

Finance without Financiers*

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I see, therefore, the rentier aspect of capitalism as a transitional phase which will disappear when it has done its work... Thus [we] might aim in practice... at an increase in the volume of capital until it ceases to be scarce, so that the functionless investor will no longer receive a bonus; and at a scheme of direct taxation which allows the intelligence and determination and executive skill of the financiers... (who are certainly so fond of their craft that their labour could be obtained much cheaper than at present), to be harnessed to the service of the community on reasonable terms of reward.¹

INTRODUCTION: MYTHS OF SCARCITY AND INTERMEDIATION

A familiar belief about banks and other financial institutions is that they function primarily as “intermediaries,” managing flows of scarce funds from private sector “savers” or “surplus units” who have accumulated them to “dissevers” or “deficit units” who have need of them and can pay for their use. This view is routinely stated in treatises,² textbooks,³ learned journals,⁴ and the popular media.⁵ It also lurks in the background each time we hear theoretical references to “loanable funds,” practical warnings about public “crowd-out” of private investment, or the like.⁶

This, what I shall call “intermediated scarce private capital” view of finance bears two interesting properties. The first is that it lends a veneer of common sense, even “scientific” respectability to many costly presumptions and prescriptions where the adjudged feasibility of public, or the regulation of private, finance are concerned. Familiar examples include warnings that more public debt issuance will “burden

¹ J. M. KEYNES, *THE GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY*, Chapter 24 (1936).

² See, e.g., LUDWIG VON MISES, *THEORIE DES GELDES UND DER UMLAUFSMITTEL* (1912), trans. *THE THEORY OF MONEY AND CREDIT* 294 (1980); ANAT ADMATI & MARTIN HELLWIG, *THE BANKER’S NEW CLOTHES* 50 (2012); JONATHAN MCMILLAN, *THE END OF BANKING* 18 (2014).

³ See, e.g., ZVI BODIE & ROBERT C. MERTON, *FINANCE* 22-23 (2000); K. MATHEWS & J. THOMPSON, *THE ECONOMICS OF BANKING* 33 (2005); B. CASU ET AL., *INTRODUCTION TO BANKING* 18 (2006); S. G. CECHETTI, *MONEY, BANKING, AND FINANCIAL MARKETS* 39 (2008); RICHARD SCOTT CARNELL ET AL., *THE LAW OF FINANCIAL INSTITUTIONS* (5th ed., 2013), at 37, 39.

⁴ See, e.g., J. Gurley & E. Shaw, *Financial Aspects of Economic Development*, 45 *AM. ECON. REV.* 515 (1955); J. Gurley & E. Shaw, *Financial Intermediaries and the Savings-Investment Process*, 11 *J. FIN.* 257 (1956); James Tobin, *Commercial Banks as Creators of Money*, Cowles Foundation Paper 205, (1963); C. Sealey & J.T. Lindley, *Inputs, Outputs, and a Theory of Production and Cost at Depository Financial Institutions*, 32 *J. FIN.* 1251, 1252 (1977); E. Baltensperger, *Alternative Approaches to the Theory of the Banking Firm*, 6 *J. MONETARY ECON.* 1, 1 (1980); D.W. Diamond & P.H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 *J. POL. ECON.* 401 (1983); A. Kashyap et al., *Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking*, 57 *J. FIN.* 33 (2002).

⁵ See, e.g., Paul Krugman, “The Rage of the Bankers,” *New York Times*, Sept. 21, 2015 (“[B]anks make their profits by taking in deposits and lending the funds out at a higher rate of interest.”).

⁶ See, e.g., Landon Thomas, Jr., *Bond Investors are Skittish Over Emerging Markets*, *N.Y. TIMES* (Dec. 16, 2014); ETF Trends.com, *Skittish Investors Turn to Safe-Haven Government Bonds, ETFs*, *YAHOO FIN.* (Oct. 15, 2014); Donald P. Morgan & Kevin J. Stiroh, *Bond Market Discipline of Banks: Is the Market Tough Enough?*, FRBNY Staff Reports (Dec. 20, 1999); Christopher J. Mailander, *Tempering a Chill on Skittish Capital Markets: Illiquid Investments in the Wake of Global Volatility*, 13 *AM. U. INT’L L.* 379 (1997). On “crowding out,” see, e.g., Olivier Blanchard, *Crowding Out*, *THE NEW PALGRAVE DICTIONARY OF ECONOMICS* (2nd ed. 2008). More on “loanable funds” infra, Part II.

our grandchildren,” or that stricter rules governing home lending or other financial practices will “drain needed liquidity” from the markets.⁷ These are positions to which even self-styled “progressives” unwittingly commit themselves when they speak of capital as “scarce” or financial institutions and markets as mere “intermediaries” that link users to suppliers of pre-accumulated scarce private capital.⁸

The second interesting feature of the intermediated scarce private capital orthodoxy is that it is false. It profoundly misrepresents – indeed, it upends – the reality of modern financial systems. Many financial institutions do of course intermediate, but that is not what they are mainly about.⁹ Nor, relatedly, has finance capital lately been “scarce.”¹⁰ As any thoughtful financial market participant or regulator will (anxiously) attest, the cardinal feature of the American and global financial markets in recent decades has been their proneness to capital glut, attendant “desperate searches for yield,” and consequent misallocation and over-allocation of credit.¹¹

The dominant intermediated scarce private capital view of finance is, then, a *myth*. It is a myth whose widespread acceptance is no doubt convenient for certain *rentier* interests in contemporary “financialized” societies, but is a myth nonetheless. It is at best a holdover from earlier times: times when currencies were pegged to exogenously given stocks of precious metals, finance was indeed by and large privately supplied, and capital – at least liquid capital – was indeed scarce. But those times are gone.

This Chapter works to expose the intermediated scarce private capital orthodoxy for what it is and replace it with a more true-to-fact account of modern financial systems. In so doing, it demonstrates that a system of publicly generated and administered credit for the financing of enterprise not only is feasible, but is what we have now. This means in turn that our real reform challenge is not so much how to socialize and then democratize finance, as how to democratize and make more productive use of a financial system

⁷ For a case study of scarcity versus glut-based arguments in this connection, see, e.g., Robert Hockett, *Paying Paul and Robbing No One: An Eminent Domain Solution for Underwater Mortgage Debt*, 13 CURRENT ISSUES IN ECONOMICS AND FINANCE (Federal Reserve Bank of New York, 2013); also Robert Hockett, *We Don't Follow, We Lead: How New York City Will Save Mortgages Nationally by Condemning them Locally*, 124 YALE L. J. FORUM 131 (2014).

⁸ See, e.g., David J. Lynch & Cordell Eddings, *Obama Says Real Boss in Default Showdown Means Bonds Call Shots*, BLOOMBERG (Oct. 11, 2013); James Surowiecki, *Bonds and Domination*, N. Y. TIMES (Mar. 1, 1999).

⁹ The senses in which intermediation is derivative and secondary are discussed *infra*, Parts I through IV. A preliminary quantitative appreciation can be had by careful attention paid the Federal Reserve Board's *Financial Accounts of the United States*, available at <http://www.federalreserve.gov/releases/z1/current/z1.pdf>. For more on what seems to be prompting the stock-buyback wave, see, e.g., William Lazonick, *Stock-Buybacks: From Retain-and-Reinvest to Downsize-and-Distribute*, Brookings Paper, April 17, 2015.

¹⁰ Maldistributed and misallocated, yes; scarce, no. See, e.g., Daniel Alpert, Robert Hockett, & Nouriel Roubini, *The Way Forward*, white paper, New America Foundation (October 11, 2011), web-available at http://newamerica.net/publications/policy/the_way_forward. Also DANIEL ALPERT, *THE AGE OF OVERSUPPLY* (2013); and Ben S. Bernanke, *The Global Savings Glut and the U.S. Current Account Deficit: Remarks at the Sandridge Lecture, Virginia Association of Economists*, March 10, 2005, web-available at: <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>.

¹¹ Terms such as “glut,” “excess,” and the like must of course be understood by reference to a baseline. In this Chapter it is that quantum of investment capital necessary to fund reasonably pursuable improvements to material life on the one hand, and to provide adequate liquidity to secondary markets in financial instruments associated with such projects on the other hand. See Robert Hockett & Saule Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 201 (2016).

that already is by and large socialized.¹²

In my rendering, contemporary financial systems as we now find them are best interpreted as public-private *franchise* arrangements. Under the terms of the franchise, the sovereign public effectively licenses private financial institutions to dispense a vital and indefinitely extensible public resource – the sovereign public’s monetized full faith and credit. The key to ensuring a healthy financial system that continuously fuels real and inclusive economic development rather than mere secondary market speculation is first to understand the actual roles and comparative advantages of the public and private therein, then to capitalize on these roles and advantages for the benefit of all.¹³

If private “franchisee” institutions ultimately prove not to be up to their appointed task, then we shall do well either to supplement or to replace the franchise arrangement with one in which branch offices rather than franchisees of the public franchisor – offices like those envisaged by Professor Block in the companion piece to this essay – make our “on the ground” lending decisions. This Chapter shows that such supplementation is both possible and desirable.

The exposition proceeds as follows. Part I first sketches the basic frame of an updated, post-capital-scarcity view of publically underwritten finance, contrasting it with the dominant view just described. Parts II through IV then corroborate my revisionist view through careful examination of all corners of the contemporary financial system.

Part V closes with the vision of a forthrightly credit-generating and -allocating public institution: a “Public Investment Authority” (“PIA”), inspired by the New Deal era Reconstruction Finance Corporation (“RFC”). Such an institution would operate in tandem with the more localized institutions that Professor Block describes in the next Chapter, channeling the polity’s monetized full faith and credit directly to where it is most needed for purposes of inclusive, stable, and perpetual national development.

I. THEORETIC PRELIMINARIES: MODELS OF FINANCIAL FLOWS AND PRIVATE ROLES

I begin by indicating in summary form why the dominant, intermediated scarce private capital view of finance is incorrect, then sketch an alternative, more accurate picture.

A. *Three Models of Finance*

To show why the intermediated scarce private capital view of finance is incorrect, it is convenient to start with the pre-accumulation/scarcity component of that view – a component readily shown to be untenable – then turn to the role of the public, which is readily shown to be the source of non-scarcity. The dominant view’s scarcity assumption stems from its assumed picture of that which is lent or invested – that is, its view of finance or investment capital – as being pre-accumulated. This picture turns out for both theoretic and empirical reasons to be false, while two competing pictures capture the facts of modern finance more effectively. I’ll accordingly start with the three pictures.

1. The Credit-Intermediation Model

Call the first picture of finance the “(one-to-one) credit-intermediation” model. This is the image implicitly assumed by contemporary orthodoxy, and is accordingly the image likely to be familiar to most

¹² See Fred Block, *Financial Democratization and the Transition to Socialism*, this volume.

¹³ Exhaustive technical elaboration of this vision will be available in Robert C. Hockett & Saule Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1 (2017) (forthcoming).

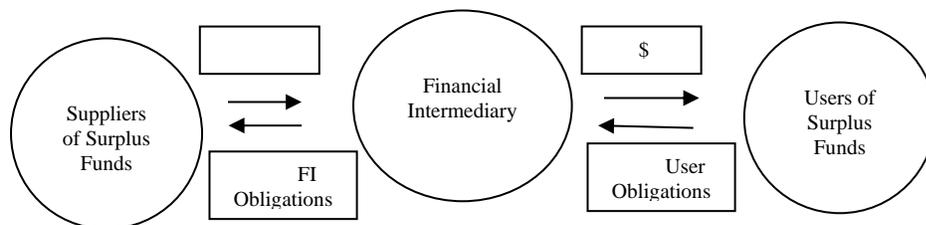
lay readers, not to mention mainstream economic, financial, and legal theorists.¹⁴

In the one-to-one intermediation picture, that which is lent or invested is always something that has been previously privately accumulated, hence is limited both by the finite stock of the latter and by the willingness of its private accumulators to invest it. Private parties primarily borrow from or invest in *one another* on this understanding, and one can only invest – hence can only borrow – what is “already there” in previously accumulated, privately owned form.¹⁵

Financial institutions accordingly figure into the one-to-one intermediation picture first as sites of accumulation – institutions in which “savers” or “surplus units” keep their accumulated funds. They then figure, as supplemented now by financial marketplaces as well, as sites of intermediation – sites where accumulators and would-be capital-users or “deficit units” can inexpensively “find” and “monitor” one another.¹⁶

Things can be represented as in *Figure 1*, in which pre-accumulation is depicted when we read left to right, and in which one-to-one intermediation is represented by the equal size of the discs.

Figure 1



Were the one-to-one intermediation picture an accurate representation of the financial system across the board, all financial institutions would effectively be variations on the mutual fund form. Financial markets, for their part, would comprise variations on peer-to-peer (“P2P”) lending platforms. These implications suffice of themselves to suggest that the credit-intermediation model might overlook something in modern financial systems.¹⁷ At the very least, it overlooks banking.

¹⁴ See sources cited *supra*, notes 2 through 5.

¹⁵ Private parties are the paradigmatic borrowers and investors; public parties enter the picture, if at all, as “special cases” layered on to the central case of private parties.

¹⁶ For more on the “search-cost minimizing” and “monitoring” functions of financial institutions on the orthodox understanding, see, e.g., D.W. Diamond, *Financial Intermediation as Delegated Monitoring*, 51 *REV. ECON. STUD.* 393 (1984); D.W. Diamond, *Monitoring and Reputation: The Choice Between Bank Loans and Directly Placed Debt*, 99 *J. POL. ECON.* 689 (1991); FRANKLIN ALLEN, *FINANCIAL INTERMEDIATION* (2000). See also CARNELL ET AL., *supra* note 3 at 39-40; and MCMILLAN, *supra* note 2 at 15-20

¹⁷ I note in passing here that the renewed vogue for 1930s-style “narrow banking” proposals, as well as cognate proposals like that of MacMillan as cited *supra*, note 2, amount to calls to *make* the one-to-one intermediation view correct of the financial system, and hence to *make* all financial institutions into mutual funds.

2. The Credit-Multiplication Model

A little reflection – or even exposure to a celebrated Frank Capra film – suffices immediately to suggest that the one-to-one intermediation model cannot be a complete portrayal of the financial-institutional landscape.¹⁸ For not all financial institutions are mutual funds.

The most familiar counterexample is the commercial bank, which at least some people know to engage – or in the past to have engaged – in a form of finance known as “fractional reserve banking.”¹⁹ In the fractional reserve picture, the banking system lends out more than it receives in the form of investor deposits.²⁰ It holds only enough of the latter to handle anticipated daily withdrawals, drafts, or similar obligations, and lends out the rest. “The rest,” crucially, can and does serve as the basis of additional lending, such that an originally deposited monetary “base” can be multiplied many-fold. We can accordingly call this picture the “(one-to-many) credit-multiplication” model.

The illustration of credit-multiplication through fractional reserve banking typically given in treatises begins with a bank that holds 10% of its deposit liabilities in reserve.²¹ The remaining 90% is lent out, with borrowers depositing that lent remainder in their own accounts in the banking system.²² The banks that receive this 90% in the form of deposits then lend out another 90% of the 90%, then 90% of the additional 81%, then 90% of the additional 72%, ... and so on, to the point where an initial depository base is multiplied nine-fold in aggregate.²³

Things can accordingly be represented as in *Figure 2*, in which pre-accumulation is again depicted when we read left to right, and in which multiplication is represented by the larger size of the disc on the right relative to the disc on the left. It should be noted, though, that were *Figure 2* to be adapted to represent the financial system as a whole on the credit-multiplication model, and were credit-extensions to take the form of opening or crediting accounts on behalf of the borrowers as we shall find to be the case with banking, then *Figure 2* would have to take the form of a two-phase picture.

The first phase, in which pre-accumulated finance capital is required to set the multiplication process in motion, would be represented as in *Figure 2*. The second phase, in which loans are extended and themselves take the form of deposits, would then be represented by a figure in which the disc at the left is similarly sized to that on the right – as in *Figure 3* below, to which we turn next.

¹⁸ The Frank Capra allusion is to *It's a Wonderful Life* (1946), the bank run scene from which is iconic.

¹⁹ “In the past” because, as Part II will indicate, few bank-regulatory regimes require fractional reserves any longer. For early exponents of the fractional reserve view of banking, see, e.g., ALFRED MARSHALL, *PRINCIPLES OF ECONOMICS* (1890); C.A. PHILLIPS, *BANK CREDIT* (1920); and PAUL SAMUELSON, *ECONOMICS* (1948). More recent exponents include JOSEPH STIGLITZ, *ECONOMICS* (1997) and, at least in part, CARNELL ET AL., *supra* note 2, and MACMILLAN, *supra* note 3.

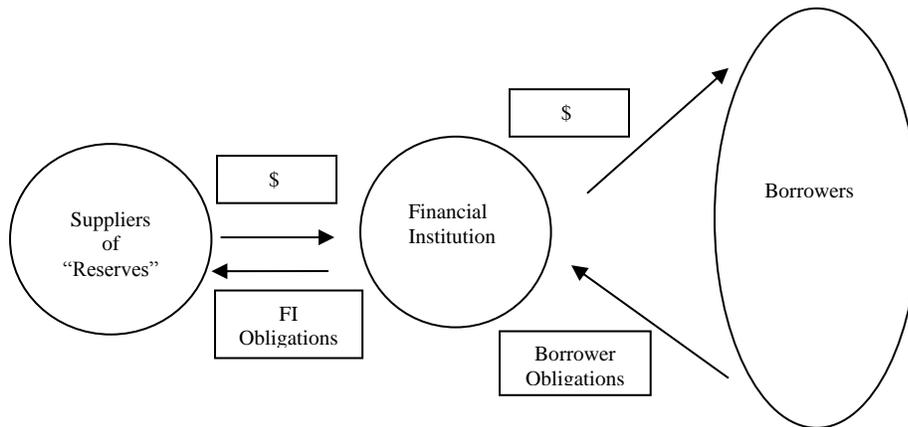
²⁰ *Id.* Investor deposits, in their familiar “demand deposit” form, can in some cases be considered callable loans lent to banks by depositors. Because, as we shall see, loans made by banks also take the form of demand deposits opened by banks for their borrowers, however, it is potentially misleading to think of all deposits as loans to, as distinguished from liabilities of, the bank.

²¹ See, e.g., FRIEDRICH VON HAYEK, *GELDTHEORIE UND KONJUNKTURTHEORIE* 90 (1929).

²² *Id.*

²³ *Id.*

Figure 2



The credit-multiplication model, were it accurately to capture much of what occurs in the financial system, would of course significantly falsify the one-to-one credit-intermediation model.²⁴ It assumes with the latter model that finance capital must be privately pre-accumulated before credit can be extended, but it does not assume that only that which has been previously accumulated can be lent or invested. The latter figures as a multiple of the former in the credit-multiplication picture, with the multiplicative factor inversely proportional to the reserve ratio.

Two implications of these observations prove important in what follows. The first is that, for any x representing the percentage of pre-accumulated funds that financial institutions hold in reserve, one hundred minus x will represent the percentage of credit outstanding that is *not* pre-accumulated finance capital. The multiplicative factor “levers up” that which has been previously accumulated, and diminishes putative capital scarcity proportionally even if not quite eliminating it.

The second, more far-reaching implication is that, since the 100 minus x percent of credit outstanding is not pre-accumulated and the x can in theory be made arbitrarily small, credit cannot actually be dependent upon privately pre-accumulated “loanable funds” at all.²⁵ In other words, finance capital need not actually be scarce even in the more limited sense implied by the credit-multiplication model. This takes us directly to the third model of credit.

3. The Credit-Generation Model

The fact that x can be made arbitrarily small in the fractional reserve banking story raises the prospect that credit-extension, and hence the supply of financial capital, might not be scarce in any delimitably precise sense at all. Finance capital in the form of credit might instead be more accurately said to be “generated” by lending institutions than “intermediated” or “multiplied” by them. This is the prospect

²⁴ This does not prevent some scholars from proffering the one-to-one intermediation and credit-multiplication models simultaneously. See, e.g., CARNELL ET AL., *supra* note 3 at 45 (“[B]anks need to keep only a fraction of total deposits on reserve as cash. . . They can invest the rest in loans or other illiquid but profitable ventures. Only because of fractional reserves can banking be highly profitable.”).

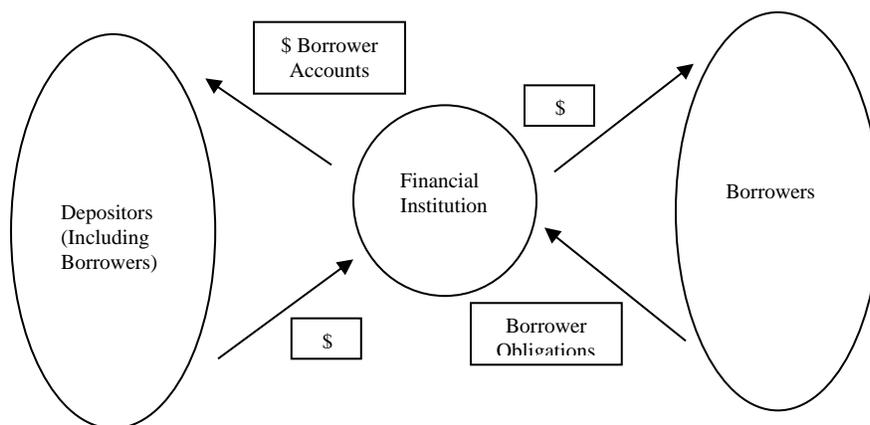
²⁵ “Loanable funds” is the orthodox term-of-art for that which is pre-accumulated and then invested. More on this *infra*, Part II.

captured by what we can call the “(none-to-many) credit-generation model” of finance.

On the credit-generation picture, credit outstanding is not really dependent upon – or, therefore, limited by – pre-accumulated investment capital at all. It is limited only by investment opportunities that certain kinds of institution – namely, those authorized to credit or open borrower accounts whose contents are spendable as money – view as potentially profitable.²⁶ Credit is, in other words, endogenous rather than subject to exogenously given, privately pre-accumulated funds.²⁷

Things can accordingly be represented as in *Figure 3*, in which pre-accumulation now drops out of the picture with what used to be the small disc on the left hand side in *Figures 1* and *2*, and in which indefinite extensibility is represented by the growing size of the discs to right and left as loan volume grows on the right, with loan proceeds then deposited in accounts represented by the disc on the left. Note that now, unlike as in *Figures 1* and *2*, causation runs from right to left rather than left to right.

Figure 3



Now the qualifier noted a moment ago – “those authorized to credit or open borrower accounts ... spendable as money,” which capacity is represented on the left hand side of *Figure 3* – proves crucial as we turn from the scarcity component to the privateness component of the intermediated scarce private capital orthodoxy. For the “authorization” and “spendability as money” components of that qualifier signal an ineliminable role played by the public in constituting finance.

B. Which Model? The Public Core of “Private” Finance

Where credit-flows conform to the credit-multiplication or -generation models as they do in all modern financial systems, the public inevitably becomes the financial system’s principal protagonist. This Section

²⁶ The credit-generation model has a venerable pedigree and is probably the oldest view of banking in particular. It is also the view held, significantly, by most bankers and central bankers themselves.

²⁷ Of course the resources that one acquires or puts to use with borrowed funds have been pre-accumulated. But the point here is simply that borrowed funds, which are claims on such resources, need not be pre-accumulated at all. They are generated the moment that spendable credit is extended.

first explains why, then explains how – defining what can be called public “accommodation” and “monetization” of initially privately extended credit.

1. Why Public Underwriting Becomes Inevitable

The discussion just above spoke of entities “authorized to credit or open borrower accounts ... spendable as money.” “Authorization” and “spendability as money” signal the portals through which the public enters the realm of finance. To begin with “authorization,” few institutions are able or permitted, in modern jurisdictions, to engage unconditionally in lending or other forms of investing on a large scale for profit. Whether they deal in their own money, “other people’s money,” or “newly created” money, large-scale financial institutions are conditionally licensed and closely monitored, precisely because their actions affect not only immediate counterparties, but also large numbers of innocent third parties. They generate positive externalities upon which third parties come to depend, meaning that their failures occasion significant *negative* externalities.

Moving from that familiar observation to the perhaps less familiar point about “spendability as money,” even fewer institutions than are authorized to invest on a large scale for profit are authorized to open transaction deposits for others that will be publicly recognized as legal tender. If Citizen Bentham purports to open a transaction account for Anscombe and provides her with checks or a magnetic card that he says she can use to make payments to others, Anscombe is in for an unpleasant surprise when she attempts to use either in making purchases at the Duane Read drugstore across the street.

Only a comparatively small number of publicly authorized institutions in any modern jurisdiction are authorized to open transaction deposits for others that will be publicly recognized as legal tender – i.e., as money. If these same institutions are permitted to extend *loans* in the form of such deposits, as is the case in all modern jurisdictions, then they are authorized to extend what we can call *monetized credit* – something that can function as finance or investment capital. If in turn these institutions are authorized to extend such credit on their own accounts rather than in the form of one-to-one intermediation as described above, then they are able to issue what is called “credit-money” either in multiplicative or indefinitely generable form as described above.

Finally, if the private liabilities that such institutions take on in issuing credit-money are for some reason converted to public liabilities, as again is the case in all modern jurisdictions, then that which these institutions are issuing – the form that their finance capital will ultimately take – will in the final analysis be the full faith and credit of the sovereign that authorizes and backstops their activity. These institutions will in effect be franchisees dispensing a resource ultimately provided by the sovereign franchisor – its own monetized full faith and credit.²⁸ The franchisor in such circumstances will have to take care that its resource is not over-dispensed or misallocated, particularly in light of the over- and mis-allocative incentives that we shall find this form of privatized seignorage entails.

“Franchise finance” of this kind becomes all but inevitable when credit-flows move from conformity with the credit-intermediation picture to conformity with the credit-multiplication or -generation pictures. One reason is that those public necessities which are an elastic currency and a payments system are fundamentally dependent upon the continued functioning of those institutions that multiply or generate credit-money.²⁹

²⁸ Any profits earned by the franchisee institutions will accordingly amount to privatized seignorage, more on which *infra*.

²⁹ Another reason is that the public acts to determine interest rates in credit-money systems, which itself requires

It accordingly becomes imperative, for an economy that would reap the growth benefits wrought by multipliable or generable yet stable credit-money and a payments system, that the sovereign undertake *ex ante* to recognize certain private liabilities associated with credit-multiplication or -generation as liabilities of its own.³⁰ For the same reason, it is equally imperative that these accommodated liabilities be spendable as money. That takes us to the phenomena of what we can call “accommodation” and “monetization.”

2. The Twin Faces of Public Underwriting: “Accommodation” and “Monetization”

Accommodation and monetization are the processes through which the sovereign enables credit to be indefinitely generated in immediately spendable form, by committing *ex ante* to convert certain private liabilities into public liabilities that serve as money. The sovereign’s acting as accommodator, which it must do in order for credit-multiplication or generation and credit-money growth to proceed reliably, is what renders the sovereign a franchisor where finance is concerned.

As Parts II through IV will demonstrate in detail, the principal components of modern financial systems jointly constitute such franchise arrangements within all jurisdictions that issue their own currencies and rely upon stable credit-multiplication or -generation to fuel stable growth. Under the terms of each such arrangement, the sovereign public, as franchisor, effectively licenses private financial institutions, as franchisees, to dispense what it pre-commits to convert into the sovereign’s own monetized full faith and credit.

In the United States, which will serve as this Chapter’s principal exemplar, public full faith and credit flow through the financial system in two principal forms. The first comprises directly issued public liabilities: Federal Reserve notes and their bank-depository equivalent; U.S. Treasury securities; and some additional federal Agency securities.³¹ The second, quantitatively much more significant yet less commonly recognized form of public full faith and credit are publicly “accommodated” and “monetized” *private* liabilities – specifically, deposit liabilities of the kind described just above.

In the U.S., accommodation occurs when a public authority – typically the Federal Reserve (the “Fed”) – takes on a privately issued debt liability – often but not always a bank liability – as a liability of its own.³² “Monetization,” in turn, occurs when the ultimate beneficiary of accommodation – a borrower – is able to spend the proceeds of the accommodated loan as if they were currency. When a public instrumentality in the U.S. directly or indirectly accommodates and monetizes a private liability, it effectively extends the full faith and credit of the United States.

Things can be broadly depicted as in *Figure 4*, in which a financial institution extends credit-money to borrowers in exchange for borrower liabilities, then monetizes those liabilities through a public institution that “accommodates” the initial credit extensions by crediting lending institution accounts

“accommodation” of the kind to which I am now alluding. More detail on these imperatives *infra*.

³⁰ The thoughtful reader might now be thinking about deposit insurance. More important, as next described, is the sovereign’s guarantee that drafts drawn on accounts – be they pre-accumulated or loan-opened accounts – will clear.

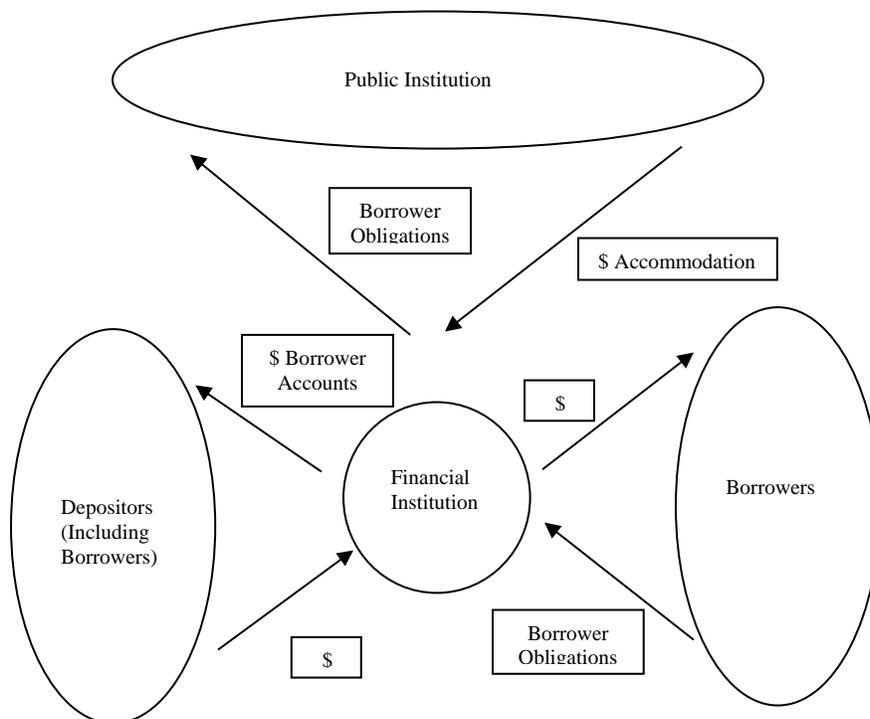
³¹ For example, Fannie Mae or Freddie Mac bonds.

³² As described below, this routinely happens when a U.S. bank extends credit to a borrower, and the Fed accommodates it by crediting the bank’s reserve account on its books. *See infra* Part II. But accommodation also happens outside the banking system. *See infra* Parts III and IV.

through which drafts clear.³³

Note that, in contrast to *Figures 1* and *2*, where credit flows originate on the left hand side and work their way to the right, in *Figure 4* we have a double movement of sorts. On the one hand, flows originate on the right and proceed simultaneously leftward and upward. On the other hand, the public's pre-committing to what occurs at the top enables the great bulk of what occurs on the right, and hence on the left, to occur at all.

Figure 4



The Fed and the Department of Treasury (“Treasury”), as Parts II through IV will show, are the two principal federal instrumentalities that act on behalf of the American public as sovereign franchisor in channeling and managing the flow of public full faith and credit throughout the financial system.³⁴ Their actions are most readily observable in the banking sector as discussed in Part II, where the Fed directly and routinely accommodates and monetizes public and private credit alike.

The same dynamics are also at work in the capital and other financial markets treated in Parts III and IV, however. For Fed accommodated bank credit flows through those markets themselves. And the Fed now directly accommodates the monetized lending activities of much more than traditional banking institutions – so-called “shadow banks” – in those markets as well. The next several Parts turn to tracing

³³ Further detail on the mechanics in Part II.

³⁴ Other public instrumentalities that perform these functions in more narrowly drawn circumstances include, e.g., the government sponsored enterprises (“GSEs”) and the Federal Deposit Insurance Corporation (“FDIC”). I note their roles at relevant points below, but concentrate mainly upon the Fed and the U.S. Treasury.

these flows in detail.

II. THE CORE OF THE FRANCHISE: BANKS, CENTRAL BANKS, PUBLIC FULL FAITH & CREDIT

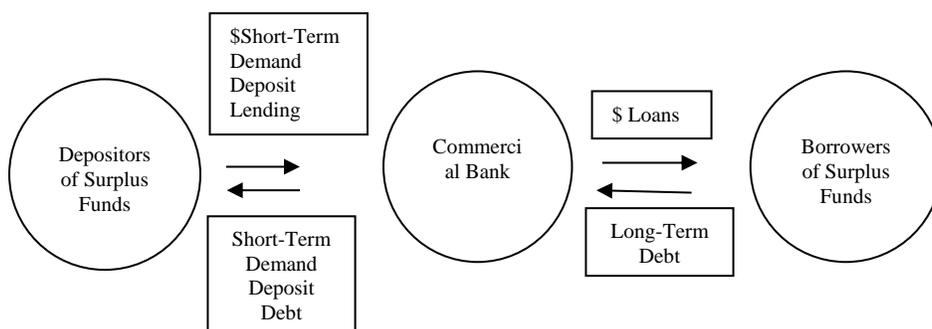
I'll start with the banking system, which occupies the core of the modern financial system. The intermediated scarce private capital orthodoxy portrays banks as paradigmatic financial intermediaries operating on the model of *Figure 1*. They are said to engage in qualitative asset transformation, enabling depositors' privately supplied, short-term "loanable funds" to finance longer-term lending on a scale required first to build, then to sustain a modern economy.³⁵ This Part shows that view to be false. It shows that a modern bank's primary – or in banking law parlance, "special" – role is that of licensed private purveyor of the public full faith and credit on the model of *Figure 4* above.

A. Banks: Loans Make Deposits

1. The Orthodox View: Deposits Make Loans

On the received understanding, banks link private accumulators of surplus financial capital with households, firms, and sometimes government instrumentalities that require temporary access to this capital. Pre-accumulated funds are assumed to be deposited in banks in the form of short-term demand deposits, which then lend the funds out on a one-to-one basis in the form of longer-term loans. Things look, in other words, much as in *Figure 1*, save that the institution in question, and the assets and liabilities in which it traffics, receive more institution-specific names, as in *Figure 5*.

Figure 5



Interest rates and other financing costs emerge as *prices* on this understanding. They amount to money rental rates, determined by the confluence of fund-supply and fund-demand just as other prices are determined by the confluence of x -supply and x -demand for any x . This is the venerable, if false, "loanable funds" model of banking, pursuant to which "deposits make loans," savings determine investment, and funding costs are just rental rates that equilibrate privately provided fund-supply with privately and publicly originating fund-demand.

³⁵ See sources cited *supra*, notes 2 through 5. Also STUART I. GREENBAUM & ANJAN V. THAKOR, CONTEMPORARY FINANCIAL INTERMEDIATION 55-58 (2007).

2. The Institutional Facts of the Matter: Loans Make Deposits

The intermediated loanable funds view of banking is incorrect. Indeed it stands truth on its head, in effect reversing the causal directionality of actual banking relations. The best way to substantiate this claim is by reference to the mechanics of a simple bank lending transaction.

When a bank receives application from a creditworthy business or household to borrow, it does not peer into a vault to determine how much in the way of depositors' funds are on hand to lend out to others, then put available such funds at the disposal of the borrower. Nor does the bank engage in any contemporary analogue to that act – checking its reserve balance at the regional Federal Reserve Bank and then using the available balance to transfer funds to the borrower, for example.³⁶ Instead the bank simply credits a borrower account (either newly opened or pre-existing), then books this transaction as an asset and a liability of its own, on the one hand, and an asset and a liability of the borrower, on the other hand.³⁷

The transaction books as an asset of the bank because the bank is now owed on the loan – it holds a promissory note issued by the borrower. It books as a liability of the bank because the bank must now honor all drafts drawn on account by the borrower up to the loan amount. At the same time, the transaction books as an asset of the borrower because the borrower now owns, and is able to draw upon, a new or newly credited account. It books as a liability of the borrower because the borrower must repay the bank in accordance with the terms of the promissory note.

As a matter of accounting, this transaction does not violate any Newtonian law-like principle of, say, the “conservation of assets relative to liabilities.” There continues to be a one-to-one correspondence between assets and liabilities, which by accounting convention always are mutually offsetting. Nevertheless, as a result of this simple transaction, there is now more money at work in the economy, as routinely tracked by that measure known as “bank-,” “credit-,” or “broad-money.”

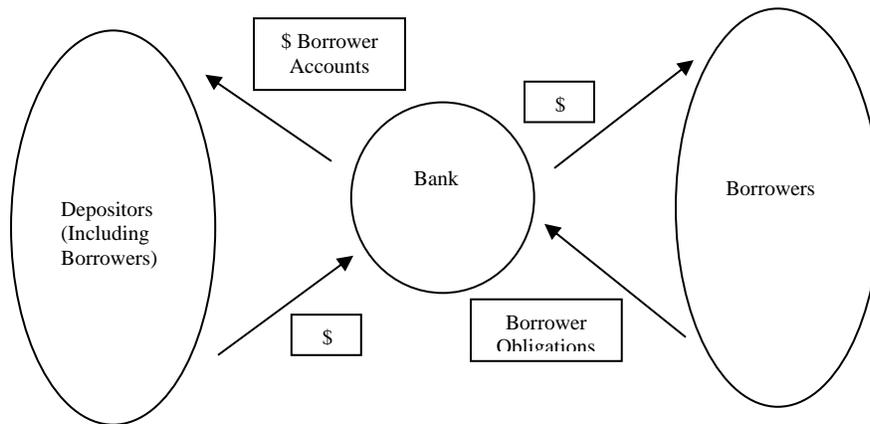
In this sense the original loan transaction does effectively violate (at least until the loan is repaid) whatever any monetary counterpart to the Newtonian principle of “conservation of energy” might be called. In making the original loan, the bank has temporarily generated a form of “bank-” or “credit-money” out of the proverbial “thin air.” It has not simply transferred a pre-accumulated quantum of “loanable funds” from depositors to borrower, thereby “intermediating” between them on the model of *Figures 1* and *5*. It has temporarily increased – for as long as the loan remains unextinguished – the aggregate credit-money supply, i.e., the supply of finance capital, along the lines pictured in *Figure 3* and its now further specified counterpart, *Figure 6*.³⁸

³⁶ The latter prospect is envisaged by credit-multiplication model described *supra*, Part I.A.

³⁷ For an accessible account of the mechanics of bank lending, see Michael McLeay et al., *Money Creation in the Modern Economy*, BANK OF ENGLAND QUARTERLY BUL., Q1 (2014). An abbreviated description of how bank lending works, though it overstates the reserve and capital requirements to which the bank likely is subject in the U.S., is John Carney, *Basics of Banking: Loans Create a Lot More than Deposits*, CNBC, 26 February 2013. See also John Carney, *What Really Constrains Bank Lending?* CNBC, 5 April 2012; and SCHUMPETER, *supra* note 6.

³⁸ See sources cited *supra* note 37.

Figure 6



It should be noted that the introduction of reserve requirements, capital requirements, or both does not appreciably alter the structure of *Figure 6*. These forms of regulation simply are means of minimizing the risk that a privately owned bank will over-dispense the monetized full faith and credit of the sovereign – either by lending it out to too many parties who are unable to return it in a timely manner or at all, or by lending it out at a rate that stokes inflationary pressures by exceeding the rate of productivity growth in the real economy.

Reserve requirements deal with the first component of the first risk – untimely repayment and consequent liquidity risk – while capital requirements deal with the second risk – non-repayment or inflationary over-extension. Banks that violate such requirements, again, will draw regulatory sanction, but not franchisor default on the liabilities generated by the lending transactions. Hence these requirements are simply means by which the sovereign attempts to modulate the dispensing of that resource it administers – again, its own monetized full faith and credit.

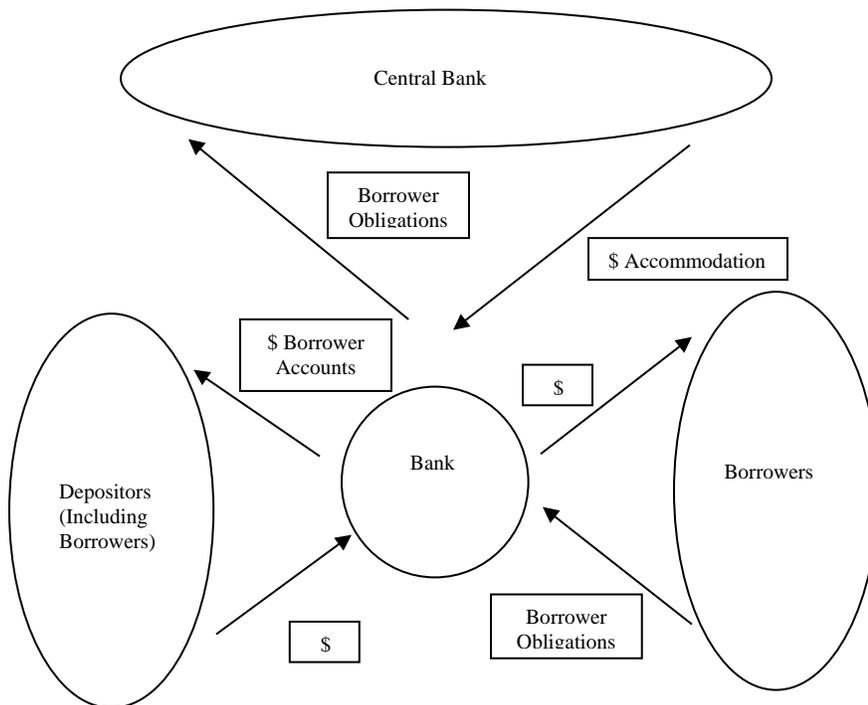
B. Central Banks: Deposits Are Money

1. The Central Bank as Accommodator

As if to underscore this last point, the *central bank or monetary authority* in any modern jurisdiction that works to maintain a payments system and manage its money supply and corresponding interest rates will have to *accommodate* acts of money-creation undertaken by privately owned lending banks. This it will do by crediting a reserve account in the name of the lending bank, effectively converting the latter bank's new deposit liability into a liability of its own.

Things will accordingly move quickly from the way they are depicted above in *Figures 3* and *6* to the way they are depicted in *Figures 4* and *7*, with the latter simply replicating the former while using labels more specific to banking.

Figure 7



“Accommodation,” again, is the act by which the central bank transforms a private liability (that of the lending bank) into a public liability (that of the central bank). The fact that accommodation of this sort is part of the business of banking itself, in the full contemplation of which banks are publicly licensed to extend credit in the first place, makes very clear the sense in which private banks are dealing in public credit. Their lending, indeed their very business model, is predicated upon the pre-established practice of central bank accommodation.

That central bank accommodation constitutes “part of the business of banking” is an unavoidable result of the fact that, in most modern economies, the central bank or monetary authority maintains an overnight interbank lending rate target and/or administers a payments infrastructure on which privately drawn checks clear at par.³⁹ Without accommodation, some checks drawn on lending banks would fail to clear. That would subvert the payments system and, with it, the essential functioning of the real economy.⁴⁰ Central banks are accordingly constrained to accommodate to ensure effective clearing, hence to ensure

³⁹ For general overview of how the Federal Reserve System maintains interbank lending rates and administers the U.S. payments system, see e.g., BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, *THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS* (2005). Clearing elicits similar forms of “accommodation” of “shadow bank” loans. See *infra*, Part III.

⁴⁰ For more on these mechanics and what drives them, see, e.g., J. Benes & M. Kumhof, *The Chicago Plan Revisited*, IMF Working Paper No. 12/202 (2012); U. Bindseil, *The Operational Target of Monetary Policy and the Rise and Fall of the Reserve Position Doctrine*, ECB Working Paper No. 372 (2004); P. Disyatat, *Monetary Policy Implementation: Misconceptions and Their Consequences*, BIS Working Paper No. 269 (2008).

smooth transacting.⁴¹

So the central bank will accommodate the private bank's loan by crediting that bank's reserve account, thereby enabling checks drawn on the new (or newly augmented) account by the original borrower from the bank to clear.

Because this act also enables borrowers to *spend* out of their new or newly credited demand deposit accounts, the act of *accommodation* here also amounts to an act of *monetization*. The central bank in effect will be *publicly monetizing* the promissory note privately issued and signed by the individual borrower in favor of the lending bank when completing the loan transaction. In this sense the central bank will be placing the full faith and credit of the nation behind the credit of the individual – publicly monetizing the privately issued financial instrument that is the borrower's promissory note.

To put the point another way, the private borrower “securitizes” her own creditworthiness in issuing her promissory note to the private bank, while the public central bank in turn “monetizes” that promissory note in “accommodating” the private bank's crediting an account of the private borrower.⁴² In this sense, the private bank is simply assisting the public central bank in deciding which privately issued promissory notes to monetize. The interest it earns on the loan is its payment – its privatized seigniorage – for assisting the central bank in this way.

All of this is practically, if perhaps not quite theoretically, understood by the relevant parties to any bank lending transaction in advance. It is all part of the well-established arrangement between the central bank, publicly-chartered privately-owned banks, and the banks' borrowers. Hence it is not only the case that loans make private deposits, rather than the other way round, but is also the case that privately originated loans can make public central bank reserves, rather than the other way round.⁴³

A question might now arise: How is all of this possible? Are there no *limits* to this form of spontaneous credit-generation and money-creation, if the process is not tethered to deposited pre-accumulated “loanable funds”?

The answer that will occur to some is that fractional reserve banking must have something to do with all of this, in a manner that gives rise to a “credit-multiplication” or “money multiplier” effect as described in Part I.A.2 and depicted in *Figure 2*. This credit-multiplication story would itself, as noted earlier, falsify a crude version of the one-to-one intermediated loanable funds model of banking. As it happens, however, things are yet worse for the orthodox, intermediated scarce loanable funds understanding of banking.

The reason is two-fold. First, as noted before in Part I.A, no deposits are necessary, strictly speaking, for banks to dispense publicly accommodated and monetized credit in the manner described just above. Deposits, do not “make” loans in the relevant sense, but are made *by* them.⁴⁴ In this sense, banks engage in something much “bigger” even than credit-*multiplication* as envisaged in the money multiplier story

⁴¹ Again, a counterpart phenomenon is at work in the “shadow banking” markets, discussed below, a fact which offers at least one clue as to why shadow banking is labeled “banking.”

⁴² For a more technical description of “securitization,” see *infra* Part IV.

⁴³ S. Carpenter & S. Demiralp, *Money, Reserves, and the Transmission of Monetary Policy: Does the Money Multiplier Exist?*, 34 J. MACROECON. 59 (2012); F. Kydland & E. Prescott, *Business Cycles: Real Facts and a Monetary Myth*, 14 FED. RES. BANK. OF MINN. Q. REV. 3 (1990).

⁴⁴ Recognition of the severability of lending from deposit-taking also underlies “narrow,” “safe,” “limited purpose,” and some “public” banking proposals.

described above; they engage in credit-generation, as also described above.

This finds stark regulatory expression in the fact that for banking systems that continue to use them, reserve requirements are simply a liquidity-maintenance, not solvency-protection, measure, and do not kick in at all until high deposit thresholds are reached.⁴⁵ They have nothing to do with the lending-cum-money-generating process. This grows especially clear through reflection on the fact that many financially well-developed jurisdictions – notably the U.K. and Canada – impose no reserve requirements at all.

Second, as noted above, central banks typically are constrained by their clearing functions to accommodate heightened lending and money-generation by private banks in any event, which we've just seen them to do simply by crediting those banks' reserve accounts by fiat. Violation of a reserve requirement, therefore, will trigger an *ex post* regulatory sanction, but will not short-circuit or otherwise prevent any act of bank money-creation.

The same is generally true of capital regulation that limits bank investments to a multiple, not of deposits, but of shareholder equity and subordinated debt, in the name of bank solvency rather than liquidity. Violation of such requirements will trigger a sanction and even, if it persists, possible license-revocation and closure, but will not retroactively cancel any accomplished act of credit-extension hence money-generation by a banking institution.

2. The Central Bank as Monetizer

The discussion thus far highlights something important yet underappreciated about the banking system. It shows that privately owned banks dispense not privately deposited “loanable funds” but what is effectively an indefinitely extensible, publicly modulated *public resource* – a resource on which they are publicly licensed, moreover, to charge private seigniorage rents. In this sense, the banks are best viewed as privileged outlets for the monetized full faith and credit of the United States – i.e., as dollar franchisees.

The sense in which the banks are dispensing, by monetizing, the full faith and credit of the United States is discernible in the typical loan transaction described above. The *bank's* newly undertaken *private* liability (the transaction account opened or credited for the borrower) immediately becomes the *central bank's accommodation* liability, which is monetized in virtue of the borrower's capacity to spend out of the newly opened or credited account just as surely as if she had received Federal Reserve Notes – i.e., paper currency units – themselves. Private banks, then, are effectively purveying public credit.

As privileged purveyors of the monetized full faith and credit of the United States, explicitly accommodated and protected by the central bank, privately owned banks constitute the inner core of the financial system. Not surprisingly, other financial institutions and markets tend to grow around, attach themselves to, and even to work toward functional *amplification and replication* of the core banking franchise – particularly in boom times, when credit-growth tends endogenously and procyclically to self-amplify. And, of course, they often attempt to do so without paying the “franchise fees” actual banks pay in the form of chartering conditionality and close regulation.⁴⁶ That takes us on to the capital and “shadow

⁴⁵ In the U.S. for example, they do not kick-in until the bank maintains transaction accounts aggregating to \$15.2 million, whereupon they remain at 3% until the threshold of \$110.2 is reached, whereupon they rise to 10%. See Bd. of Gov. of Fed. Res., Reserve Maintenance Manual, available at <http://www.federalreserve.gov/monetarypolicy/reservereq.htm>.

⁴⁶ The conventional explanation of careful bank regulation portrays the standard regulatory requirements – chartering, enumerated powers, portfolio regulation, capital regulation, and expedited liquidation in bankruptcy – as strings attached to receipt of federal deposit insurance. That is of course partly correct. But careful bank regulation

banking” markets.

III. THE CAPITAL MARKET PERIPHERY AND THE BANKING CORE: PUBLIC CREDIT UNDERWRITES PRIVATE CREDIT

Those who are at least passingly familiar with the mechanics of banking and central banking as described above might endorse the account of finance as a franchise thus far and yet now pose a series of skeptical questions. Don’t the *capital and money* markets constitute a *parallel* financial system that more closely conforms to the traditional picture of finance as one-to-one intermediated, scarce private capital?⁴⁷ Don’t they present a case in which unambiguously private “deficit units” – or “issuers” now – really do seek funding from unambiguously private “surplus units” or “investors” who purchase their securities with pre-accumulated funds? And doesn’t the much-touted trend toward financial “disintermediation” in recent decades mean that finance is becoming less bank-centered and more “peer-to-peer” in any event?⁴⁸

As noted earlier, there is no need to deny that financial intermediation occurs in financial markets. The claim of this Chapter is that financial intermediation is not the defining or, even, the most significant form of credit-flow underway in our financial system – certainly not in the banking markets, but also not in the capital markets as we shall now see. What flows more importantly through the financial markets is, once again, the full faith and credit of the sovereign.

The precise channels through and mechanisms by which public credit flows and finds use outside the formal banking system are more subtle and difficult to trace than the mechanics of traditional banking as described in Part II. That might partly account for the persistence of the intermediated scarce private capital myth among those who study and pronounce on the capital markets. Nevertheless, they are traceable. This Part traces them through the capital markets. The next then traces them through the so-called “shadow banking” sector that has developed within those markets.

A. *The Orthodox View: Accumulators Finance Firms*

The received understanding of capital markets takes them for sites at which those who have pre-accumulated scarce private capital “meet” those – primarily firms – that have need of such capital to finance their growth and operations. Credit thus flows in this picture just as it does in the one-to-one intermediated-credit model discussed in Part I.A.1 and illustrated in *Figures 1* and *5*.

All that changes is that “the market” becomes the “financial intermediary” in question, the “surplus units” become “capital investors,” and the “deficit units” that seek use of scarce capital come to be called “issuers” – so named because the instruments of their borrowings are the financial securities they issue. Things look, in other words, as depicted in *Figure 8*.

antedates deposit insurance, precisely because banks are granted credit-money-generation authority.

⁴⁷ By convention, “money markets” are markets in instruments with maturities of one year or less. “Capital markets” are markets in instruments with maturities greater than one year.

⁴⁸ “Disintermediation” refers to a putative trend underway in the financial markets to conduct finance in more direct, “peer-to-peer” fashion rather than relying upon intermediation by financial institutions.

Figure 8



The analogies between capital markets and financial institutions on the orthodox understanding go even further than thus far portrayed. Hence, for example, capital markets with known locations are said to reduce “search costs” just as do financial institutions – by functioning as sites at which surplus and deficit units know they can find one another.

Likewise, just as financial institutions on the orthodox understanding minimize pro rata “monitoring costs,” so too do capital markets – in this case via the “price discovery” function said to be performed by “deep” secondary markets in which many parties buy and sell previously issued securities on the basis of continuously leaking, value-germane information. Indeed, one of the cardinal advantages of this so-called “disintermediated” mode of finance is said by enthusiasts to be its efficiency in aggregating Hayekian information – an efficiency that no one person or firm functioning as an intermediary can match.

It should be noted that neither the search-cost-economizing nor the monitoring-cost-minimizing roles of financial institutions and markets bear any necessary connection to the one-to-one intermediated-credit model of financial flows discussed above in Part I and portrayed in Figure 1. Searching and monitoring must be done by investors who borrow just as by investors who deploy pre-accumulated funds.

All that might differ between the two cases is the degree of risk-aversion experienced by investors of scarce funds on the one hand and indefinitely extensible funds on the other. That distinction will prove important below in tracing normative implications from the franchise view of finance, but it has no bearing at all on the accuracy or inaccuracy of the one-to-one intermediated-credit model of capital markets.

As it happens, capital markets do *not* conform to the one-to-one credit-intermediation model portrayed above in Figure 1. They conform to the none-to-many credit-generation model portrayed in Figure 3.

B. The Institutional Facts of the Matter: Public Credit Finances Firms – in Part Through Borrower-Investors

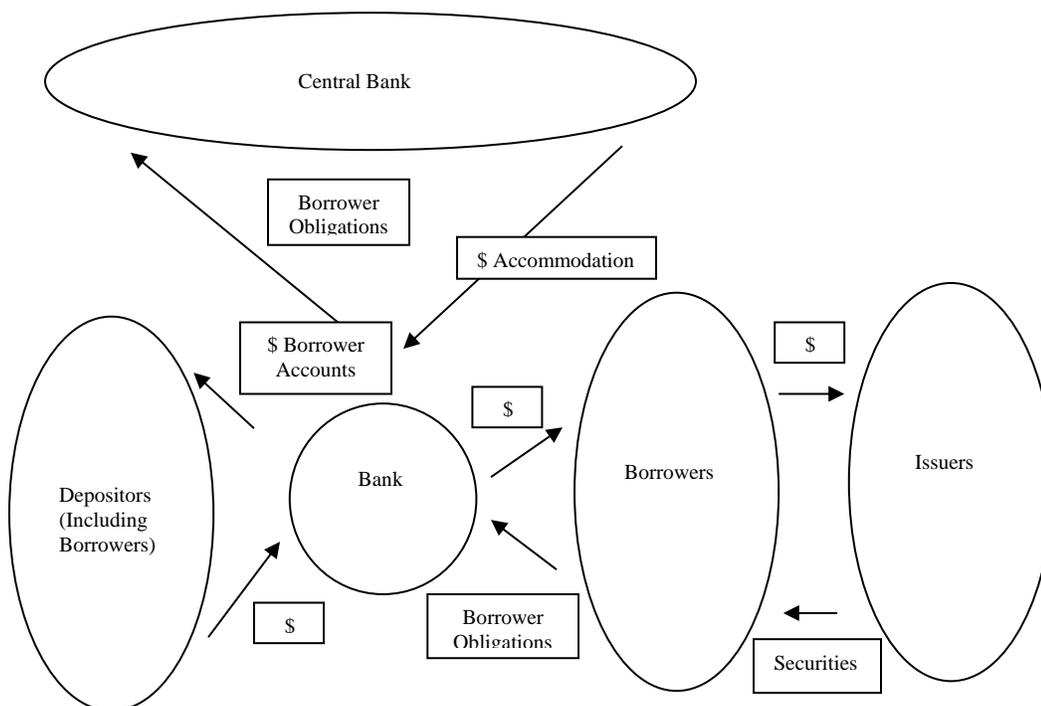
There are multiple mutually complementary reasons to doubt the received view of capital markets as sites of one-to-one intermediated-credit. One is the fact that firms, through voluminous “stock-buyback” activity in recent decades, have revealed themselves not to be dependent on diffuse investor-supplied capital at all in financing their operations.

Another is the fact that the ownership-concentration of firms that stock-buybacks bring about is taking place among financial institutions – primarily private equity and hedge funds – that Part IV below shows to have privileged access to publicly accommodated and monetized bank and “shadow bank” credit; they tap into, in other words, that monetized public full faith and credit which flows through the financial

system.

Finally, there is the fact that even ordinary, individual investors are able to borrow in keeping with the model of banking laid out in Part II *in order to purchase firm-issued securities*.⁴⁹ This of course means that it often can be so-called “*individual investors themselves*” who are the true intermediaries in the process of “financial intermediation” between investors and firms, with banks, and hence the sovereign, as the ultimate investors. In other words, things look as they would were we to combine *Figure 7* and *Figure 8* as follows in *Figure 9*.

Figure 9



Now it is true that most modern jurisdictions regulate so-called “margin lending” of the kind portrayed in *Figure 9* – particularly in the wake of financial asset-price bubbles and busts of the kind that procyclical endogenous-money creation facilitated by margin lending brings about. That is a critical part of the story of American financial regulation post-1929, and will doubtless prove part of the story of Chinese financial regulation once China emerges from its looming post-bubble debt-deflation.⁵⁰

But this is precisely the point. The *reason* that margin-lending must be carefully *regulated* is that it is a conduit through which indefinitely extensible public full faith and credit finds its way, via the banking (or shadow banking⁵¹) channel, into the capital markets. Margin-regulation, particularly when it is

⁴⁹ See *infra*, Part III for more on the law and mechanics of so-called “margin lending” for securities purchases.

⁵⁰ See Robert Hockett, “China is Headed for a Debt Meltdown Like That of the US in 2008,” *Huffington Post*, available at http://www.huffingtonpost.com/robert-hockett-/china-debt-meltdown-_b_8940382.html.

⁵¹ More on how shadow banking replicates the banking channel below, in Part IV.

prompted by capital market bubble and bust, signals implicit recognition by the public that it is not primarily scarce pre-accumulated funds that flow through the capital markets, but is the public's full faith and credit itself – a “financially volatile” fuel that is over-generated and misallocated when the franchisor that produces that fuel does not adequately modulate its dissemination by those banking institutions that are its franchisee purveyors thereof.

Part V elaborates more on these policy implications, while Part IV elaborates more on both new forms recently taken by margin lending as means of evading restrictions, and recent institutional developments that have facilitated this form of regulatory arbitrage.

IV. LATTERDAY INTEGRATION OF BANKING AND CAPITAL MARKETS: “SHADOW” BANKS

The financial crisis of 2007-09 drew widespread attention to what has since come to be called “shadow banking.”⁵² The term generally refers to the amplification and even full functional replication of traditional bank lending activity in the nonbanking sectors of the financial system, without benefit of those forms of regulatory oversight that the public exercises over the *bona fide* banking sector.

In this Chapter's usage, it will designate both this phenomenon and one more that accompanies it and is yet more important – the public accommodation and monetization of initially private bank-like liabilities, as defined above in Parts I through III. “Shadow banking” thus designates the specific mechanisms through which capital, and now also money, markets amplify and replicate the role of banking and Treasury securities markets as channels for dispensing the full faith and credit of the sovereign.

Quantitatively speaking, the shadow banking sector is now a critically important complement to the traditional banking sector where credit-money proliferation is concerned. The lending volumes of this sector, even exclusive of the staggering derivative commitments found therein, rival those of the traditional banking sector.⁵³ This is because, as this Part shall show, finance capital is supplied through these markets in conformity with the credit-generation model discussed in Part I.A and depicted in *Figure 3*, and is now even publicly accommodated and monetized after the manner described in Part I.B and depicted in *Figure 4*.⁵⁴

A. Securitization & Repo Markets

Securitization and repo markets represent those corners of the capital markets in which bank-reminiscent dynamics are intuitively easiest to grasp. Securitization is a means by which a bank or other lender removes an asset from its balance sheet, partly in order to enable itself to purchase additional assets and thereby extend further credit without thereby incurring higher capital-regulatory obligations.⁵⁵ In this

⁵² The term was coined by the author's friend Paul McCulley, then of the Pacific Investment Management Company, or PIMCO. See Paul McCulley, *Teton Reflections*, Global Central Bank Focus (PIMCO) (Sept. 1, 2007) at 2, available at http://easysite.commonwealth.com/EasySites/EasySite_Z3263Y/uploads/Teton%20Reflections.pdf.

⁵³ Shadow banking assets total at approximately \$7.3 trillion, while bank loan assets come in at approximately \$10.5 trillion. I break down the shadow banking figure into its component parts below, taking the data from Federal Reserve Board, *supra* note 17. For more on the aforementioned and related bank figures, see *supra*, note 17.

⁵⁴ On the attachments, see *infra*, Part IV. Also Zoltan Pozsar, Shadow Banking: The Money View, Office of Financial Research Working Paper No. 14-04, July 2, 2014; and Zoltan Pozsar & Manmohan Singh, *The Nonbank-Bank Nexus and the Shadow Banking System*, IMF Working Paper WP/11/289 (2011), at 6.

⁵⁵ “Securitization” generally refers to the pooling of revenue-generating assets, such as commercial or mortgage

sense, it can function as what we might call a bank-credit *amplification* mechanism. It enables a bank to issue more credit that ultimately is accommodated and monetized by the Fed in the manner described in Parts I and II.

1. Mechanics: Bank-Lending Amplification and Replication

Here is how it typically works. The bank first establishes a so-called “special purpose vehicle” (“SPV”) or “special investment vehicle (“SIV”) in the legal form of a trust. The bank then “sells” loans to the trust, with the proceeds of the sales thereupon becoming available for further lending activity. Importantly, to the extent that securitization enables banks to extend far more credit over time than would otherwise be compatible with regulatory capital requirements, it functions to lever up the bank-generated credit-money supply stemming from loans as described in Part II. Hence my term “amplification.”

The securitization trust purchases the assets which its founding bank sells to it with the proceeds of bond sales to investors. These bonds are commonly known as “asset-backed securities” (“ABS”), one particularly well-known species of which is the mortgage-backed security (“MBS”). An SPV or SIV can be internally “structured” as to distribute the credit risk associated with its assets in accordance with specific risk/reward tradeoff preferences held by different investors.

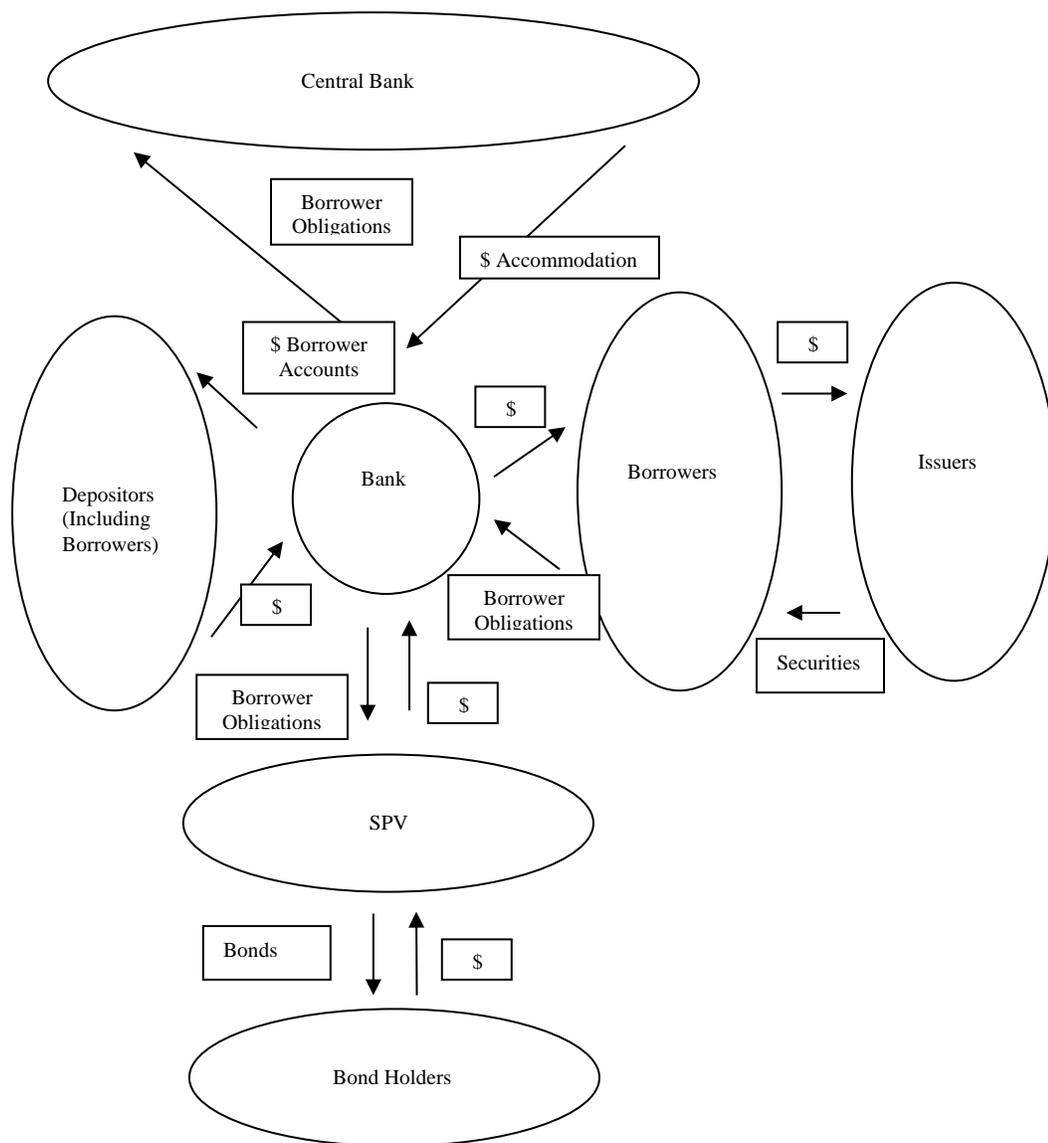
One class of investors, for example, might contract to be the first loss-absorbers in the event of SPV or SIV losses on some investments, in return for higher payouts on assets when they perform. Another class of investors might contract to be next in the loss-suffering queue, in return for slightly lower rewards than those gleaned by the first group. And so on, through a process known in financial parlance as “tranching.”

Tranching enables SPVs and SIVs to issue at least some classes of security that are plausibly considered safe and accordingly rated as such by one or another publicly sanctioned bond rating agency. Such bonds can also be further insured against loss via financial *derivative* transactions, as described below. It is not surprising, then, that certain ABS – in particular, MBS – came to supplement Treasuries as putatively safe assets and “transaction technologies” in the early years of the present millennium.

In summary, things look as depicted in *Figure 10*. Use of the SPV as depicted at the bottom of the Figure enables the bank to keep lending without falling afoul of any capital requirements imposed by regulators to modulate bank credit-generation. In effect, the bank simply transfers some of the loan obligations owed it, not to the central bank, but to the SPV. Note also both that the bank continues to lend to people who invest in issuing firms as noted earlier in connection with *Figure 9*, and that the SPV is itself an issuer, some of whose bonds might be purchased by other banks, or by bondholder/investors who borrow from other banks.

loans, then using the pooled assets as collateral backing the issuance of debt securities to investors. *See, e.g.*, Kenneth C. Kettering, *Securitization and Its Discontents: the Dynamics of Financial Product Development*, 29 CARDOZO L. REV. 1553 (2009); Jonathan C. Lipson, *Re: Defining Securitization*, 85 S. CAL. L. REV. 1229 (2012).

Figure 10



This takes us to repo transactions, one of the two transaction technologies that are probably the closest substitutes for traditional bank lending and deposit-taking in the modern shadow banking markets.⁵⁶

Securities sale and repurchase agreements – a.k.a. “repos” – are short-term lending transactions pursuant to which a borrower sells certain assets to a lender, while agreeing to repurchase the same assets within a day or two at a slightly higher price.⁵⁷ Financially speaking, a repo amounts to a close functional

⁵⁶ The other being the money market mutual fund account, more on which below.

⁵⁷ See generally Viral Acharya & Sabri Oncu, *The Repurchase Agreement (Repo) Market*, in *REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE* (Viral Acharya et al.,

equivalent of a short-term secured loan. The variable “haircut” between selling and purchasing price serves as the (typically very low) borrowing charge. The initial selling price serves as the loan principal. The sold and then repurchased asset serves as collateral. The assets in question typically are U.S. Treasury securities, other federal Agency securities, or some species of seemingly safe ABS – e.g., a mortgage-backed – that has received an investment grade rating from a publicly accredited rating agency.

The repo markets are probably the largest subsector of the shadow banking sector, accounting for some \$ 3.7 trillion in transaction volume.⁵⁸ They are so large, and have grown so rapidly in recent decades, that demand for more repo collateral than Treasuries and Agency securities could supply is thought to have been a significant driver of the rapid production of highly-rated, but ultimately not so safe, ABS from the 1990s onward.⁵⁹

Repo transactions do not so much *amplify* ordinary banking activity, like securitizations do, as functionally *replicate* it. They replicate traditional banking activity both in their so-called maturity transformation properties – low-cost short borrowings accompanied by higher-yielding longer-term investments⁶⁰ – and in their capacity first to increase privately extended credit aggregates, then to trigger public accommodation and monetization of the same. Crucially, however, they have not yet become subject to the “quality control” standards that the franchisor imposes upon those forthright franchisees that are traditional banks of the kind discussed above in Part II.

The sense in which repo transactions increase privately extended credit aggregates is obvious in light of their functional equivalence to secured bank loans. But there is much more to the story than that. For repo transactions augment credit aggregates economy-wide in a manner reminiscent of that at work in the “credit-multiplication” model of finance capital propagation discussed in Part I.A.2 and portrayed in *Figure 2*.

This occurs through the practice of rehypothecation (also “reuse” or “repledging”), pursuant to which a lender-cum-temporary-purchaser of an underlying repo security can repledge it as collateral in borrowing of its own – thus initiating a chain of multiple credit extensions using the same piece of collateral.⁶¹ The more links in the chain involving this one piece of collateral, the more credit that is generated upon its basis, inverted pyramid style, to the point that an initial quantum of pre-accumulated capital – the securities used as collateral – can be dwarfed by investment capital.

The concatenation of multiple sequential lending transactions upon the basis of a single piece of

eds. 2011), at 319.

⁵⁸ See Federal Reserve Board, *supra* note 9, at p. 112, Table L.207, lines 17 (total \$3.67 trillion), 22 (-\$22.4 billion in Fed Funds), and 25 (-\$1.2 billion in Fed Funds). (I exclude Fed Funds lines for those seeking an impression of repo volume exclusive of borrowing undertaken in connection with interbank Federal Funds transactions.)

⁵⁹ See, e.g., Gary Gorton & Guillermo Ordonez, *The Supply and Demand for Safe Assets*, NBER Working Paper No. 18732 (Aug. 2013).

⁶⁰ Acharya & Oncu, *supra* note 57; Bengt Holmstrom, *Understanding the Role of Debt in the Financial System*, BIS Working Paper No. 479 (Jan. 2015).

⁶¹ See, e.g., Tobias Adrian & Hyun S. Shin, *Liquidity & Leverage*, 19 J. FIN. INTERMEDIATION 1 (2010); Poszar & Singh, *supra* note 54; Manmohan Singh, *The Velocity of Pledged Collateral*, IMF Working Paper WP/11/256 (2011); Manmohan Singh & James Aitken, *The (Sizable) Role of Rehypothecation in the Shadow Banking System*, IMF Working Paper WP/10/172 (2010).

collateral, sometimes referred to suggestively as “churning,” lends repo transactions a “velocity” akin to the velocity of money circulation first identified as important by Irving Fisher many decades ago.⁶² For this very reason, along with the fact that sovereign debt instruments – in particular, U.S. Treasury and GSE liabilities – make up the lion’s share of repo collateral, some analysts of the global financial system have begun to suggest that rehypothecated collateral chains, on the one hand, and more orthodox monetary aggregates such as the Fed’s M2 measure,⁶³ on the other, are effectively substitutes for one another.⁶⁴ This would of course mean that these chains should be included in measures of the money supply inasmuch as the latter affects price stability in multiple markets.⁶⁵

It should be noted that rehypothecated collateral transactions occur with few serious equivalents of bank reserve or capital requirements that might serve as regulator-imposed practical limits on long-term credit extension in some jurisdictions.⁶⁶ During boom times like those in the lead-up to 2008, repo haircuts regularly drop, procyclically, to near-zero, meaning that effectively unlimited credit aggregates build upon unchanging collateral buffers – viz., the underlying securities themselves. Such are the workings of “the leverage cycle” in these markets.⁶⁷ Given the churning that rehypothecation enables, it is not surprising that repo lending on rehypothecated collateral came quantitatively to rival traditional (and accordingly regulated) bank lending itself in the lead-up to 2008.⁶⁸

Things accordingly look as depicted in *Figure 11*. The small size of the disc at the left represents the comparatively small “base” of Treasury and GSE debt – themselves of course liabilities – that can support a much larger volume of repo lending through the practice of rehypothecation. The larger discs to the right correspondingly represent this larger volume of repo borrowing and lending built upon the smaller base of public debt. Note finally that since banks themselves can act as repo lenders and need no pre-accumulated funds to act in this fashion, rehypothecated repo not only multiplies pre-accumulated funds, but occurs in part with no need of such funds at all.

⁶² See Singh, *id.* at 16. The idea of money’s circulation at a specific “velocity” stems from IRVING FISHER, *THE PURCHASING POWER OF MONEY* (1911).

⁶³ M2 includes the cash and checking deposits that constitute M1, along with “near monies” including savings deposits, time deposits, and money market mutual funds (“MMMFs”) as discussed further below.

⁶⁴ See, e.g., Singh, *supra* note 61 at 2 and 16.

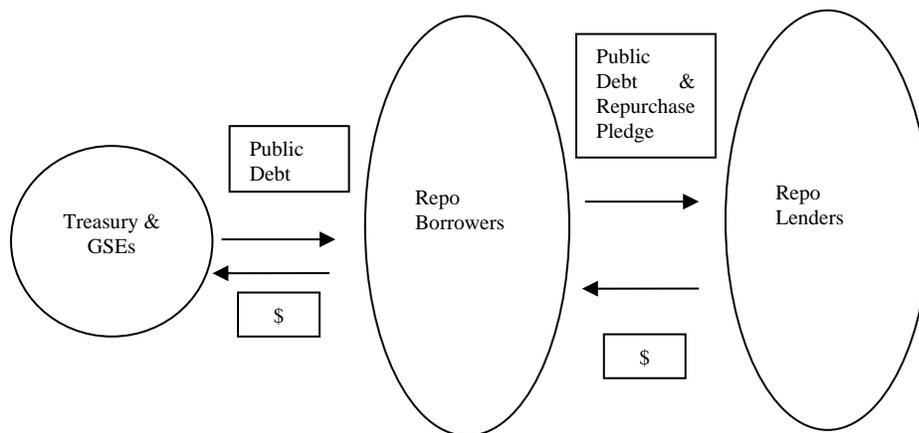
⁶⁵ Gorton and Metrick have suggested, with slight exaggeration, that they already are. See Gary Gorton & Andrew Metrick, *Haircuts*, *FED. RES. BANK OF ST. LOUIS REVIEW*, November/December 2010, at 507. Gorton and Metrick are correct that *some* repos were included in the Fed’s M3 measure of the money supply, which was discontinued in March 2006; but this was true only of repo transactions between primary dealers and the Fed.

⁶⁶ Regulation T and SEC Rule 15c3-3 under Section 15(c) of the Securities Exchange Act of 1934 prohibit broker-dealers from rehypothecating more than 140% of a client’s debit balance or more than 100% of total client debits to finance their own proprietary trading activities. But these restrictions apply only to broker-dealers, and even the latter are able to get around them in many cases by booking transactions offshore – in the UK, for example, where rehypothecation is not limited at all and cumulative “collateral replication” can accordingly be infinite. See, e.g., Singh, *supra* note 61 at 4-9; Singh & Aitken, *supra* note 61 at 4.

⁶⁷ See John Geanakoplos, *The Leverage Cycle*, 24 *NBER MACROECONOMICS ANNUAL* (2010); Adrian & Shin, *supra* note 61; Tobias Adrian, Nina Boyarchenko, & Hyun Shin, *The Cyclicalities of Leverage*, Federal Reserve Bank of New York Staff Report No. 743 (Oct. 2015).

⁶⁸ See Singh, *supra* note 61; Singh & Aitken, *supra* note 61. More on how repo loans are accommodated immediately below.

Figure 11



2. From Private to Public: Fed Accommodation and Monetization

Turning from bank-replication to public accommodation and monetization, it is first worth noting, if only in passing, that the *Fed* actually *invented* repo, as a means of financing First World War expenditures, while the Federal Reserve Bank of New York (“FRBNY”) now acts as the largest counterparty in repo markets.⁶⁹ U.S. Treasury securities, moreover, as supplemented by GSE Agency securities, still constitute the principal underlying assets on which repo transactions occur.⁷⁰ Hence private repo itself in effect “monetizes” trillions of dollars of public full faith and credit that has been previously securitized on the model of Part III.

Where literal *accommodation* in Parts I and II’s sense occurs, however, is, as there, in guaranteed clearing.⁷¹ Thus, two publicly guaranteed clearing banks – BNY Mellon and JPMorgan Chase – serve as guarantor/clearing banks for the largest of the repo markets, the so-called “triparty repo” market.⁷² The significance of this fact is apparent in light of the fact that Fed accommodation of bank lending, as described above, is itself necessitated by the need to ensure clearing of checks.⁷³ Things look, then, as depicted in *Figure 12*, which leaves clearing banks out of the picture for simplicity’s sake but will nevertheless readily be seen to constitute a variation on *Figures 4* and *7* in Parts I and II.

⁶⁹ See, e.g., Tracy Alloway & Michael MacKenzie, *New York Federal Reserve Takes on Key Role in Repo Market*, FIN. TIMES (June 19, 2014).

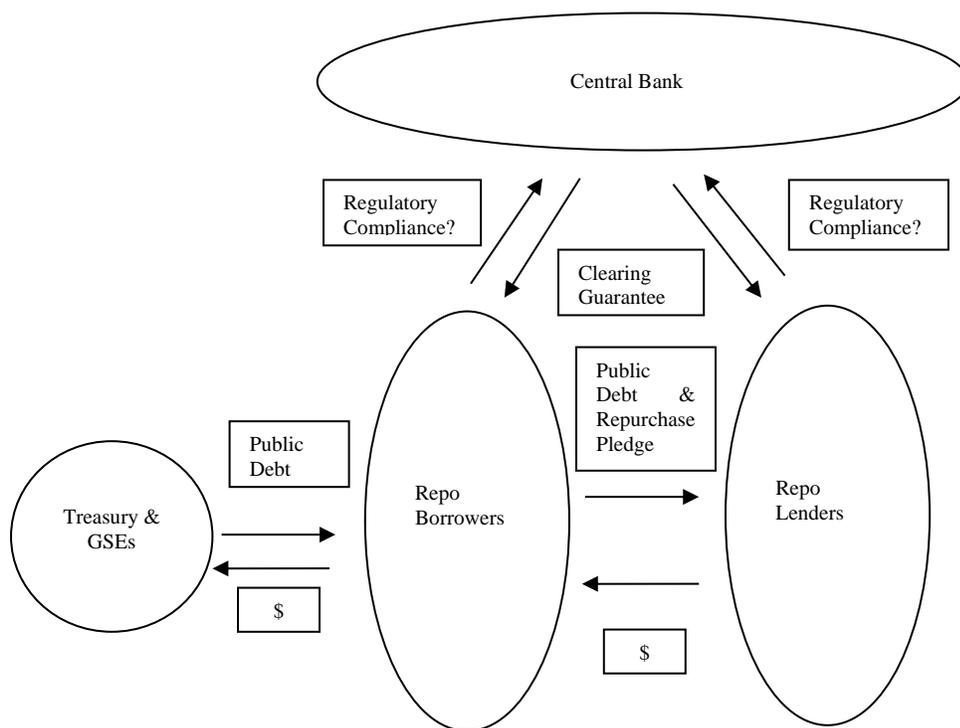
⁷⁰ See, e.g., *id.* See also, GARY GORTON, *SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007* (2010).

⁷¹ See *supra*, Part I.B, on Fed bank-loan accommodation as a function of necessary check-clearing.

⁷² See Alloway & MacKenzie, *supra* note 69; and Bruce Tuckman, *Systemic Risk and the Tri-Party Repo Clearing Banks*, CFS Policy Paper, Feb. 2, 2010. Note also that, because repo transactions are exempt, under the “qualified financial contract” provision, from the automatic stay and claw-back provisions of the U.S. Bankruptcy Code, repo lenders are effectively guaranteed against counterparty credit risk. See 11 U.S.C. §§ 363(b)(7), 546(e), 559.

⁷³ See *supra* Part I.B.

Figure 12



An implicit recognition of the fundamental similarity between repo clearing and ordinary bank check clearing, and of the role of public accommodation in repo markets, is found in the Fed's post-crisis efforts to limit *risk-taking* by triparty repo clearing banks. The Fed has been pushing for reform in this area with a view explicitly to the linkages between the repo market infrastructure and "other payment, clearing and settlement services that are central to U.S. financial markets" and "operated by the two tri-party agent banks" backed by the Fed.⁷⁴

Comprehensive examination of the triparty repo infrastructure reforms now underway would of course take us beyond our present concern. It should nevertheless be noted for present purposes, however, that these measures can be analogized to capital and other risk-reducing regulatory requirements imposed upon banks with a view to both (1) the similar centrality that check-clearing bears in relation to the broader economy, and (2) the consequent necessity of Fed accommodation of bank loans, as described in Part II. In this context, the fact that the Fed is stepping in to limit the risk of excessive leverage build-up through indefinite rehypothecation of repo collateral does not weaken the analogy between repo and traditional bank lending, but in fact strengthens it.

B. Credit Derivatives Markets & Clearinghouses

Corresponding in part to the ABS/repo-clearance pairing in constituting the shadow banking sector is the credit derivative/clearinghouse pairing. There are more financial derivative types than it would make sense to catalogue in detail here, with a notional value totaling well into the hundreds of trillions of

⁷⁴ See Fed. Res. Bank of New York, Tri-Party Repo Infrastructure Reform, available at http://www.newyorkfed.org/banking/tpr_infr_reform.html.

dollars.⁷⁵ What is important for present purposes is that many of these complex financial products – including the credit default swaps (“CDS”) and collateralized debt obligations (“CDOs”) that received so much attention in 2007-09 – are used either to construct synthetic lending transactions that replicate bank loans or, by enabling lenders to hedge credit risk, increase leverage in already transpiring lending transactions.⁷⁶

In other words, derivative transactions can both amplify bank lending (as securitization does) and replicate bank lending without limit (as rehypothecated repo does). Amplification of bank lending, in turn, necessarily augments public accommodation and monetization as described in Part II. Public accommodation and monetization also take place, however, where bank lending is not merely amplified but is *replicated* by nonbanks.

1. Mechanics: (More) Bank-Lending Amplification and Replication

Again I’ll begin with the amplification dynamic. Where a bank wishes to lend more than risk-based capital requirements currently permit, an alternative to securitization is to reduce asset risk by “insuring” assets on its balance sheet. This it can do by purchasing derivative contracts that purport to guarantee payouts in the event of asset defaults or value-loss.

In effect, the derivative purchase amounts to a kind of insurance contract. It effects a transfer of risk, for a fee, to a party that is more able or ready to bear it, partly because the party in question is not constrained by regulation to the degree that the bank is. In this sense, the derivative purchase is functionally reminiscent of tranching securitization as described above. By distributing risk more in keeping with varying investor risk preferences, it enables more aggregate credit to be extended.

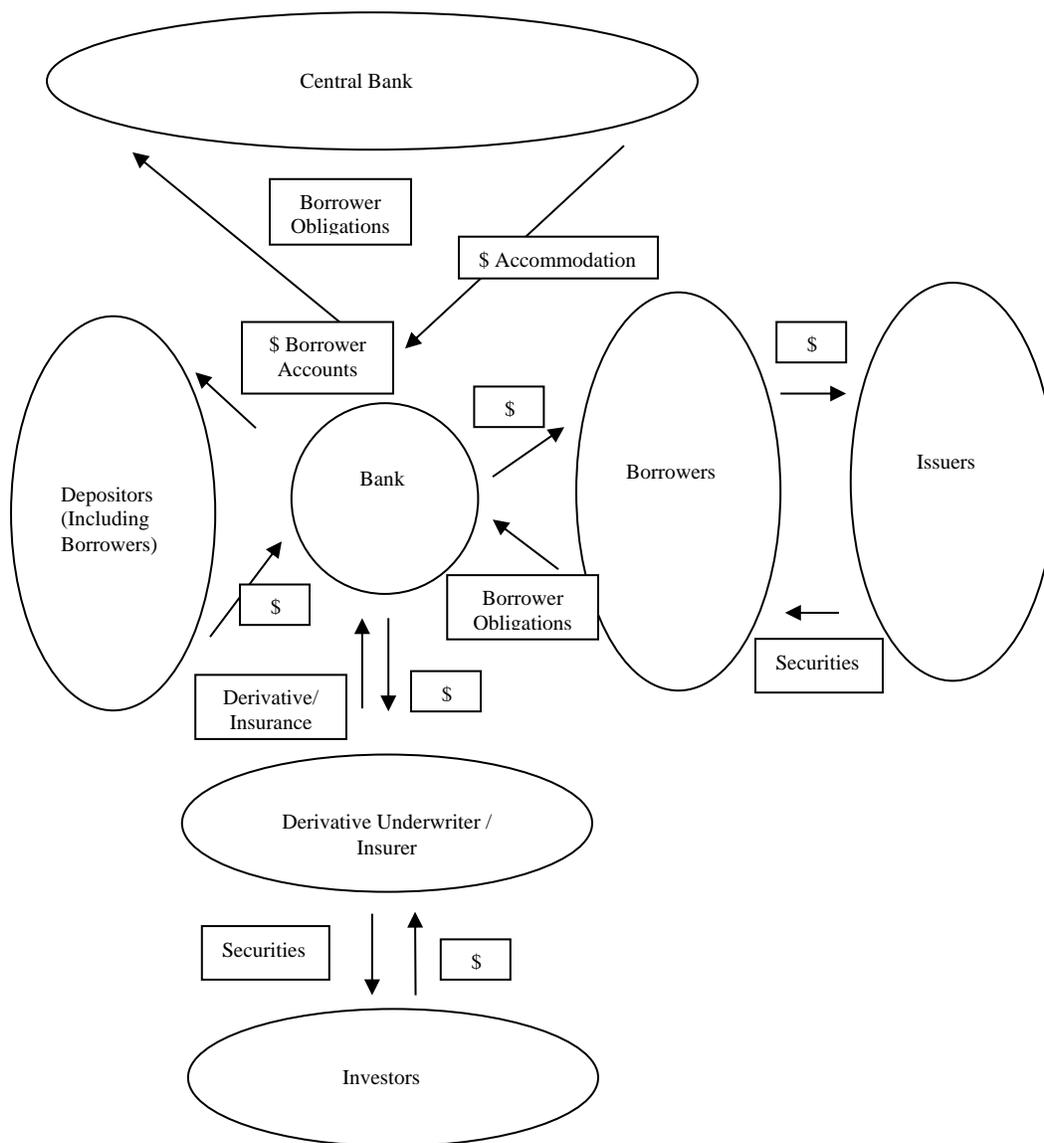
Derivative transactions, then, serve to amplify already publicly accommodated and monetized bank lending just as securitizations do. Things accordingly look as depicted in *Figure 13*, which will readily be seen to resemble *Figure 10*, save with insurance-like derivative purchases from derivative underwriters (typically insurance companies) replacing loan-sales to SPVs as preferred means of offloading the credit-risk that attaches to loan-holding.

Use of derivatives to offload credit-risk as depicted at the bottom of the Figure enables the bank to keep lending without falling afoul of any risk-weighted capital requirements imposed by regulators to modulate bank credit-generation. In effect, the bank simply transfers some of its loan credit risk, not to the central bank, but to the insurer. Note also both that the bank continues to lend to people who invest in issuing firms as noted earlier in connection with *Figure 9*, and that the derivative underwriter or insurance company is itself an issuer, some of whose financial securities might be purchased by other banks, or by investors who borrow from other banks.

⁷⁵ Derivatives are contingent claim contracts that confer payouts or other rights upon their purchasers in response to changes in one or another contractually referenced value, typically called “the underlying.” There are in general as many kinds of derivative contract as there are contingencies on which financial market participants see fit to “bet.” For a widely used basic text, see JOHN C. HULL, *OPTIONS, FUTURES, AND OTHER DERIVATIVES* (9th ed., 2014).

⁷⁶ See generally, Erik Gerding, *Credit Derivatives, Leverage, and Financial Regulation’s Missing Macroeconomic Dimension*, 8 BERKELEY BUS. L. J. 101 (2011); GORTON, *supra* note 69.

Figure 13



But derivative transactions also can *replicate*, rather than merely amplify, bank lending – now in a manner reminiscent of repo rehypothecation. This is readily appreciated by comparing a credit derivative to its insurance contract counterpart. In essence, the former is a tradable and indefinitely multipliable variation on – that is, a derivative of – the latter.

Consider a fire insurance policy taken out on a house. Such a contract amounts to a bet entered into between insured and insurer – a bet that the former “wins” in the event of fire, and that the latter “wins” in the event that no fire occurs during the life of the policy. This transaction is presumably beneficial both to the insured and the insurer, but is in most cases of negligible significance to the broader public. That is because, under the “insurable interest” doctrine long operative in the law of insurance, neither party may sell the contract, and no other person may become party to it.

Now imagine a derivative contract whose “underlying” asset is identical to that of the insurance policy

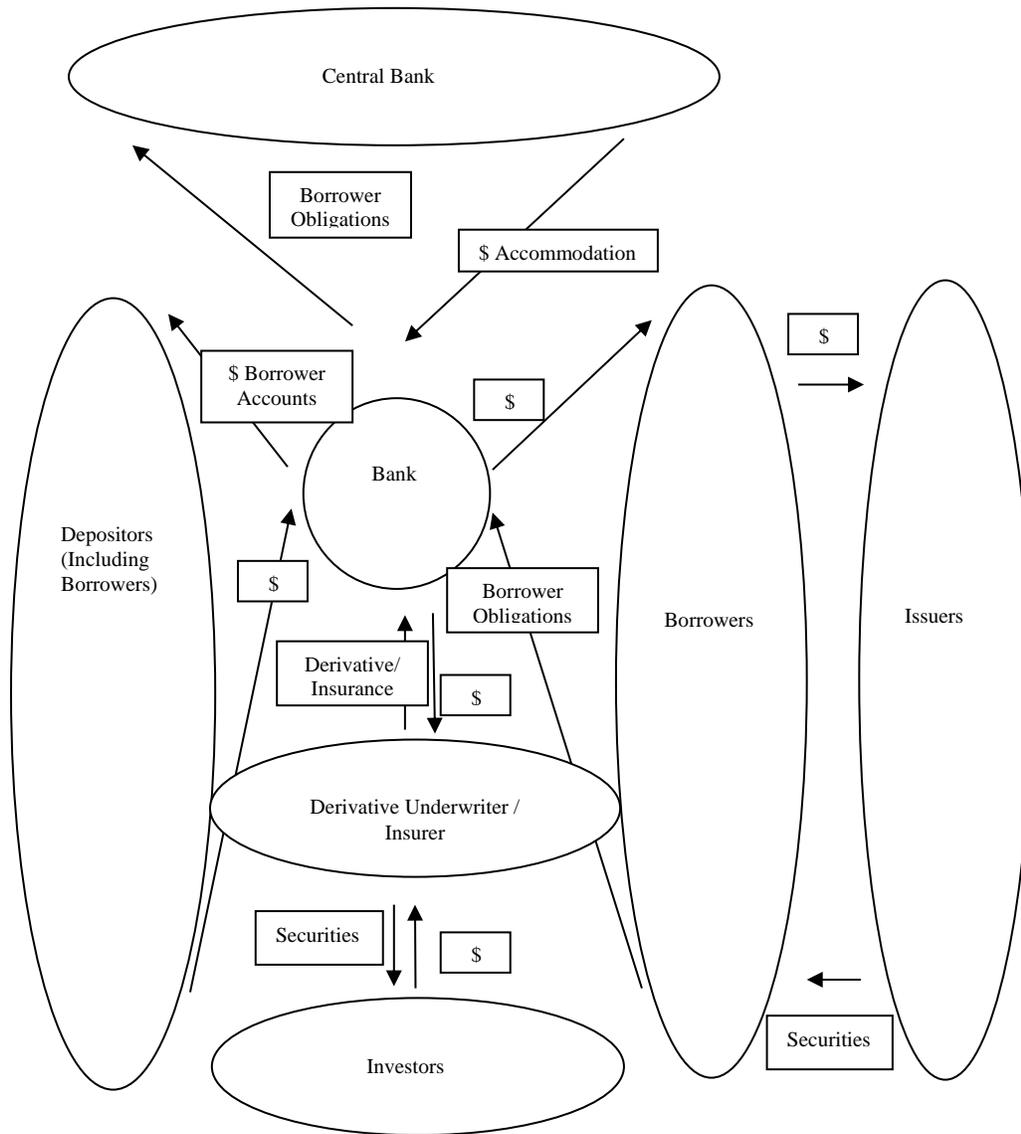
– the house that might burn and might not burn. If we permit as many people as wish to do so to take either side of the fire bet by purchasing or selling tradable contracts that replicate most of the terms of the original insurance contract, things change dramatically. The contracts now become financial securities that are readily monetized, either through sale or through use as collateral in other transactions.

There is also no *ex ante* limit to these contracts' issuance. They are subject to no analogue of the insurable interest doctrine, and there is no reserve or capital requirement or other form of "monetary base" in connection with which they might be quantitatively restricted via some stipulated multiplier – anymore than there is in rehypothecated repo. In this sense, they represent cases of pure credit-generation as modeled in Part I.A.3.

Like bank loans and repo transactions, moreover, these contracts also tend procyclically to proliferate during boom – i.e., credit-expansionary – times, as risk perceptions diminish across the financial system. They are media through which bubble-inflating credit-money aggregates can grow "out of control."

Things accordingly look as depicted in *Figure 14*, which is much like *Figure 13*, save that the discs representing bank loan volume and corresponding loan-created deposit volume are much larger. This is meant to represent the indefinite growth in loan and consequent deposit volume that is enabled, even in the face of risk-weighted capital regulations meant to modulate credit-growth, by indefinitely extensible loan risk offloading through unlimited derivative underwriting by large insurance firms.

Figure 14



If such contracts are in any way federally “accommodated” as they steadily boost outstanding credit aggregates, then, they too can come to constitute an indefinitely extensible form of securitized, then monetized, full faith and credit of the U.S. – just as repothection chains in the repo markets do.

2. From Private to Public: (More) Fed Accommodation and Monetization

As it happens, credit derivatives *are*, and long have been, publicly “accommodated” much like repo and bank loans are – and again this is through publicly guaranteed clearing. Prior to passage of the Dodd-Frank Act in 2010, most credit derivative transactions traded “over the counter” (“OTC”) through large, federally guaranteed dealer-banks. These banks often served as counterparties in the derivative transactions themselves.

Since 2010, most of these transactions have been required to clear through specifically regulator-

approved and federally-guaranteed clearinghouses, which effectively assume the risk of failure on the part of the parties to the transactions.⁷⁷ The dealer banks that constituted the OTC market prior to 2010, and the clearinghouses that underwrite the lion's share of the market post-2010, accordingly all have been implicitly or explicitly guaranteed institutions considered by all to be "too-big-to-fail."

For the Fed to assure clearing as it does via these guarantees is thus functionally reminiscent of its assuring that checks clear via its accommodation of bank loans as described above in Part II. As if to underscore this point, the major derivatives clearinghouses now have access to Fed emergency liquidity lending in the event of crisis – a privilege previously restricted to banks.⁷⁸

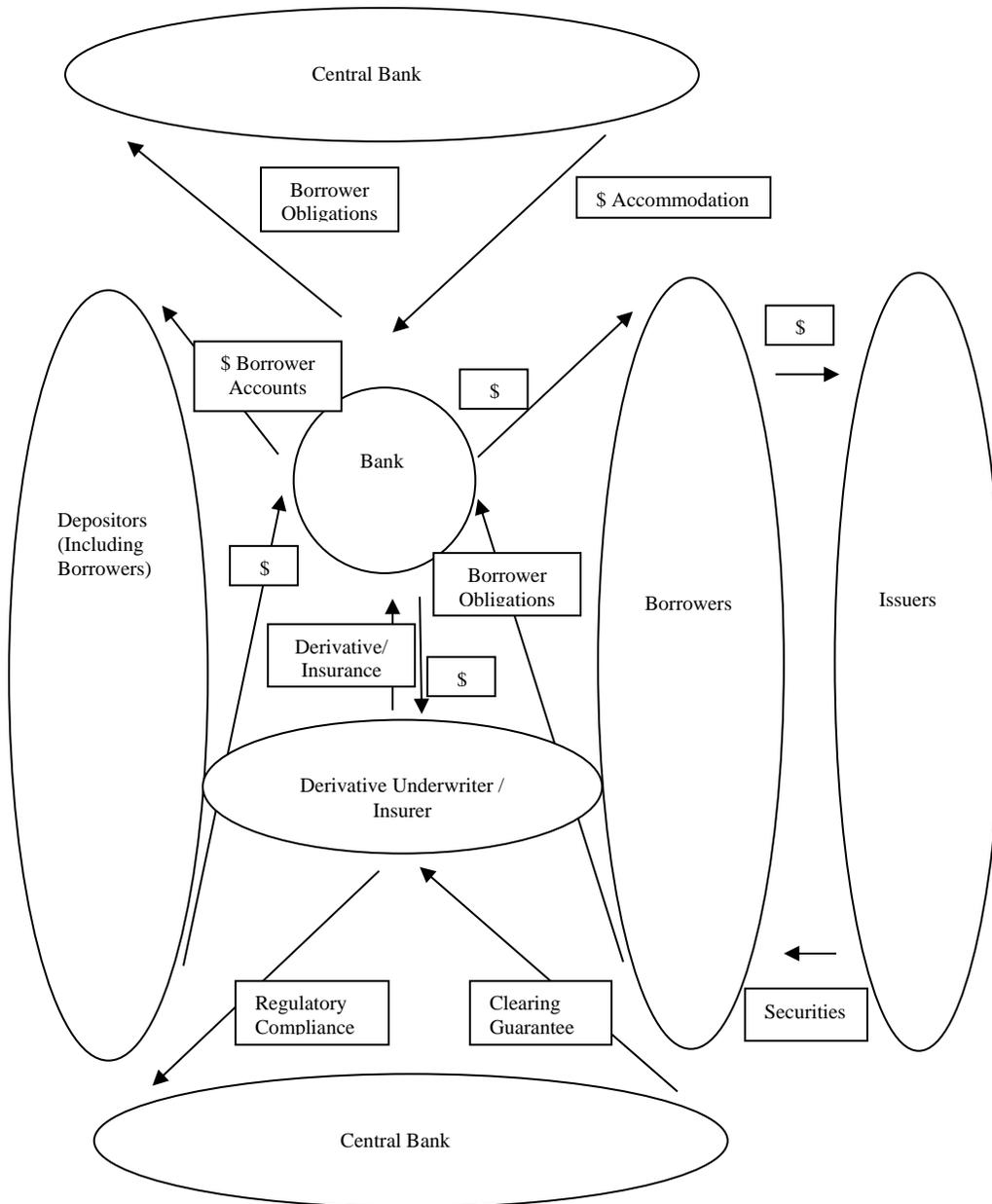
Things accordingly look as depicted in Figure 15, from which investors in the insurer have been removed for the sake of simplicity. Note that the Fed (the central bank) now figures in two places in the diagram. It accommodates both bank lending in the manner discussed earlier in Part II, and the insuring of bank loans via derivative purchases in the manner just discussed.

In view of such insuring's enabling lending volume itself to grow as just described, this means that *both* forms of Fed accommodation enable great growth in credit-money aggregates. The Fed's converting *both* private borrower liabilities and private insurer liabilities into public liabilities amounts to its monetizing that much more public full faith and credit, and injecting it into the financial system.

⁷⁷ See Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. 111-203, H.R. 4173, Title VIII (signed into law July 21, 2010).

⁷⁸ See 12 U.S.C. § 5462. They likewise have authority to call on their large, implicitly guaranteed member banks for additional capital in the event of financial distress. Note also that, like the repo collateral, derivatives are exempt from the Bankruptcy Code's automatic stay and claw-back provisions under the "qualified financial contract" exemption. See *again* 11 U.S.C. §§ 363(b)(7), 546(e), 559.

Figure 15



Once again, then, as with repo, so here we find bank replication and accommodation, which effectively enables private liabilities to proliferate indefinitely even while ultimately coming to constitute public liabilities – i.e., claims on the full faith and credit of the sovereign.

C. Commercial Paper & Money Markets

A final component of the shadow banking sector worthy of serious attention for present purposes comprises the commercial paper (“CP”) and money market mutual fund (“MMMF”) markets. There are nearly \$1 trillion in CP instruments and \$ 2.6 trillion in MMMF shares outstanding.⁷⁹ For present purposes, MMMFs’ and CP’s chief significance is their roles as straightforward bank and bank-loan substitutes that mimic bank activity both in their credit-extending and public-accommodation and -monetization properties.

1. Commercial Paper Mechanics, Accommodation, and Monetization: (Yet More) Bank-Lending Amplification and Replication

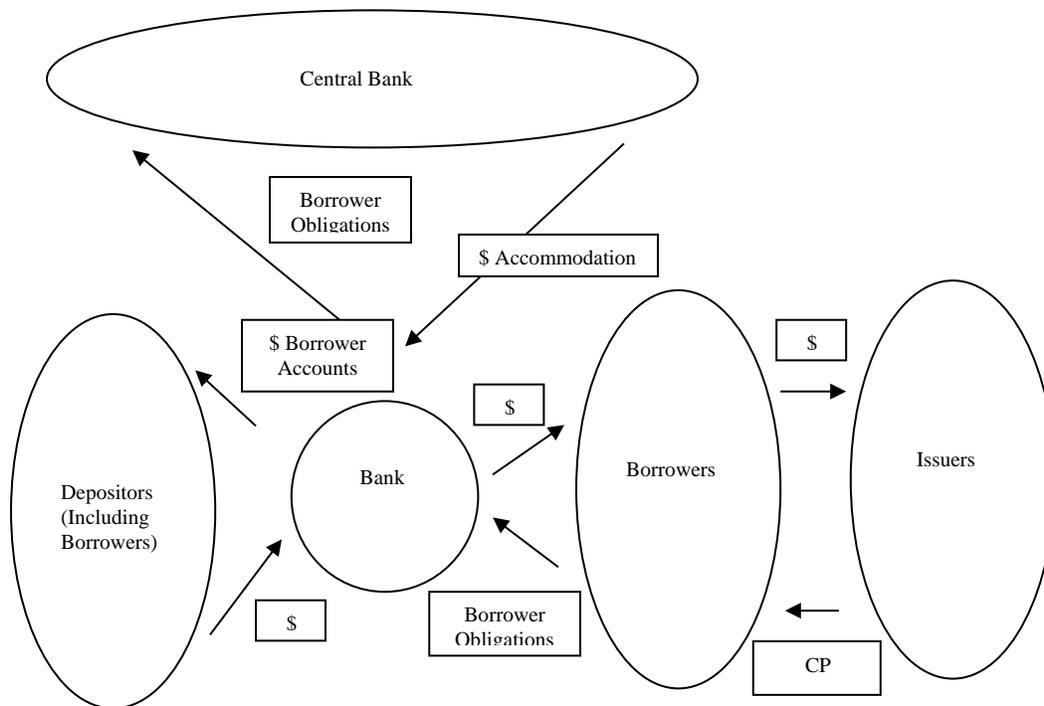
CP is very short-term debt issued by firms that the U.S. Securities and Exchange Commission (“SEC”) has effectively deemed high-quality, “investment grade” borrowers.⁸⁰ Both attributes render CP a very low-risk form of lending for purchasers, and thus a low-cost form of borrowing for issuers. For that very reason, the CP market is often referred to as a constituent part of the so-called “money market” for all short-term debt instruments – almost as if to verify by popular usage the proposition that those who deal in CP deal in a close money substitute.

CP can be purchased on margin just as can other securities. Hence things can look as depicted in *Figure 16*, which will be recognized to constitute a variation on *Figure 9* above developed in connection with securities purchases on margin in the capital markets.

⁷⁹ See Federal Reserve Board, *supra* note 9, at p. 114, Table L.209, line 2 (CP), and at p. 98, Table L.120, line 1 (MMMF). Also Federal Reserve Board, *id.*, at p. 111, Table L.206, line 1 (same figure for MMMF).

⁸⁰ The deeming is done directly by federally recognized rating agencies, whose ratings carry the force of regulatory endorsement. See 17 U.S.C. §[]

Figure 16



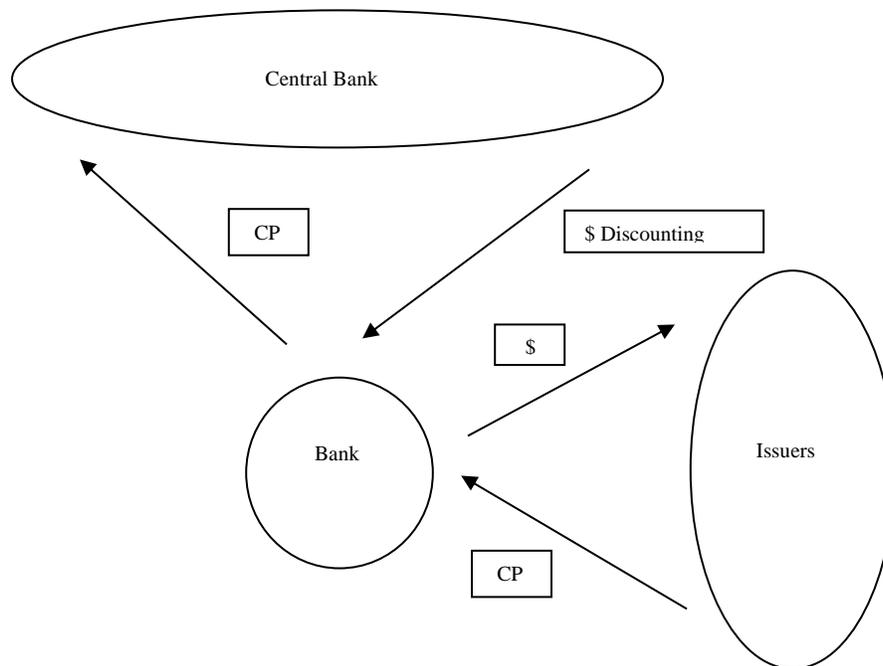
The public thus indirectly “accommodates” purchases of private CP issuances when it accommodates bank loans that fund such purchases, just as it does purchases of any other financial security on margin as discussed in Part III. In so doing, it monetizes private debt just as it does in accommodating bank loans made in exchange for borrower promissory notes as discussed in Part II.

The public also “accommodates” CP purchases more directly, however, by providing for direct Fed “discounting” of CP purchased by banks themselves either from issuers or from others who hold it.⁸¹ *Figure 17* portrays the mechanics of Fed discounting, whereby it purchases CP from banks that first purchase from issuers. (Depositors have been left out of the picture for the sake of simplicity.)

In effect, the practice of discounting CP amounts to near-direct Fed lending to CP issuers, effected by immediately crediting the accounts of banks that monetize CP and pass it on to the central bank. Public credit-money generation could scarcely be more direct.

⁸¹ See 12 U.S.C. § 372. Also Federal Reserve Collateral Guidelines, June 3, 2014, at 3.

Figure 17



The public also accommodates CP issuance partly through federally insured banks' guaranteeing the credit-worthiness and liquidity of asset-backed CP ("ABCP").⁸² Finally, the public additionally accommodates CP issuance by guaranteeing certain institutions that specialize in investing in this form of debt and monetizing it – money market mutual funds, or "MMMFs."

2. Money Market Mutual Funds: (Yet More) Fed Accommodation and Monetization

MMMFs are open-end investment companies that specialize in forming diversified portfolios of CP and other short-term or otherwise "safe" investment securities – in particular, Treasury and Agency securities – on behalf of their investors. MMMFs also actively engage in short-term repo lending, as it happens – bringing us full circle inasmuch as we began our treatment of shadow banking with repo.

With some exceptions, special accounting rules continue to permit MMMFs to maintain their value at precisely \$1.00 per share, while other regulatory provisions permit them to offer check-writing capabilities to account-holders.⁸³ This means that MMMFs effectively *monetize* CP and repo on both sides of the balance sheet, so to speak – on the asset side by doing the purchasing and lending in the first place, and

⁸² See Emma-Jane Flucher et al., Fitch Ratings, *The Difference Between Traditional ABCP Conduits and SIVs, ABCP/Europe Special Report*, (2008), at 2.

⁸³ In July 2014, the SEC adopted final rules that require prime institutional MMMFs to use floating net asset value ("NAV") for their shares, while allowing retail and government MMMFs to continue maintaining stable NAV in the same manner as they did before the crisis. See, 17 C.F.R. § 270.2a-7; U.S. Securities and Exchange Commission, *Money Market Fund Reform; Amendments to Form PF*, 79 F.R. 47736 (Aug. 14, 2014).

on the liability side by enabling their shareholders to write checks out of shares held in CP and repo portfolios. Things thus initially look as depicted in *Figure 18*.

Figure 18

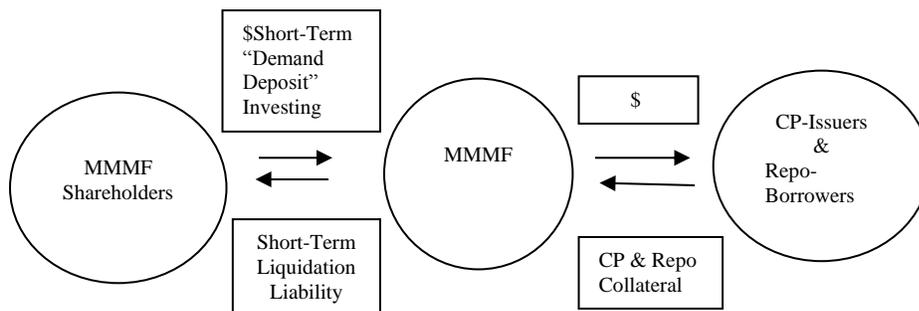


Figure 18 of course resembles *Figure 1* as discussed above in Part I.A.1. This is because MMMFs fund most of their activity with pre-accumulated investor funds, and are accordingly one of the few species of financial institution that conform, when considered in isolation, to the intermediated-credit model of finance discussed in Part I.A.1 and depicted in *Figure 1*.⁸⁴

MMMFs must *not* be considered in isolation, however. For they, like any other issuer, are invested in by people and institutions able to purchase securities on margin as depicted in *Figure 9*, which showed why *Figure 8*'s depiction of the capital markets as sites of *Figure 1* style one-to-one credit intermediation was false. Hence, things in the money markets really are more as depicted in *Figure 19*, which stands to *Figure 18* as *Figure 9* stood to *Figure 8*.⁸⁵ It is not surprising, then, that MMMF accounts are counted in the Fed's M2 measure of the money supply.

⁸⁴ Recall the observation in that Subpart that the one-to-one credit-intermediation model of finance effectively portrays all financial institutions on the model of the mutual fund.

⁸⁵ For the sake of completeness, *Figure 20* also depicts direct levered purchases of CP by bank borrowers, as well as by banks themselves able to monetize their CP purchases at the Fed discount window.

future.⁸⁶ This too brings us full circle in a sense, for as noted before, the Fed actually invented repo.

Between the crucial roles played by Treasury and GSE securities in the capital markets, as described in Part III, and the Fed-accommodated and monetized banking and shadow banking functions discharged in these markets as described in both Part III and the present Part, the broader financial markets may be said to constitute a near-clone of the formal banking system. This is so not only in respect of the “maturity-transformation” focused upon by most commentators, but, far more importantly in our view, in respect of publicly accommodated and monetized credit-generation and attendant glut and misallocation potential.

V. SOME PROGRAMMATIC IMPLICATIONS: DELIBERATE PUBLIC CREDIT-ALLOCATION AND -MODULATION

As suggested in opening this Chapter, a shift from the intermediated scarce private capital view of finance to what I am calling the franchise view carries with it important theoretic and practical implications. Among these implications are both newly appreciable opportunities and newly appreciable constraints.

On the opportunity side of the ledger, we see that there is much more that the public can do where both the modulation and allocation of credit aggregates are concerned than financial orthodoxy has thus far admitted. On the constraint side of the ledger, we see that the public not only can, but *must* be more active where credit-modulation and -allocation are concerned.

Let’s start with the latter. As seen in the foregoing Parts, the public’s critical role in accommodating and monetizing credit-extensions in literally all sectors of the financial system now brings with it a significant vulnerability. That is the capacity of franchisee institutions endogenously to over-extend credit-money during boom times in a procyclical manner – fueling asset price rises that themselves incent further requests for and extensions of credit-money.⁸⁷ This vulnerability can in theory be dealt with through greater franchisor oversight and control over emissions of its resource by franchisee institutions. Countercyclical capital regulation and other forms of leverage regulation, along with other measures now classified as forms of “macroprudential” financial regulation, are up to the task if employed by determined regulators who properly understand their mandates.⁸⁸

The urgency of the modulatory task, however, is rooted partly in inattention over recent decades to what I am calling the allocative task. A macroeconomic environment that offers few prospects of remunerative investment in the “real” economy is one in which more speculative investments in the secondary markets grow ever more reasonably attractive. Yet these are precisely the markets in which endogenously generated credit-money can recursively drive prices to dangerous, crash-prone heights.⁸⁹ If the lack of remunerative opportunity in primary markets can be attributed to market failure or missing institutional infrastructure, then, there is an obvious sense in which public inattention to its credit-

⁸⁶ See Binyamin Appelbaum, *The Fed’s Policy Mechanics Retool for a Rise in Interest Rates*, N. Y. TIMES (Sept. 12, 2015).

⁸⁷ See, e.g., Robert Hockett, *A Fixer-Upper for Finance*, 87 WASH. U. L. REV. 1213 (2010).

⁸⁸ See, e.g., Robert Hockett, *The Macroprudential Turn: From Institutional “Safety and Soundness” to Systemic “Financial Stability” in Financial Supervision*, 9 VA. J. BUS. & FIN. L. 201 (2014); Robert Hockett, “Practical Guidance on Macroprudential Finance-Regulatory Reform,” *Harvard Law School Forum on Corporate Governance and Financial Regulation*, Nov. 22, 2013.

⁸⁹ See Robert Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Money Markets, Macro-Economies, and Formally Similar Contexts*, 3 J. FIN. PERSP. 37 (2015).

allocative task renders its credit-modulatory task more difficult.

As it happens, there *are* market failures and missing institutions where primary investment is concerned, both rooted in collective action challenges. This means in turn that a more active allocative role on the part of a collective agent – in this case, the public finance “franchisor” – is as necessary as it is possible. Among the failures in question, two in particular stand out. First is the inability of private agents to maintain stability with respect to what I have elsewhere called “systemically important prices and indices” (“SIPs”) – notably interest rates, wage and salary rates, energy prices, and many commodity prices.⁹⁰ In the absence of such background stability, long-term “patient capital” investment in primary markets – i.e., the “real” economy – becomes less rational, while short-term speculation on price movements in secondary markets becomes correspondingly sensible.

We have as a public long maintained stability with respect to one SIPI – namely the money rental, or “interest” rate – in implicit recognition of this fact. But we could just as easily do so, and for the same reasons, with respect to other SIPs. We could even use the same modalities – notably open market operations of the kind that the Fed engages in every weekday morning from the New York Fed trading desk.⁹¹ So long as we don’t, however, we leave the returns on long-term investments in primary markets in significant doubt, thereby encouraging shorter-term gambles on price movements both among SIPs and among other prices in secondary markets.

The other important collective action challenge where primary investment is concerned is rooted in the uncapturability, by individuals, of many of the gains apt to be generated by investment in infrastructure and vanguard industries. To be sure, “user fees” in the case of some infrastructures, and profitability in the case of many new firms, can incent *some* private investment. But even assuming that we would be comfortable with charging fees for the use of public infrastructure, the fact is that much of the value added by infrastructure and new industry is individually uncapturable spillover value, taking the synergistic forms of improved local, regional, and even national economic growth. The only way to finance adequately in such cases will accordingly be either for the public directly to invest, or for the public to sell derivative securities entitling buyers to pro rata shares in heightened public revenues generated by broad local, regional, or national economic growth.

This all suggests two critical credit-allocative measures that the public can take, both in the name of more stable and equitable long-term economic development and in the name of a more readily modulated credit-money supply. First, the public can act directly on SIPs themselves through open market operations, as just noted above. And second, the public can reclaim a significant portion of the allocative role for itself by investing directly in, or guaranteeing privately made investments in, infrastructure and new firms in vanguard industries currently starved of capital notwithstanding aggregate capital glut. The latter it can do through a new instrumentality, functionally situated between the central bank and the treasury, that we can think of as a “Public Investment Authority” (“PIA”) predicated on the proposition that “economic development” – perhaps better called “economic renewal” – is a perpetual process.

The public could even continue to afford private investors a role in such a bank’s operations, so as to capitalize on the Hayekian informational / “price-discovery” roles that disaggregated investors can play. This it could do through a fund that issues multiple classes of investment security associated with varying kinds of primary market investment, guaranteeing principal and interest after the manner of Treasury securities while also including a variable equity sliver whose long-term yield is tied to the fortunes of

⁹⁰ See Robert C. Hockett & Saule T. Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016).

⁹¹ See, e.g., Robert Hockett, *Open Labor Market Operations*, working paper (2013).

financed firms, industries, local or regional economies, or any combination thereof.

Lest this idea be thought far-fetched, we should consider the case of the Reconstruction Finance Corporation (“RFC”) – a remarkable public institution whose disappearance from public memory becomes quite astonishing once one learns more about what it did. Founded during the New Deal era first to restore failed post-crash banks, money markets, real estate markets, railroads, and other key industries, the RFC ultimately developed into a proactive investment bank that became by far the largest corporation in the world, with a balance sheet that dwarfed the whole of Wall Street.⁹² Still-surviving governmental and quasi-governmental instrumentalities as varied and gargantuan as the Commodity Control Corporation (“CCC”), the Export-Import Bank (“Ex-Im Bank”), the Federal Housing Administration (“FHA”), the Federal National Mortgage Association (“Fannie Mae”), the Small Business Administration (“SBA”), and others were *all* once its subsidiaries.⁹³

Through these and other instrumentalities, the RFC allocated credit directly, widely, and soundly, revitalizing the American economy and returning large returns both to the Treasury and to the many private investors permitted to assist in financing its operations by purchasing its bonds. It also engaged in open market operations akin to those of the Fed, in the name of maintaining stability among SIPIs additional to the money rental - i.e., “interest” – rate alone.

Something like a revived RFC – a PIA – is probably going to prove necessary in all modern economies going forward, as I argue in both earlier and forthcoming work.⁹⁴ Its design can be made to accommodate contemporary modalities of finance too, as also shown in that work. In the remainder of *this* work, however, the focus will be on the community-level operations that a forthrightly allocative public finance instrumentality can enable – operations that are the subject of Professor Block’s essay. It should be clear from the foregoing that there is no meaningful financial – no “capital scarcity” – obstacle to its doing so, while there is every equity, sustainability, and stability-redolent imperative that we turn now to doing so.

⁹² See, e.g., JAMES S. OLSON, *SAVING CAPITALISM: THE RECONSTRUCTION FINANCE CORPORATION AND THE NEW DEAL 1933-1940* (1988).

⁹³ Id. SEE ALSO JAMES S. OLSON, *HERBERT HOOVER AND THE RECONSTRUCTION FINANCE CORPORATION 1931-1933* (1977); and JESSE S. JONES, *50 BILLION DOLLARS: MY THIRTEEN YEARS WITH THE RFC* (1951).

⁹⁴ See, e.g., Hockett, sources cited *supra* notes 12, 133, and 134; Hockett & Omarova, *supra* note 11; also Robert Hockett & Saule Omarova, *Private Wealth and Public Goods: The Case for a National Investment Authority* (working draft, 2017)