competitors with open access to consumer and business banking, transaction and other data. Open banking makes information that traditionally was in the exclusive possession and control of banks available to non-bank competitors, thereby undermining the core assumption that there are synergies in combining lending and deposit taking that cannot be duplicated by nonbanks.

The second contribution of this article is to observe that previous scholars who have argued in favor of “narrow banks” that would unbundle the provision of lending and deposit-taking offer powerful explanations of the benefits of separating lending and deposit taking, but they do not consider the rationales offered by financial economists to explain how combining these activities is efficient. By ignoring the important literature in economics and finance that models how combining lending and deposit taking generates efficiencies in the form of synergies, these scholars are unable to make a complete case for narrow banking. This Article is the first to consider the efficiency arguments in favor of traditional banking in the context of narrow banking.

Finally, I observe that the financial economists who argue that combining lending and deposit taking is efficient ignore the significant costs associated with combining these two functions. These scholars appear to overstate the efficiencies associated with combining lending and deposit taking. But even to the extent that combining lending and deposit taking still generates synergies, to justify the combination of lending and deposit taking one must take into the costs as well as the benefits. In particular, those who argue that traditional banking is efficient do not take into account the fact that maintaining this system requires massive regulation to deal with the instability (deposit insurance distortions, recurring runs, panics, bailouts) imbedded in this industrial structure.

Putting these three points together, this Article concludes that when the costs associated with combining lending and deposit taking are properly considered, the arguments that traditional banking is efficient appear highly doubtful.

1. Anil Kashyap, Raghuram Rajan and Jeremy Stein, Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking, 57 J. FIN. 33, 33-34 (2002) [↑](#footnote-ref-1)
2. Kenichi Ueda and Beatrice Weder de Mauro, Quantifying Subsidies for Systematically Important Financial Institutions, International Monetary Fund Working Paper WP/12/128, May, 2012. [↑](#footnote-ref-2)
3. Myron Kwast and Wayne Passmore, The Subsidy Provided by the Federal Safety Net: Theory, Measurement and Containment, Board of Governors of the Federal System, December 1997 [↑](#footnote-ref-3)
4. The Economist, “Another Bank Subsidy America Should Kill Off,” February 13, 2024, <https://www.economist.com/leaders/2024/02/13/another-bank-subsidy-america-should-kill-off> ; Katherine Judge, The Unraveling of the Federal Home Loan Banks (January 23, 2024). Columbia Law and Economics Working Paper No. 668, Yale Journal on Regulation, Forthcoming, Available at SSRN: [https://ssrn.com/abstract=4626125](https://ssrn.com/abstract%3D4626125) or [http://dx.doi.org/10.2139/ssrn.4626125](https://dx.doi.org/10.2139/ssrn.4626125). [↑](#footnote-ref-4)
5. International Monetary Fund, Global Financial Stability Report, Moving from Liquidity to Growth Driven Models, April, 2014 [↑](#footnote-ref-5)
6. Ruchir Agarwal, Industrial Policy and the Growth Strategy Trilemma, International Monetary Fund, September 2023, https://www.imf.org/en/Publications/fandd/issues/Series/Analytical-Series/industrial-policy-and-the-growth-strategy-trilemma-ruchir-agarwal [↑](#footnote-ref-6)
7. Creative destruction refers to the process of innovation by which new products and processes replace outdated ones. Ricardo J. Caballero, New Palgrave Dictionary of Economics, <https://economics.mit.edu/sites/default/files/publications/creative%20destruction.pdf>. Estimates are that “the process of creative destruction accounts for over 50 percent of productivity growth.” Id. “Obstacles to the process of creative destruction can have severe short- and long-run macroeconomic consequences.” Id. See also Joseph Schumpeter, Capitalism, Socialism and Democracy, 1942 [↑](#footnote-ref-7)
8. Richard Carnell, Jonathan Macey, Geoffrey Miller & Peter Conti-Brown, The Law of Financial Institutions, 2021 (Seventh ed.). at 2. See also Anil Kashyap, Raghuram Rajan and Jeremy Stein, Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking, supra, at 33 (2002). (“Both the legal definition in the United States and the standard answer from economists is that commercial banks are institutions that engage in two distinct types of activities, one on each side of the balance sheet – deposit taking and lending.”). As Dan Awrey usefully has observed, 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. Dan Awrey, Unbundling Banking, Money and Payments, 110 GEORGETOWN L.J. 715, 717, footnote 2 (2022), *citing* Bank, OXFORD ENG. DICTIONARY, https://www.oed.com/view/Entry/15237#eid28163689 [https:// perma.cc/62XD-FUDY] (last visited Jan. 31, 2022). [↑](#footnote-ref-8)
9. Daniel Fischel, Andrew Rosenfield & Robert Stillman, The Regulation of Banks and Bank Holding Companies, 73 VA. L. REV. 301, 306 (1987) [↑](#footnote-ref-9)
10. Fabio Schiantarelli & Alessandro Sembenelli, The Maturity Structure of Debt: Determinants and Effects on Firms' Performance? Evidence from the United Kingdom and Italy, The World Bank Group Policy Research Working Papers, June 21, 2013, <https://doi.org/10.1596/1813-9450-1699> (“in choosing a maturity structure for debt, firms tend to match assets and liabilities”). [↑](#footnote-ref-10)
11. Stephan Luck, Matthew Plosser & Josh Younger, How Do Interest Rates (and Depositors) Impact Measures of Bank Value, The Federal Reserve Bank of New York, Liberty Street Economics, April 7, 2023, <https://libertystreeteconomics.newyorkfed.org/2023/04/how-do-interest-rates-and-depositors-impact-measures-of-bank-value/#:~:text=In%20aggregate%2C%20deposits%20make%20up,maturity%2C%20floating%2Drate%20liability>. [↑](#footnote-ref-11)
12. Statista, Distribution of Bank Loans in th U.S., 2022, https://www.statista.com/statistics/1357194/loans-as-a-share-of-bank-assets-in-the-us-by-type/#:~:text=Quarterly%20loan%20value%20as%20a,U.S.%202003%2D2022%2C%20by%20type&text=In%20the%20last%20quarter%20of,the%20United%20States%20were%20loans. [↑](#footnote-ref-12)
13. See Anil Kashyap, Raghuram Rajan and Jeremy Stein, Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking, supra at 33. [↑](#footnote-ref-13)
14. Jonathan Macey & Maureen O’Hara, The Corporate Governance of Banks, The Federal Reserve Bank of New York, Economic Policy Review, April, 2003, at 97. [↑](#footnote-ref-14)
15. Federal Reserve Bank of St. Louis, The Yield Curve, <https://research.stlouisfed.org/publications/yield-curve/what-is-the-yield-curve>. [↑](#footnote-ref-15)
16. Camelia Minoiu, Andres Schneider and Min Wei, Why Does the Yield Curve Predict GDP Growth? The Role of Banks, Federal Reserve Bank of Atlanta, Working Paper 2023-14, September, 2023, <https://doi.org/10.29338/wp2023-14> [↑](#footnote-ref-16)
17. There were regular bank panics in the United States during the 19th and early 20th centuries. Gary B. Gorton & Jeffrey Y. Zhang, *Taming Wildcat Stablecoins*, 90 U. CHI. L. REV. 909, 946-7 (2023); *See also* James Lee & David Wessel, How Does Deposit Insurance Work? Brookings Commentary, March 21, 2023, <https://www.brookings.edu/articles/how-does-deposit-insurance-work/> [↑](#footnote-ref-17)
18. Daniel Fischel, Andrew Rosenfield & Robert Stillman, *supra*, at 308. [↑](#footnote-ref-18)
19. Diamond & Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POLITICAL ECONOMY 401, 403 (1983). [↑](#footnote-ref-19)
20. Saule Omarova, Public Banking as an Institutional Design Challenge, Y. J. on REG. (forthcoming 2024). [↑](#footnote-ref-20)
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22. Id. [↑](#footnote-ref-22)
23. Kayshap, Rajan and Stein, supra at 33-34. [↑](#footnote-ref-23)
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31. Gary Gorton, Banking Panics and Business Cycles, Oxford Economic Papers, December 1988, 751 [↑](#footnote-ref-31)
32. Id. [↑](#footnote-ref-32)
33. Haelim Anderson, Daniel Barth & Dong Beom Choi, Does Increased Shareholder Liability Always Reduce Bank Moral Hazard? September 15, 2019, [https://ssrn.com/abstract=3091914](https://ssrn.com/abstract%3D3091914); R.S. Grossman, Double Liability and Bank Risk Taking 33 J. MONEY CREDIT & BANKING 143 (2001); Jonathan R. Macey and Geoffrey P. Miller, Double Liability of Bank Shareholders: History and Implications, 27 WAKE FOREST L. REV. 31 (1992). [↑](#footnote-ref-33)
34. Charles Calomoris and Charles Kahn, The Role of Demandable Debt in Structuring Optimal Banking Arrangements, 81 AMER. ECON REV. 497, 497 (1991). [↑](#footnote-ref-34)
35. Other articles that justify combining lending and deposit taking on the grounds that this capital structure serves to impose discipline on bank managers includes Jianping Qi, Deposit Liquidity and Bank Monitoring ,7 J. FIN. INTER. 198 (1988) (deposit liquidity motivates banks to provide greater monitoring of loan applicants), and Flannery, Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms, supra (liquid deposits commit banks to market discipline). [↑](#footnote-ref-35)
36. Charles Calomoris and Charles Kahn, The Role of Demandable Debt in Structuring Optimal Banking Arrangements, supra. [↑](#footnote-ref-36)
37. Id. at 500. [↑](#footnote-ref-37)
38. Id. [↑](#footnote-ref-38)
39. Virtually every country (147 at last count) has a deposit insurance regime. See International Association of Deposit Insurers, updated February 2024, <https://www.iadi.org/en/about-iadi/deposit-insurance-systems/dis-worldwide/>. Moreover, “Deposit insurance–whether explicit or implicit–is a political reality in effectively all jurisdictions that have a banking system. The role of an explicit deposit insurance system in today's financial environment will continue to evolve and expand.”. Id. [↑](#footnote-ref-39)
40. Charles Calomoris and Charles Kahn, The Role of Demandable Debt in Structuring Optimal Banking Arrangements, supra at 510. [↑](#footnote-ref-40)
41. Diana Bonfim and João A.C. Santos, The Importance of Deposit Insurance Credibility, 154 J. BANKING & FIN. (2023), Available at SSRN: https://ssrn.com/abstract=3674147 or <http://dx.doi.org/10.2139/ssrn.3674147> [↑](#footnote-ref-41)
42. See Douglas W. Diamond & Philip H. Dybvig, Banking Theory, Deposit Insurance, and Bank Regulation, 59 J. OF BUSINESS 55 (1986). [↑](#footnote-ref-42)
43. Larry I. Nakamura, Commercial Bank Information: Implications for the Structure of Banking, in Structural Change in Banking 131, 134-36 (Michael Klausner & Lawrence J. White eds., 1993). [↑](#footnote-ref-43)
44. See *Id*, describing the work of Black and Fama, cited *infra*. [↑](#footnote-ref-44)
45. Id. [↑](#footnote-ref-45)
46. Id. at footnote 2. [↑](#footnote-ref-46)
47. Eugene Fama, What’s Different About Banks, 15 J. of MONETARY ECONOMICS 29, 38 (1985); *See also* Fisher Black, Bank Funds Management in an Efficient Market, 2 J. FIN. ECON. 323 (1975) [↑](#footnote-ref-47)
48. Brian Gendreau and Steven Smith, Debating the Checking Account Hypothesis, 14 J. RETAIL BANKING 35 (1992) [↑](#footnote-ref-48)
49. Id. Information from checking accounts benefits lenders because:

By examining the checks written against a commercial customer's checking account and the deposits into the account, a bank loan officer can determine the size of the payroll, the salaries of the firm's key personnel, the amount of money paid for supplies, the identity of the firm's major customers, and the seasonal pattern of the business' receipts. With this information readily available, banks obtained a significant competitive advantage over other sorts of financial intermediaries.

Jonathan Macey and Geoffrey Miller, Bank Failure: The Politicization of a Social Problem, 45 STAN. L. REV. 289, 295 (1992). [↑](#footnote-ref-49)
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60. Id. [↑](#footnote-ref-60)
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*See also* Stripe, Open Banking Explained: What It is and How It’s Changing Financial Services, December 4, 2023, <https://stripe.com/resources/more/open-banking-explained#what-is-open-banking> [↑](#footnote-ref-61)
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63. Id. (“for small borrowers there is substantial evidence that the checking account hypothesis retains some validity”). [↑](#footnote-ref-63)
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79. Id. [↑](#footnote-ref-79)
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<https://www.consumerfinance.gov/about-us/newsroom/cfpb-proposes-rule-to-jumpstart-competition-and-accelerate-shift-to-open-banking/#:~:text=WASHINGTON%2C%20D.C.%20%E2%80%93%20Today%2C%20the,against%20companies%20misusing%20their%20data>. [↑](#footnote-ref-90)
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<https://www.federalreserve.gov/publications/2023-economic-well-being-of-us-households-in-2022-banking-credit.htm> [↑](#footnote-ref-191)
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213. Securities and Exchange Commission 17 CFR Parts 270, 274, and 279, Release Nos. 33-11211; 34-97876; IA-6344; IC-34959; File No. S7-22-21, Money Market Fund Reforms; Form PF Reporting Requirements for Large Liquidity Fund Advisers; Technical Amendments to Form N-CSR and Form N-1A, Daily liquid assets and weekly liquid assets are money market mutual fund holdings that can be readily converted to cash within one or five business days, respectively. Cash and securities that will mature or are subject to a demand feature exercisable and payable within one business day are examples of daily liquid assets. Government agency discount notes with maturities of 60 days or less and receivables scheduled to be paid within five business days are examples o weekly liquid assets under Rule 2a-7. [↑](#footnote-ref-213)
214. SEC Rule 2a-7. Generally speaking, retail MMFs are held only by natural persons (individual investors). Institutional MMFs are purchased by financial firms, nonfinancial firms, and other entities. Recently, the GAO found that imposing liquidity fees may contribute to runs on money market mutual funds by incentivizing investors to preemptively redeem their MMF shares in order to avoid incurring a liquidity fee. A similar MMF regulation, the imposition of so-called “redemption gates” or delays in investor access to their funds when MMFs are experiencing heavy redemptions, was found to have the same unintended consequence. Government Accountability Office, Money Market Mutual Funds, Pandemic Revealed Unresolved Vulnerabilities, GAO-23-105535, February 2023, at 1. [↑](#footnote-ref-214)
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225. Kashap, Rajan & Stein, supra, at 48. Kashap, Rajan and Stein argue that once a bank expends the resources necessary to investigate potential borrowers seeking contingent debt, this cost is “sunk,” so the bank “will clearly be at an advantage in making a term loan to the same borrower.” Id. [↑](#footnote-ref-225)
226. In particular, Leviten and [↑](#footnote-ref-226)
227. Kashap, Rajan & Stein, supra, at 50. [↑](#footnote-ref-227)
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