

The Rise of the Money Market: The U.S. State, New York City Banks and
the Commodification of Money, 1945–1980

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Abstract

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This dissertation traces the commodification of money in the U.S. after World War II. In 1945, all money was issued either directly by the government or, under conditions determined by the government, by commercial banks. Today, forms of money that are issued by private firms without government backing make up the majority of all money claims, and a significant part of the U.S. payment system is operated by a private organization. These forms of money were essentially in existence by 1980; hence this dissertation focuses on their emergence between the late 1940s and the late 1970s.

The new forms of money emerged outside public purview. In part, this was the result of their wholesale character: they were used not by the many households and small businesses that each made modest payments but by the few large organizations that moved vast sums around. But it was also the result of a fundamental choice made by these large organizations. They created new forms of money not by trying to change public laws but by evading them, through private contract and private law. While public discourse and democratic decision-making played virtually no role in the process, the state as an issuer of financial instruments did. Central bank deposits and government securities formed the basis on top of which private actors built crucial parts of the new forms of money.

Creating a new form of money is difficult because its creators need to achieve two potentially contradictory goals. To get private actors to join the market, the creators need to

convince them that the products traded are equivalent to money. To keep public actors from shutting down the market, the creators have to convince them that the products traded are not money (otherwise, the creators would be involved in counterfeiting). The former goal, I will argue against non-sociological explanations, cannot be achieved only by discovering an opportunity for arbitrage, exploiting a legal loophole, or making use of technological change. As important as these cognitive innovations are, the creators of a new form of money also need to be able to mobilize preexisting social relationships, so that the necessary transaction volume to render a financial instrument a form of money is achieved. The latter goal—keeping the state from shutting down the new form of money—was particularly hard to achieve in the postwar U.S. with its policy monopoly over money exercised by the Federal Reserve, a knowledgeable and powerful institution. I will argue that private actors found it possible to create a new form of money when the Federal Reserve saw the innovation only secondarily as concerned with money and primarily as furthering one of its other goals, in particular the financing of the U.S. government and the functioning of the banking system.

Drawing on new archival data, this dissertation traces the eventful process through which the creators of private money navigated the two conflicting imperatives. Chapters 2–4 investigate new forms of money as a store of value. Chapter 2 describes how securities firms and corporate treasurers created a pioneering money market—the one in repurchase agreements—and how the major commercial banks reacted by calling for a restoration of the old monetary system. Chapter 3 shows that, when this call went unheeded by the Federal Reserve, the commercial banks themselves began to create new money markets, with effects that percolated through the entire financial system and led participants to reassess their roles and the norms that guided their interactions. Chapter 4 explains the management of the first major crisis of the money market, in

1974, as a silent triumph of the commercial banks over the Federal Reserve—in a moment of weakness, the money market became entrenched. Chapter 5 turns to money as a means of payment. It shows that, in contrast to the decentralized emergence of the money market, major commercial banks in the late 1960s built a new payment system through coordinated action and, in the crisis of 1974, took tremendous risks to stabilize that new form of money.

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Chapter 1: Introduction

On February 27, 1961, the chief operating officers of the largest commercial banks in New York City came together for a meeting at the New York Clearing House. One of the Clearing House member banks—Citibank—had introduced a new form of short-term investment for its institutional customers a few days earlier, and the other member banks had quickly followed in Citi’s footsteps. Now the chief operating officers sat down to coordinate the specific form that the new financial product should take. In particular, they decided not to issue the certificates in small denominations. The minutes of the meeting explains this decision with “the possibility of an adverse legal decision that [...] banks in issuing small denomination bearer certificates would be in effect issuing money and thus such certificates would be made subject to prohibitive issuance taxes imposed by Sections 4881 to 4885 of the Internal Revenue Code of 1954.”¹ How did private banks, almost fifty years after the establishment of the Federal Reserve, find themselves pondering the possibility that they were “in effect issuing money”? And if the only concession they made was to avoid small denominations, did they not end up creating a new form of money in fact?

¹ Steering Committee Meeting Minutes, February 27, 1961, folder “March 13, 1961,” Steering Committee Files (hereafter, SF) 3, New York Clearing House Archive, Rare Book and Manuscript Library, Columbia University.

This dissertation explores the emergence of new forms of money in the U.S. between 1945 and 1980. At the beginning of that period, money was closely controlled by the government. At the end of the period, private actors had created a number of new forms of money that have hardly changed qualitatively since but grown quantitatively. Today, private forms of money as a store of value—so-called money markets, e.g., commercial paper, certificates of deposit, and eurodollars—make up the majority of all money claims, which in the U.S. currently exceed \$25 trillion; by way of comparison, the volume of mortgages is \$14 trillion (Ricks 2016:33–34). A private form of money as a means of payment—the Clearing House Interbank Payment System (CHIPS)—is currently used for 111 million payments per year, almost as many as the Federal Reserve’s payment system (Bank for International Settlements 2017:407).

Money is the connective tissue between all economic transactions in a society (Polanyi 2001), but the actors in the new forms of money rarely take this connection into account. Money, to a considerable extent, is commodified. On the money markets, it is bought and sold for a profit; the private payment system is run as a financial service company that competes with other organizations. These actors approach the ideal type of individual profit maximization. Their actions have profound consequences for all members of society. The internal dynamics of the new forms of money shape the rest of the economy—almost imperceptibly but enduringly in normal times, and violently during crises. William Cronon (1991:127–32) has shown vividly how, in late 19th century Chicago, a so-called corner in the market for wheat had explosive consequences for the price and availability of physical wheat. The functional equivalent of a corner in the market for money in the early 21st century defies narration because its nature is so abstract and its scale so vast. But it is clear that, in 2008, lines of action in the money market

geared toward making profits (and then, in a panic, toward avoiding losses) were a crucial factor in the financial crisis that almost brought down the U.S. economy and many parts of the world economy.

Because money is the most general and abstract economic entity, the actions of those who create, destroy, and manage it percolate through the entire society. How did so many of these decisions end up in the hands of private actors?

Existing Explanations for the Emergence of New Forms of Money

The scholars who have studied the new forms of money most closely—heterodox economists, legal scholars, and historians—have pointed at three main causes: the exploitation of arbitrage opportunities (Mehrling 2011; Minsky 1957), the discovery of legal loopholes (Ricks 2016), and changes in technology (Battilossi 2010). The most prominent perspective is the first one, identified with the economist Hyman Minsky, who observed two new money markets in a Wall Street brokerage and drew out the implications of this innovation for monetary economics in an article in the *Quarterly Journal of Economics*. The *emergence* of new money markets was not Minsky’s focus, and he explained it simply as “the result of profit-seeking activities” (1957:172). The leading contemporary scholar of money markets, Perry Mehrling, echoes this explanation in this thumbnail account of the rise of money markets: “In times of rising prices the Fed tightened monetary policy, causing money market interest rates to rise, thus creating incentive for private liquidity provision. As a consequence we got financial innovations such as the certificate of deposit, bank commercial paper, and Eurodollar borrowing” (2011:70).

For all the important ways in which these contributions have improved our knowledge of money markets, I will argue, based on archival research, that they do not provide a convincing

account of the emergence of money markets. Their focus on individual-level cognitive phenomena (heterodox economics and legal studies) or macro-trends (technological accounts) obscures the intermediate-level social relations that were crucial to the establishment and management of the new forms of money. Private actors did not always want to exploit profit opportunities; they sometimes tried to go back to a more stable system of money organized around government agencies and self-governing bodies. Individual profit maximization, I will argue, was more an outcome than a driver of the process. Legal innovations were crucial but not sufficient to get a new form of money going; they had to be accepted by a minimum number of relevant potential market participants, and for this acceptance legal details were no more important than the harnessing of pre-existing social relationships. Technology was necessary for the trading of very short-term financial products (often with a maturity of only one day) between geographically distant financial centers and the settlement of the payments that these trades entailed. But the development of faster computers and new telecommunications equipment did not translate in a predetermined way into new financial practices; instead, technological adoption was socially constructed by the creators of the new forms of money.

Existing accounts of the money market tend to portray the role of state actors in the emergence of new forms of money as one of permissiveness driven by limited knowledge. Minsky characterized the environment in which new forms of money emerge as follows: “The attitudes of [...] central bankers [...] during a boom can be characterized as a version of the Maginot line mentality. The defense against the imperfections of the financial mechanism that was revealed in previous depressions is now perfect, the money market is now working well, hence there is no need to worry” (Minsky 1957:186). Writing six decades later, Mehrling claims that widespread “ignorance of how the system works allows those few who do know, i.e. the

bankers, to build more or less as they like, for their own convenience and profit” (Mehrling 2017:3).

I find that, while the public was indeed overwhelmingly ignorant of the new forms of money, executive agencies were not. The Federal Reserve, in particular, registered innovations in the money market rather quickly. It sometimes even encouraged them before they happened. What needs to be explained is why the central bank understood the general dynamics of the system rather well but did not collect the data necessary to make that understanding actionable, and hardly shared what knowledge it had with the public.

While overestimating the epistemological challenge to executive agencies, existing accounts underestimate the epistemological challenge to private actors. Only because they traded in a new form of money, bankers did not yet know how the system that they were creating worked. Knowledge about the new forms of money was produced and their form was shaped in a process at the border between private actors and the state.

This process was hidden from public scrutiny, importantly through the use of private contracts and private law that served to demarcate the new forms of money as topics apart from democratic debate. That new forms of money emerged as a silent revolution was no accident but constitutive of the process.

This dissertation, then, sidesteps the question of what money really is that has animated much sociological research (Dodd 1994; Ingham 1996). It is agnostic on the point of whether (or from what time on), say, repurchase agreements were money. Instead, it seeks to illuminate how social actors answered this question, importantly considering which social actors were part of that conversation and which social actors were kept out of it. The dissertation is open to the possibility that social actors, when they took part in the events that today are being cased as the

emergence of new forms of money, primarily used a different frame, e.g., one of bank funding or government financing.

Because of the focus on the social construction of money, I rarely use the terms “shadow banks” or “shadow money.” They came into use only after the period under analysis, and seem to imply (though the sophisticated users of the term do not intend to imply this) that shadow banking has not quite the importance of traditional banking. Some contemporary observers note that “the shadow banking system is, in fact, a real banking system” (Gorton 2010:45). The use of the term “shadow banks,” in particular, seems to imply that they are institutions distinct from banks. Yet a lot of what banks (even if we define them in the narrowest sense of the term) do is shadow banking. Such conceptual ambiguities confront not only contemporary scholars but have already confronted practitioners in the postwar period. How they made sense of them or left them unresolved, I will argue, was an important influence on the shape that money was to take.

Why Money Matters

The creation, destruction, and management of money is a matter that impacts all members of society because money serves to coordinate action both diachronically and synchronically. When money works, its role is taken for granted. To better understand the role of money for society, it is thus useful to look at the rare but consequential cases in which money stops to work unproblematically.

Diachronically, money matters as a store of value. Social actors use it to make good on financial promises that they made in the past, and to make new financial promises about the future. Mehrling creates a feeling for the awesomeness of this process:

It is in the daily operation of the money market that the coherence of the credit system, that vast web of promises to pay, is tested and resolved as cash flows meet cash commitments. The web of

interlocking debt commitments, each one a more or less rash promise about an uncertain future, is like a bridge that we collectively spin out into the unknown future toward shores not yet visible. [...] That bridge [...] is most vulnerable [...] right at the leading edge between present and future. (Mehrling 2011:3–4)

If the diachronic function of money ceases to work, social actors are haunted by their past, as they can no longer fulfill promises that they have made and may be taken to court over it. They also become severely constrained regarding the lines of action that are open to them in the future. In the aggregate, the freezing of money implies that the worth of future income is deeply discounted. This was a major driver of the crisis of 2008 (Brunnermeier 2009; Gorton 2010; Tooze 2018). To extend Mehrling's metaphor: if the bridge into the future collapses, the value of the land on the other side drops.

Synchronically, money matters as a means of payment. When it ceases to fulfill this function, the consequences percolate rapidly: "Upon an issuer default, the holders of its money-claims may encounter serious practical problems. They may have payments due [...] to suppliers, employees, or lenders, for example" (Ricks 2016:48). This process is virtually instantaneous: "Money-claims lose their moneyness on default, and moneyness is what they were held for in the first place [...] Nor will these consequential losses be retroactively mitigated if the money-claims are ultimately honored in full" (Ricks 2016:49). Writing about the 2008 crisis, Mark Blyth highlighted the synchronic importance of money when he imagined policy-makers asking themselves: "what would happen if there was no money in the ATMs and no paychecks were being paid out?" (Blyth 2013:48).

Because money is used across all sectors of the economy, the shock from a break-down of money impacts virtually the entire society. And the shock can be dramatic. That payments have to be executed on time has been called the "survival constraint" by the heterodox economist Marvin Minsky (cf. Mehrling 2011:13). Losses on assets held over the long term can be adjusted

for, e.g., a household can defer buying a new car or a company can pay a lower dividend (or, to look common practices in the eye, fire workers). Losses on assets held for a short term as a transaction reserve are different: when they happen, a transaction that has already been planned and around which other decisions have been made cannot take place. The language of the “survival constraint” in financial economics is mirrored in the language of a “nuclear option” in international economic policy. Most recently, it has been used to describe plans to cut Russia off from the international payment system. Such a move would be more drastic even than sanctions because it would press the one button that virtually eliminates all economic exchange with a national economy.

The Old Forms of Money

Under the original New Deal system, there was only one *unit of account*: the U.S. dollar. In contrast to the abundance of units of account in the 19th century—currencies issued by different commercial banks, gold dollars, silver dollars, etc.—, the U.S. had attained one national currency (Helleiner 2002).

But there actually were three different forms in which money served as a *store of value*. The most iconic form is cash. It is issued by the central bank. The second form is the deposit, which is issued by a commercial bank. That bank customers can typically exchange the one for the other suggests that the deposit is merely a representation of cash. But that is not the case. Cash and deposits are two forms of money that usually trade at par. However, because of limitations on which assets the central bank will accept from a commercial bank in exchange for cash, a bank is typically not able to pay out all its deposits in cash. A third form of money are the so-called federal funds. Analogous to nonbanks keeping deposits in an account at a bank, banks

are keeping deposits in an account at the Federal Reserve—these are the federal funds. Like cash, federal funds are issued by the central bank, but unlike cash, only a few actors—essentially, the U.S. commercial banks—can hold that kind of money.

These three forms of money differed in the *means of payment* associated with them. Cash requires no separate payment system: one simply gives the notes or coins to somebody else and the payment is completed. The other two forms of money in existence in 1945, however, required payment systems. To make a payment from her bank account, a customer wrote a check and gave it to somebody else. The recipient deposited the check at her bank. That check deposit would not complete the payment but set in motion a whole machinery in the background. The banks in each large city—most importantly, in New York—organized a clearing house through which they exchanged the checks drawn on each other, computed the net payments between the banks, and settled the payments through a transfer of initially gold or cash, later federal funds. To transfer federal funds, the Federal Reserve operated a payment system called FedWire. When a bank wanted to transfer money to another bank, it told the Federal Reserve through FedWire to subtract funds from its account and add it to the other bank's account. Because FedWire worked through telegraph and the payment was settled on the same day, federal funds could be moved around quicker than cash or checks (checks exchanged through the Clearing House were available only the next day). Federal funds were, in the words of a publication by the Federal Reserve, the “cashiest cash” (Madden 1958:42).

The New Forms of Money

From the late 1940s on, private actors created several new forms of money as a store of value—the instruments traded on the so-called money markets—, and one important new form of

money as a means of payment—CHIPS. As a response to the 2008 crisis, in which the money markets played a crucial role, scholarly knowledge about the money markets has grown exponentially, with important contributions from heterodox economics, legal studies, and history (Mehrling 2011; Ricks 2016; Tooze 2018).

The actors on the money market are large organizations, for example banks and industrial firms. Money-market claims are not money across the entire society in the way that a dollar bill is. They are not generalized claims on value for the many households and small businesses that lack the million-dollar minimum investment, technical equipment, and—most basically—knowledge about the existence of these markets necessary to participate in them. (These households may, however, have access to adapted forms of money-market instruments such as money market funds (Krippner 2011:65–67).)

But forms of money are always “general only within social communities and spheres of activity” (Carruthers 2005:355), and money-market claims are accepted in a community that, though limited in the number of participants, possesses a huge volume of funds. To equal the amount that Intel puts into money-market instruments in the days before its quarterly dividend payment of ca. 1.4 billion dollars, it takes many middle-class families who put money into their bank account in the days before they are purchasing a new car. Given the current ratio of funds that are available to the largest firms relative to those available to the mass of households, it is useful to remember Wayne Baker’s (1987) proposal to focus our analytical lens on the forms of money used by the largest and most central actors in the economy.

Some of the money-market participants only buy and sell money-market instruments issued by others, and some also issue money-market instruments. A money-market instrument is a contract with a private firm that, for the counterpart, is close enough to the conventional forms

of money—cash, bank deposits, federal funds—to be treated as equivalent for all practical purposes as a store of value. The private firms that issue such money-market instruments are most importantly banks but also other firms, such as industrial firms and non-bank financial firms.

Their counterparts treat these money-market instruments as practically equivalent to money when they fulfill two conditions: they are paid back in full and on time. When Intel, for example, wants to have on hand the funds to pay out its dividend on a given day each quarter, it must be practically sure that it will be able to pay the full dividend on the pre-announced day. Paying the dividend only in part or late would be a public-relations disaster and an invitation to litigation. To store the funds up until that day, the firm will use only money-market instruments that it judges to meet the criteria of payment in full and on time.

Why would the company not simply keep the funds in its bank account? It will earn a higher interest rate in a money-market instrument. This is a fine line to walk. According to best practice, the higher interest rate should only play a secondary role in the money market, with default risk playing the primary role. The leading textbook on the money market implores practitioners: “the [money manager’s] job is first to ensure that the funds he invests will be available whenever his firm needs them and only second to maximize the return he earns on these funds” (Stigum and Crescenzi 2007:456).²

This means that there is only a small grey zone: typically, a money manager treats a given instrument as close enough to money to be practically equivalent, or not. While the instruments traded on the money markets are not all homogenous in the way that different dollar

² Throughout, the dissertation reproduces the male pronouns that are prevalent in source documents and the practitioners’ literature. Space constraints do not allow a discussion of gender (nor, for that matter, race) in finance, but see the important discussion by Karen Ho (2009).

notes are (and practitioners can articulate awareness of this fact *in moments of reflection*), the short duration of each transaction *in practice* de-emphasizes the specificity of transactions. Money-market lenders do not carry out anything resembling due diligence on the organizations to which they are lending (Judge 2017:438–43; Ricks 2016:201, 212–15, 257–58). They often decide between 4pm and 5pm whether they will lend to General Motors for three days. They may not even want to take longer to make that decision, because the probability that General Motors will go bankrupt over the next three days is miniscule. (The probability that it will do so over the next three years is certainly higher, and the probability over the next three decades is real indeed.)

The issuance of a money-market instrument raised the amount of money that existed in the economy, not necessarily in a legal but in an economic sense. For example, in the overnight federal funds market, bank A lent one million dollars of federal funds from its account at the central bank to bank B. (Technically, this was achieved by making a payment over a certain sum through FedWire, and a payment over the sum plus interest through check. The FedWire transfer was settled the same day; the check, the next day.) Previously, there had been one million dollars of money (in bank A's account at the Federal Reserve). After the transaction, there are two million dollars of money: one million dollars in bank B's account at the Federal Reserve and a check over one million dollars that bank A could use. Bank A treats this check as practically equivalent to money, and for good reason: bank B will almost certainly be able to pay back the one million dollars (plus interest) in federal funds the next day. It will have made a trading profit, or be able to sell a Treasury bond that it owns, and in the worst case can ask the Federal Reserve for an emergency loan that puts one million dollar into bank B's account at the Federal Reserve. But the ability to pay back is only *almost* certain. That caveat is forgotten in good times and

suddenly becomes prominent in market actors' perception during a crisis, when they lose funds that they thought were almost *certain*.

There is much less scholarship on CHIPS, the most important new form of money as a means of payment—in part because it did not fail in the 2008 crisis (Rambure and Nacamuli 2008). But the outlines of the payment system are clear and simple. It is owned by the largest participating banks and consists of servers at a central location connected to computers in the participating banks. The banks enter the payments that they make to other banks into the system. At the end of the day, the payments between each pair of banks are netted out, then the payments to and from each bank are netted out, and the result (the so-called net net position) is paid from the bank's account at the Federal Reserve to CHIPS' account at the Federal Reserve (when the bank has a net net outflow of funds), or the other way around (when the bank has a net net inflow of funds).

Sociology of Money

Sociologists have approached money in the U.S. after 1945 in two main ways. While each brings out important aspects of the emergence of new, private forms of money, both are limited in their ability to explain the process.

First, sociologists have paid much attention to the Federal Reserve. An early strand of research has sought to explain why central banks became independent and prioritized price stability over full employment (Fourcade-Gourinchas and Babb 2002; Polillo and Guillén 2005). With their focus on the relationship between the central bank and other parts of the state, these studies have ignored the money market almost entirely. More recently, scholars have focused on how central banks make decisions about monetary policy—in particular, what role monetary

economics plays in this—and how they communicate their policies to financial markets and the broader public (Abolafia 2010; Fligstein, Stuart Brundage, and Schultz 2017; Holmes 2014; Krippner 2011:106–37). These studies treat the money market as important but relegate it to the background of their accounts. In *Capitalizing on Crisis*, for example, Greta Krippner provides a “Primer on Central Banking” (2011:109–14) that assumes the existence of the federal-funds market. This leaves open the question of how the federal-funds market came into being. The most recent line of sociological research on central banks explores the entanglement of central banks and money markets (Braun 2018; Walter and Wansleben 2019; Wansleben 2018). This scholarship shows that central banks have come to rely on financial markets to steer the economy, and that this reliance endows the central banks’ counterparties with what the authors call infrastructural power: central banks’ independence from democratic politics has gone hand in hand with reliance on private firms. As important as this insight is, these studies set in with money markets already in existence. They do not explain how the money markets emerged in the first place, i.e., before there was any infrastructural power to be exercised.

Second, sociologists have studied how ordinary people make sense of money and how they use it (Baker 2001; Zelizer 1989, 1994). The core finding of this literature is that, while legally homogeneous, modern money is made socially heterogeneous by its private users. They earmark some dollar bills for one purpose, and other bills for a different one. Similarly, the origin of a payment can influence how it is used. Social actors strenuously resist economists’ claim that all money is perfectly fungible. Zelizer’s way of studying how things that are clearly money are treated differently provides an important inspiration for the study of money markets, on which things that are not clearly money are treated as interchangeable. Bringing Zelizer’s insistence on studying the social construction of money to the creation of new forms of money

allows to sidestep the debate over what money really is (Dodd 1994; Ingham 1996). I will not try to draw the line between money and what has been called near money, quasi money, and shadow money. Instead, I will study how social interactions have agreed upon or fought over the drawing of that line. Zelizer's tools of analysis, however, fit the household much better than the large organizations active on the money market. Sociologists have studied these institutions, if not in their role for the creation of new forms of money, and I turn to their ways of doing so.

Insights from the Sociology of Financialization More Broadly

As sociologists have explored the rise of finance in the postwar U.S., a first important line of research has stressed the role of expertise. The creation of complicated new financial products has been an important driver of the rise of finance during the second half of the 20th century (Fourcade and Khurana 2013; Lépinay 2011; MacKenzie 2006, 2011, 2018; MacKenzie and Millo 2003). Scholars interested in these products have often traced the diffusion of new mathematical models from academic economics into financial markets via “well-paid staffs of mathematical savants” (Davis 2009:15). Yet this approach has little leverage in studying the money market, because money-markets instruments “are *the most primitive* financial instruments in existence” (Ricks 2016:26, emphasis in the original).³ It does not take a mathematical savant but only a fifth-grader to calculate the price of a negotiable certificate of deposit. On the level of the individual money-market instrument, the more important expertise was in the exploitation of legal loopholes, which suggests opening the study to insights from the sociology of law (Pistor 2013; Riles 2011, 2014). In the making of the new payment system, the most important expertise

³ The market for money derivatives consists of complicated products, but is only indirectly linked to the money market (Bryan and Rafferty 2007).

was in computer technology, which invites us to consider the insights of recent research on market devices (MacKenzie 2018; Pardo-Guerra 2019; Poon 2009; Preda 2006).

While a lot of this work is focused on knowledge about individual products, another important form of expertise is concerned with the properties of the overall system made up by such products. There is a huge difference between isolated knowledge about each node in a network and knowing the network structure. For example, in a remarkable article in the *American Sociological Review*, Stanley Lieberman (1961) re-aggregated data collected by the Federal Reserve about the distribution of credit across banks and showed patterns of interregional flows that were not visible to the central bank or, for that matter, commercial banks. A study of the governance of the money markets must ask who collected (or not) knowledge about system properties.

A second important line of research has stressed the role of the state as a force that shaped the rise of finance in the second half of the 20th century. Both Greta Krippner's *Capitalizing on Crisis* (2011) and Sarah Quinn's *American Bonds* (2019) show how the state removed old restrictions and helped to create new markets. Such state action can result both from banks' lobbying and as the result of attempts by politicians to solve other problems, such as middle-class complaints over expensive mortgages or a fiscal crisis of the state. In the creation of the money market, however, the changing of old laws and the adoption of new laws played only a supporting role at best. By far the most important mechanism through which innovation was brought about was the drawing up of new private contracts and new private law.

A third line of research, on rule evasion, promises the most direct analytical leverage for a study of the emergence of new forms of money. A pair of articles (Funk and Hirschman 2014; Thiemann and Lepoutre 2017) have demonstrated how insights from legal sociology (Black

2002; Edelman, Uggen, and Erlanger 1999) and political science (Hacker, Pierson, and Thelen 2015) can be made fruitful for financial sociology. Russell Funk and Daniel Hirschman (2014) have shown that, in the 1980s and 1990s, a then innovative class of financial products—interest rate and foreign exchange swaps—fell between the cracks of the categories used by different regulatory bodies. The growth of trading in these financial products undermined the separation of commercial and investment banking, which, until 1999, financial institutions were unable to overcome through lobbying. Matthias Thiemann and Jan Lepoutre (2017)—in a study of the market for asset-backed commercial paper market in France, Germany, and the Netherlands in the 1990s and 2000s—have identified conditions under which regulators find it more or less difficult to identify financial innovations and adjust regulations. With their focus on the state, however, these pioneering studies do not explore how a legal innovation can spawn a market. That the process is not straightforward is suggested by Daniel Beunza’s (2019:222) finding that the very market analyzed by Funk and Hirschman (2014) almost broke down when a scandal threatened to destroy trust among market participants. To create a new market that evades existing regulations, legal innovations are necessary, but they do not suffice. The new market, I will argue, cannot be discovered by cognitive insight, it must be created by the rewiring of social relationships.

An Agenda for Researching the Emergence of New Forms of Money

Creating a new market is difficult (Beckert 2009; Fligstein 2001; Padgett and Powell 2012), and creating a new market in money is even more so. It requires that its creators resolve the contradiction between two imperatives. To get private actors to join the market, the creators need to convince them that the products traded are *equivalent to money*. To keep public actors

from shutting down the market, the creators have to convince them that the products traded are *not money* (otherwise, the creators would be involved in counterfeiting).

Already on its own, each of these two challenges is daunting. Convincing private actors of a new form of money is difficult not only because such money, by definition, lacks the approval of the state that has been found to help markets come into being (Fligstein 2001), but also because money has virtually no quality outside the market on which it is traded. “[W]hether the seller trusts money [...] depends on collective, self-reinforcing beliefs about others’ trust of money” (Carruthers 2005:370; see also Carruthers and Stinchcombe 1999). The creator of a new form of money cannot, like the creator of a new form of mouse trap, convince early adopters to join the market on the strength of an inherent quality of the product. In the case of money, the product presupposes, to a large extent, the existence of a market for it. As I will show through a counterfactual case (the first, failed attempt to introduce a negotiable certificate of deposit), the identification of a legal loophole alone is necessary but not sufficient for a new money market to emerge. Similarly, a financial firm will not join a new payment system even if that system has the fastest hardware and the most efficient software as long as the system is not also joined by the counterparties with which the financial firm wants to exchange payments.

These problems of convincing private actors can be overcome, I will argue, by mobilizing preexisting social relationships. The creators of new forms of money were already trading with many large participants in existing financial markets. The trust that had developed through these sustained interactions was necessary to reach the critical mass necessary to start a new money market. In the case of the new payment system, the social relations to be mobilized had even been entrenched formally by way of the New York Clearing House. With the establishment of the Federal Reserve in 1913, the Clearing House lost much of its earlier

function as lender of last resort that has attracted much scholarly attention (Gorton 1985; Yue 2015, 2016; Yue, Luo, and Ingram 2013), but, this dissertation will show, it continued to serve as meso-level organization that could spawn novelty.

Convincing state actors that the products on a new market were not quite money was difficult in the postwar U.S. because there was, unlike in the case of derivatives (Funk and Hirschman 2014), no turf war between different agencies: the Federal Reserve had a clear policy monopoly over money. The Fed, moreover, came close the ideal type sketched by Thiemann and Lepoutre (2017) of a regulatory agency able to spot and stop evasion. It was embedded in the relevant interpretive communities, possessed expertise, and could wield sanctioning power.

I will argue that private actors found it possible to create a new form of money when the Federal Reserve saw the innovation only secondarily as one concerned with money and primarily as concerned with another issue. In addition to conducting monetary policy, the Federal Reserve was and is also co-responsible for the functioning of the banking system and the financing of the U.S. government. The last responsibility, in particular, receives little attention today but was a major concern for the Fed in the immediate postwar period. In a telling episode, when pushed by the U.S. Treasury to decide between monetary stabilization and easy government financing, the Fed chose the latter (Hetzl and Leach 2001b; Moe 2013). Throughout the 1950s and 1960s, concerns about assuring the financing of the government budget and the funding of the banking system were key influences on the permissive attitude of the Fed toward new forms of money.

Even when budding creators of new forms of money can solve each problem on its own, there remains the challenge of solving the two problems *simultaneously*. In the 19th century U.S., the struggle over new forms of money was often explosive, as the connection between private and state actors was forged (or not) in the public sphere and through democratic politics

(Carruthers and Babb 1996; Polillo 2013; Sklansky 2017). What made the creation of new forms of money after World War II so comparatively smooth was that it took place outside public and Congressional purview. The modern money markets have “no legal-institutional character” apart from “property and contract” (Ricks 2016:32). Part of this change had to do with the disappearance of money as a salient topic from the democratic agenda. This process is not yet well understood (cf. Sklansky 2017:252–57) but beyond the purview of this dissertation. I will focus on the complementary process: how—through the use of private contract and private law—private actors, with the acquiescence of and sometimes encouragement by executive agencies, created new forms of money in a way that helped to keep these forms of money in the realm and imagination of private issues.

The analytical framework developed above provides guardrails for an empirical analysis of the emergence of the new forms of money as an eventful process (Sewell 2005, 2008). Over the three decades under analysis, the relevant actors did not possess attributes and interests that would have been stable enough to generate alliances that would repeat themselves. Instead, actors were, to a considerable extent, recomposed through the very process of the emergence of new forms of money. In a stark example, the major commercial banks initially grudgingly went along with new money markets when they were driven by smaller banks and opposed them when they were driven by securities firms. Only as a result of the new competition for funds that the major banks experienced as the result of these early creations did they become enthusiastic creators of new money markets.

Data and Method

With some remarkable exceptions (Lindow 1972; Minsky 1957; Woodworth 1972), the modern money markets emerged without the benefit of much academic attention. Like other current work on the issue (e.g., Mehrling 2011), I rely for basic information about the money markets heavily on a textbook for practitioners written by the financial journalist Marcia Stigum (Stigum 1978; Stigum and Crescenzi 2007) and studies published by the Federal Reserve (e.g., Madden 1958; Willis 1970). These publications, however, tend to describe the money markets as they worked once they were up and running, not their emergence.

This dissertation relies heavily on my examination of the newly available postwar archive of the New York Clearing House (NYCH). The Clearing House served as a forum for the major New York banks to exchange their views on, among other issues, the new forms of money. Through several task forces under the aegis of the Clearing House, the banks collected information on money market developments and coordinated (or failed to coordinate) their response. The Clearing House also set up and operated the leading payment system for the eurodollar market, CHIPS. The NYCH had two main bodies, which met monthly (and in urgent cases, in between): the Committee (composed of chief executives of the member banks) and the Steering Committee (composed of chief operating officers). For each body, the archive contains minutes that outline the conversations (ca. two pages per hour of conversation). More fine-grained information is available in the so-called Committee Files and Steering Files. These were the folders assembled by the managers of the Clearing House in preparation for the meetings of the respective bodies. The files contain letters exchanged with Clearing House members and regulators, memoranda from Clearing House employees, reports compiled by the Clearing House or member banks on legal or technological issues, and a variety of other documents. The

Clearing House archive provides, for the post-World War II era, an unprecedented contemporaneous record of collective action (and its failure) among U.S. banks and an important window on individual banks, who are often reluctant to open to researchers their archival records (if they have not already been destroyed to minimize litigation risk). On questions of the money market, the Clearing House archive has proven vastly more informative than the records of Marine Midland Bank (a NYCH member), which I inspected at the corporate archive of its successor organization, HSBC U.S.

I complement that source with Master's theses from the Graduate School of Banking that the American Bankers Association organized first at New York University and then at Rutgers University. Their authors typically were junior managers tapped for future high positions in a bank. They could draw on their own everyday expertise and had access to top bank managers for interviews. At their best moments, these theses provide rare glimpses into practices that were rarely documented in other forms.

For insights into the regulators' perspective, I used the Federal Reserve's online repository FRASER, which contains a vast amount of previously unpublished material. I used material not included in FRASER at the archive of the Federal Reserve Bank of New York; the Gerald R. Ford Presidential Library, which holds the papers of Federal Reserve Board chairman Arthur F. Burns; and the Baker Library of Harvard Business School, where the papers of Federal Reserve Board governor Andrew F. Brimmer were opened in early 2018.

To capture the perspective of legislators and the public, I have used media archives, particularly the one of the *New York Times*, and the papers of House Banking Committee chairman Wright Patman at the Lyndon B. Johnson Presidential Library. More than any other legislator, Patman sought to understand and counterbalance the changes in money after 1945.

In line with their respective topics, the chapters employ a varying mix of institutional and ideational methods. The second and third chapter, which trace the decentralized invention of new money markets (initially as a challenge by securities firms against bankers, then by bankers themselves), each begin by analyzing the institutional changes involved and end with an in-depth discourse analysis of two documents that provide insights into how powerful actors framed these changes: a confidential report from the Clearing House to the Federal Reserve, and the rare surviving transcript of a debate between representatives of all important market actors. The fourth chapter, on the money-market crisis of 1974, analyzes the struggle between the Federal Reserve and the Clearing House over risk-taking to end the crisis and their shared efforts to keep the character and extent of the crisis hidden from the public. It draws on minutes of confidential meetings between representatives of the Clearing House and the Federal Reserve, and on the daily reports of the Fed official in charge of the specifics of crisis management to the Board of Governors. The fifth chapter, which analyzes the establishment of CHIPS by the Clearing House, follows a more conventional account of institutional change within a well-bounded organization in relationship to its environment (such as bankers in London).

Organization of the Chapters

The second chapter describes the emergence, around 1950, of two pioneering money markets: in federal funds and repurchase agreements. These new money claims, created by private firms, went virtually unnoticed by the public. They commodified money, but not by rolling back state financial instruments. Instead, the new money claims took the form of private contracts built on top of deposits at the central bank and government securities. The chapter shows that each new form of money exploited an arbitrage opportunity, but that it could attract a

sufficient volume of transactions to function as money only because it also built on pre-existing social relationship: in the case of the market in federal funds, between brokers and bankers; in the case of the market in repurchase agreements, between government securities dealers and corporate treasurers. The Federal Reserve did not accuse these inventors of counterfeiting; in the case of the repurchase agreements, it even encouraged the innovation as a way to facilitate the implementation of monetary policy and support its role as the fiscal agent of the U.S. government.

The third chapter brings the eventful character of the process to the fore by showing how the commercial banks recomposed their interests profoundly within only four years. In the late 1950s, they tried to reinstate the monetary system as it had existed before the creation of the new money markets. When the Federal Reserve ignored that appeal, the commercial banks put themselves at the forefront of the creation of new money markets. In 1961, Citibank introduced the negotiable certificate deposit, and the other Clearing House members followed immediately. The chapter also demonstrates, by way of using a counterfactual from the prehistory of the negotiable certificate of deposit, that the exploitation of a legal loophole alone did not suffice to bring the new money market into existence but that it also required creating a market with buyers and sellers for the instrument. In the case of the negotiable certificate of deposit, Citibank fulfilled this requirement by enrolling a securities firm as a market maker. Finally, the chapter explores the sense-making process in which financial actors engaged as money became commodified. The sudden shift of the major commercial banks from protecting the old system to furthering the new one disturbed existing social relations and unsettled the norms guiding interactions across many financial activities. As part of this debate, participants articulated the prospect of a panic in the money market and called for governance reform, but the money market

had grown up without a mechanism for collective action that would have allowed to implement such reform, and the Federal Reserve did not stop the growth of the money market.

The fourth chapter analyzes the tumultuous events of 1974, when the money market experienced its first major crisis. The chapter explains the outcome of the crisis as the unintended consequence of a three-way interaction between the Federal Reserve, the money market, and the public. The Federal Reserve internally conceived of the crisis as primarily a run through the money market but, in its presentations to the public, framed the crisis as one of individuals banks, to be understood and resolved within the categories of the New Deal system. The major commercial banks saw through this double framing and were in an economically strong position because the money market run predominantly targeted mid-sized banks; panicked investors moved money into the largest banks, which hence benefited from the crisis. The major banks used this situation to walk the Fed down the path to their preferred outcome: a stabilization of the money market without putting private resources at risk.

The fifth chapter turns from money as a store of value to money as a means of payment. In that latter function, too, money was commodified in the postwar period. Most importantly, the Clearing House established the private, computerized payment system CHIPS in 1970. Because the nationwide importance of the New York Clearing House member banks was even greater in payments than in deposits, their participation alone overcame the hurdle of ensuring sufficient volume to make the system money-like. The U.S. state did not intervene, in line with a long tradition, including even the New Deal legislation, of seeing the payment system as a purely technical arrangement without enough economic redistribution to justify democratic decision-making. Whereas the new money markets had developed in a decentralized fashion in the form of private contract, the new payment system emerged as the outcome of collective action in the

form of private law. Its rules were formulated by the computer engineers who set up the infrastructure; they worked under the assumption that CHIPS was a purely technical arrangement. When, in 1974, the payment system entered a crisis simultaneous to the one in the money market, the heads of the Clearing House member banks renounced the view of CHIPS as mere technology and took considerable economic risks to stabilize the system. The sixth chapter concludes by explicating the theoretical contributions of the dissertation and its implications for contemporary attempts to repoliticize the question of what counts as money.

Chapter 2: Novelty in the Monetary System (1950s)

Introduction

Between the middle of the 19th century and the middle of the 20th century, the U.S. state gained increasing control over money. It started from a position of utter weakness: around 1850, issuing money was as fully a private affair as setting up a lemonade stand. This changed in leaps and bounds with the federal government's monetary and fiscal facilitation of the Civil War, the establishment of the Federal Reserve, the New Deal reforms, and the facilitation of World War II. By 1945, money in the U.S. was as fully controlled by the state as it was in the Soviet Union. Only in 1951 did U.S. authorities allow the price of money to fluctuate again. The forms of money in use immediately after World War II, however, remained clearly delineated by the state, which collected data on all forms of money and was able to directly influence them.

From the late 1940s on, private actors created new forms of money that evaded the government's control. This was not, however, a return to the monetary world of the 19th century. The creators of the new forms of money did not roll back the state's absolute presence in the monetary and financial system by way of legislative or regulatory change. Instead, the innovators repurposed the state's monetary and fiscal instruments by building private contracts on top of them. The first new money market was the one in federal funds, i.e., banks traded deposits at the

central bank with one another. Another important early money market, in repurchase agreements, was created when securities firms issued money claims collateralized with government bonds.

In a second important sense, too, the creation of money markets after World War II was not simply a return to the 19th century. The creation, destruction, and management of forms of money had been a political issue of the highest salience. William Jennings Bryan's Cross of Gold speech electrified the Democratic National Convention in 1896. Farmers and business owners across the country debated which money they would use. After World War II, the shaping of the monetary system took place outside the purview of the public. The new forms of money were not used by millions of private citizens and small business owners but by a small number of very large financial and non-financial firms.

This chapter examines the creation of two of the initial forms of new money after World War II: the markets in federal funds and in repurchase agreements. Economists have explained their emergence as the exploitation of arbitrage opportunities by individual actors maximizing their profits. It is true the new markets created a form of money with a price (i.e., interest rate) between those of two existing forms of money (or a form of money and a form credit). But the cognitive insight of inserting a new financial instrument in the interest-rate ladder was not sufficient. In neither the federal-funds market nor the repo market was the innovator a start-up. Instead, the new money markets were pioneered by large firms that already conducted many financial transactions with other large firms and who harnessed these relationships to create a new money market. Most strikingly, the brokerage firm that pioneered the market in federal funds did not directly make profit from its activity in that market but offered its services in the new market for free to draw more business to its fee-generating services in old markets.

The Federal Reserve learned of the new markets shortly after their creation and forego the opportunity to nip them in the bud. In the case of the federal funds market, the Fed was permissive. In the case of repurchase agreements, it was enthusiastic. Crucially, the Federal Reserve did not frame the emergence of the latter market primarily as a loss of control over money but as a way to improve government financing and the implementation of monetary policy. Repurchase agreements, the Fed held, provided ample financing to government securities dealers and made it easier for them to make a market in government securities, i.e., to be a seller to every prospective buyer and vice versa. This would help the Federal Reserve both in its role as fiscal agent of the Treasury (issuing new government securities) and in its implementation of monetary policy (which primarily worked through the buying and selling of government securities).

The initial money markets were created not by commercial banks—which, according to the textbook account at the time, formed the backbone of the monetary system together with the central bank—but by securities firms and non-financial corporations. The major commercial banks joined the market in federal funds, which was invented by a securities firm, without enthusiasm and to a large extent as a service to their smaller correspondent banks. The market in repurchase agreements emerged and grew without much participation or even awareness on the parts of the banks. Only in 1957 did the major commercial banks form a coordinated understanding of the new money market and develop a response.

Background I: From Private Money to Federal Funds, 1837–1913

The Many Forms of 19th-Century Money

Between 1837 and 1862, the United States possessed a monetary system that was fully private; until 1853, it was also fully individualized. Everybody who wanted to could set up a bank. No government permission was necessary. Once set up, the bank was free to invest in whatever assets it wanted, and to issue private bank notes to fund itself. The amount of money was determined by the bankers. The price of money was the price of these private bank notes. It fluctuated over time and differed from one bank to the next.

Anybody who accepted a bank note had to form an opinion on the likelihood that the issuing bank was solvent and liquid. There was an infrastructure to support that decision: note brokers who made a market in different bank notes, and monitoring firms, which published descriptions of the circulating bank notes and tables of their relative value. There was a considerable number of extremely risk-taking so-called wildcat banks, and also a lot of counterfeiting (Mihm 2007). “Sometimes it was unclear which was worth less: a high-quality counterfeit of a note issued by a solid bank, or a genuine bank note issued by a financially troubled bank” (Carruthers and Ariovich 2010:29). Using money was complicated:

It is difficult for the modern student to realize that there were hundreds of banks whose notes circulated in any given community. The “bank notes” were bits of paper recognizable as a species by shape, color, size and engraved work. Any piece of paper which had these appearances came with the prestige of money; the only thing in the shape of money to which the people were accustomed. The person to whom one of them was offered, if unskilled in trade and banking, had little choice but to take it. A merchant turned to his “Detector.” He scrutinized the worn and dirty scrap for two or three minutes, regarding it as more probably “good” if it was worn and dirty than if it was clean, because those features were proof of long and successful circulation. He turned it up to the light and looked through it, because it was the custom of the banks to file the notes on slender pins which made holes through them. If there were many such holes the note had been often in bank and its genuineness was ratified. All the delay and trouble of these operations were so much deduction from the character of the notes as current cash. (Sumner 1896:455)

This form of money was later seen as so cumbersome as to not be called money at all: “A community forced to do its business in that way had no money. It was deprived of the advantages of money. We would expect that a free, self-governing, and, at times, obstreperous, people would have refused and rejected these notes with scorn, and would have made their circulation impossible, but the American people did not. They treated the system with toleration and respect. A parallel to the state of things which existed, even in New England, will be sought in vain in the history of currency” (Sumner 1896:455).

Between 1863 and 1913, the money system received some public shaping (Carruthers and Babb 1996). The government established a “national currency” that was, despite its name, issued by nationally chartered private banks, and taxed all other bank notes out of existence. Except for the name of the issuing bank, all these notes were identical in design. The bank notes of different banks typically traded at par and hence could, for the most part, be used interchangeably. The bank had to hold government bonds worth more than the bank notes it issued, so that it could always redeem the bank notes by selling the government bonds. An additional reason for why these banks notes traded at par was that the government accepted all of them for payment of taxes.⁴ The amount of money was effectively limited by the amount of government bonds and, after the resumption of the gold standard in 1879, the amount of gold.

Beginning in earnest in the 1850s, bankers created a new form of money: demand deposits, i.e., checking accounts. “Demand deposits were the ‘shadow banking’ system of the National Banking Era, 1863–1914” (Gorton 2014:836). They were not backed by government bonds. It is around this part of money that the first capacities for collective action during crises

⁴ Except for customs duties.

were developed. Such capacities were not possessed by the first and, during the period, only federal institution to concern itself with the financial system. The Office of the Comptroller of the Currency, set up in 1863 to oversee the national currency, was not a central bank. It did not have direct influence on the amount or price of money but only examined the solvency of those banks that issued the national currency.

The New York Clearing House

The first institution to directly shape money took the form of private collective action, and it developed out of a technical task. With the rise of demand deposits, customers wrote an increasing number of checks that the recipients cashed at their bank—which in actuality meant that the recipient’s bank had to cash the check at the originator’s bank. To simplify this process, banks agreed on one place at which their messengers met and exchanged the checks drawn on all other banks. The first so-called Clearing House was set up in New York City in 1853. Beyond the physical simplification, a clearing house allows for multiple further changes in financial practice (Millo et al. 2005). By turning a number of bilateral exchanges into a hub-and-spokes network with the Clearing House account at its center, the use of bank notes or gold in making these payments could be reduced significantly.

The New York Clearing House assumed an even more important role from the crisis of 1857 on: it intervened when money threatened to stop working. Under both the free banking and the national banking system, customers could run on a bank. Under the free banking system, a run meant that many or all customers tried to exchange bank notes at the issuing bank into gold. Under the national banking system, a run meant that many or all customers tried to exchange demand deposits at the issuing bank into national currency or bank notes. Such runs led to a contraction of the amount of money in circulation and hence to a contraction of production and

of employment. They were possible because banks by definition lend long and borrow short (hence they are never able to simultaneously pay out all their callable liabilities) and because there existed under neither system a governmental backstop that would provide additional liquidity to banks that experienced a run.

The New York Clearing House members from 1857 on subscribed to the view that a run on one member bank could spread to other member banks, and that it was in the common interest to counteract runs by providing additional liquidity. This liquidity provision was achieved through the creation of a new form of money: the Clearing House Loan Certificate. It was issued by the Clearing House to a member bank experiencing a liquidity shortfall, which could use it to settle its payments to the other member banks. As a result, the liquidity-strained bank had relatively more gold or national currency on its hands to pay out its customers.

This creation of private emergency money was flanked by a series of further measures: secrecy about which member bank(s) was making payments in Clearing House Loan Certificates; the suspension of the publication of information on individual member banks' balance sheets, which was replaced by the publication of information about the combined balance sheet of the member banks; and a secret emergency examination of the books of the troubled bank(s). During normal times, the Clearing House sought to prevent a crisis from breaking out by conducting routine examinations of its members. Because of the "endogenous development of the clearing-house as the industry's organizing institution," the management of money from 1857 on "is not easily characterized as a market operating through a price system" (Gorton 1985:277).

The actions of the New York Clearing House mattered across the United States. Each bank of some size outside New York typically had a durable relationship with one large bank in

New York, in a practice called correspondence banking. Under the national banking system, banks outside of New York were allowed to hold part of their reserves as deposits with the major New York banks. This so-called pyramiding of reserves made New York the linchpin of monetary developments. “The New York clearing house members were the largest banks in the country and held most of the banking system’s reserves, so the solvency of the New York Clearing House was effectively the solvency of the banking system” (Gorton 2014:837). Yet the ability of the NYCH to stabilize money was circumscribed by the unwillingness of its members to support non-members (Yue et al. 2013) and the fact that the Clearing House had no control over the amount of national currency in circulation (Moen and Tallman 2015).

The Establishment of the Federal Reserve

The role of the state in money increased dramatically between 1913 and 1945. Of great importance was the founding of the Federal Reserve. The Federal Reserve directly controlled the volume of bank notes and of the deposits that the commercial banks held at the central bank, so-called federal funds. The central bank was created in reaction to the failure of existing arrangements in the financial crisis of 1907. The Federal Reserve issued bank notes and federal funds, and regulated the commercial banks which issued currency in the form of demand deposits to their customers. During crises, the Federal Reserve made emergency liquidity available to commercial banks by exchanging securities into bank notes or federal funds through the so-called discount window. This model emerged as a compromise between strikingly different policy positions, some of them arguing for a central bank that would control the actions of commercial banks in detail, and others who aimed for the central bank to be a type of NYCH with deeper pockets, i.e., an institution controlled by commercial bankers that would provide elasticity in the money supply.

Constructing a New Form of Private Money on Top of Federal Funds

The first new form of money after World War II emerged in 1948: the market in federal funds, i.e., the deposits that commercial banks hold in their accounts at the Federal Reserve (Willis 1970:24). These federal funds were, as a publication of the Federal Reserve put it, “Wall Street’s cashiest cash” (Madden 1958:42). They were immediately available to the recipient (not with a delay of a day, as many other forms of money).

If banks were short of federal funds, they could borrow them from other banks. That way, they did not have to pay the penalty interest rate imposed by the Federal Reserve on banks who had to borrow at the discount window. The banks who were lending federal funds could make higher returns compared to leaving their funds deposited with the Federal Reserve. The transactions in the federal-funds market were very short-term (often only for a day, so-called overnight transactions) and not secured by collateral.

What later became a billion dollar market through which the Federal Reserve implemented its monetary policy began in 1948 with the dealer firm of Garvin, Bantel & Co. We can be even more precise: it began with George K. Garvin and Ralph DePaola. By 1955, the *New York Times* wrote that Garvin “has come to be ‘Mr. Money’ himself—and a legend not alone in the financial district but in every city in the United States where commercial banks are watchful of the New York money market and the opportunities for profit that lie in the market’s day-to-day changes.”⁵ Much of the day-to-day market making was carried out by Ralph DePaola. As the *New York Times* wrote, “[t]he confidence banks had in Mr. DePaola is credited with helping to build the Federal funds market from modest beginnings [...] to a daily volume in the billions of

⁵ Paul Heffernan, “Along the highways and byways of finance,” *New York Times*, December 11, 1955.

dollars.”⁶ DePaola had worked on Wall Street first in a summer job while attending St. Vincent’s College in Latrobe, Pennsylvania, and then in a day job while completing his bachelor’s degree at New York University, in 1952.

The invention of a new money-market instrument by a college student moonlighting on Wall Street seems to approach economists’ ideal of the invention of a better mouse trap. But DePaola did not create the new market by establishing a start-up. He was employed by an established brokerage and could mobilize its existing relationships to the largest securities firms and banks. The key to getting the market going was not to attract many small participants but a few large ones. A federal-funds trader from a large bank remembered the everyday practice as follows:

In the days when fed funds were first traded, the market was [...] a travesty, a joke as far as being a real market. There were six or eight real decision makers in the entire market—a couple of brokers and the guys on the money desks of the top banks. When a top broker walked in on Thursday morning at the start of a new settlement week and said, “Funds are $1\frac{1}{16}-\frac{3}{4}$,” the market pretty much formed up around that. Few people would challenge that view because they knew a lot of banks had given that broker money to buy or sell at her discretion. On Broadway the New York Times drama critic can close a show. In every area you have opinion makers, and the fed funds market was no exception.⁷

The creation of the federal-funds market can be explained by profit-maximization only indirectly because Garvin, Bantel & Co. did not charge a commission. Instead, as its federal-funds brokerage “made Garvin, Bantel a trade byword,”⁸ it used the service to entice banks to carry out other, fee-generating transactions through it (Minsky 1957:175).

The case of Garvin, Bantel & Co. also illustrates the fine line between evading and breaking the law. In 1958, Garvin was suspended for three months from the New York Stock

⁶ Anon., “Ralph DePaola, Broker, 51, Dies,” *New York Times*, June 26, 1974.

⁷ Anonymous market participant cited by Stigum and Crescenzi (2007:502).

⁸ Paul Heffernan, “Along the highways and byways of finance,” *New York Times*, December 11, 1955.

Exchange for market manipulations in government bonds. The chairman of the Exchange announced the sanction from the rostrum above the trading floor, while all trading stopped—an event so rare that the *New York Times* reported it on its front page.⁹ In the summer of 1957, Garvin, Bantel & Co. received much of the blame for a collapse in the prices of government bonds. Investors had sought to participate in a government bond rally by buying with borrowed money, and Garvin, Bantel & Co. had allowed its customers to do so even when they had precious little equity.

In December 1958, NYCH member bank Irving Trust opened a brokerage business in federal funds.¹⁰ It was the first bank to do so, after several securities firms had joined Garvin, Bantel & Co. in making a market in federal funds. Irving's decision was taken individually. Only after the bank's board had made the decision did Irving inform the Clearing House.¹¹ In a telephone call to Clearing House manager Paul R. Fitchen, Irving president George Murphy said that “the existing arrangements for handling Federal Funds transactions were not too satisfactory; that objections have been voiced by correspondents as to the haphazard way in which such an important function was being handled, and that there were now signs of street houses breaking the market into segments.”¹² The Fed had “seemed to approve” of Irving's step when contacted informally beforehand. “Mr. Murphy commented on the size and importance of the Federal

⁹ John S. Tompkins, “Broker suspended; firm fined \$25,000,” *New York Times*, Sept. 20, 1958.

¹⁰ Anon., “Irving Trust to enter federal funds market,” *New York Times*, December 6, 1958.

¹¹ Paul R. Fitchen, “Re: Federal Funds,” December 5, 1958, folder “Dec. 15, 1958,” Clearing House Committee Files (hereafter, CF) 6, New York Clearing House Archive, Rare Book and Manuscript Library, Columbia University.

¹² *ibid.*

Funds market and said it was sure to grow bigger in the future.”¹³ Like Garvin, Bantel & Co., Irving did not charge a fee. Five years later, “[m]any” of Irving’s clients in the federal-funds brokerage “do not otherwise do business with the Irving, although it hopes that contact through the Federal funds desk will lead to more profitable relationships.”¹⁴ The biggest banks, by that time, often dealt directly with each other, instead of going through brokers.¹⁵

Background II: The Shock of Government Debt, 1941–1951

Total Government Control over the Price of Money: The Pegging of Interest Rates, 1941–1951

The management of money changed deeply as a byproduct of the financing of World War II. The sudden and dramatic increase in government debt was as important for the management of money as the New Deal, and maybe even more so (Mehrling 2011:36–37, 46). To finance the war, the U.S. government ran massive deficits and, in addition to raising tax rates, issued huge amounts of government securities. Simultaneously, the Federal Reserve stopped virtually all private entities from borrowing. Hence government securities were effectively the only asset in which savers could invest.

The Treasury sought to keep the interest rates on its borrowing low and hence convinced the Federal Reserve of intervening in the money and capital market by pegging rates, between 0.375 percent for short-term debt and 2.5 percent for long-term debt. This required the Federal Reserve to expand its balance sheet dramatically and to acquire virtually all short-term debt

¹³ *ibid.*

¹⁴ Edward Cowan, “U.S. banks increase trading of the excess reserves,” *New York Times*, Oct. 17, 1963.

¹⁵ H. Erich Heinemann, “Banks weather money squeeze,” *New York Times*, July 24, 1966.

issued by the Treasury. Because long-term government securities could be exchanged into cash just as easily but carried a higher interest rate, private households and firms preferred long-term over short-term securities, i.e., bonds over bills. With the Federal Reserve stabilizing the interest rates on Treasury debt, “government bonds served essentially as a kind of interest-bearing cash” (Mehrling 2011:52). The price of money was hence fully controlled by the state and mattered mainly in relationship to government debt.

During the war, this monetary regime was widely accepted. For populists like Representative Wright Patman, it meant keeping interest rates low and removing the price of money from the control of private bankers (Meltzer 2003:715). For bankers, the conditions were easy to live with, as evidenced by the official history of Citibank: “The bank’s profits during the war were excellent. [...] By stabilizing short- and long-term interest rates, the Federal Reserve assured the bank a good spread while eliminating interest-rate risk on the bank’s investments” (Cleveland and Huertas 1985:215).

The Federal Reserve Torn Between Monetary Stability and Government Financing: The Road to the Accord, 1945–1951

After the end of World War II, the Federal Reserve sought to end the pegging of interest rates. These years were an “extraordinary period” for U.S. finance (Eichengreen and Garber 1991:175): inflation jumped up to 25 percent and then down again, combined with stable financial institutions. This was the outcome of the removal of war-period price controls, the continued pegging of interest rates, and the huge share of government debt among financial institutions’ assets.

The management of money was deeply changed by the so-called Accord between the Treasury and the Federal Reserve, reached in 1951. It ended the pegging of interest rates. Its

emergence is usually told as a clash between the Treasury and the Federal Reserve over inflation. And that is certainly an important part of the story. The Treasury favored a continued pegging of interest rates so that it would not have to pay more interest on its debt. This position was supported by President Truman, who—erroneously—thought that unpegging would lead the many small savers holding war bonds to lose some of their anticipated incoming payments. (They would not, as long as they held the bonds until maturity.) In contrast, the Federal Reserve was concerned about inflation. Already from 1945 on, the Federal Reserve feared that it had lost control over the volume of money (Sproul 1964:228). Board member Marriner Eccles testified before Congress: “As long as the Federal Reserve is required to buy government securities at the will of the market for the purpose of defending a fixed pattern of interest rates established by the Treasury, it must stand ready to create new bank reserves in unlimited amount. This policy makes the entire banking system, through the action of the Federal Reserve System, an engine of inflation.”¹⁶

Under the system of pegged rates, commercial banks could exchange their vast holdings of government securities into money and lend it out to firms and private households, sparking a surge of production and consumption that would destabilize the price of goods and services. In this concern, the Federal Reserve received support from a Congressional inquiry into “Monetary, Credit, and Fiscal Policies,” which was headed by Senator Paul H. Douglas. It concluded: “As a long-run matter, we favor interest rates as low as they can be without inducing inflation, for low interest rates stimulate capital investment. But we believe that the advantages of avoiding inflation are so great and that a restrictive monetary policy can contribute so much to this end

¹⁶ Joint Committee on the Economic Report. 1951. “January 1951 Economic Report of the President: Hearings,” p. 158.

that the freedom of the Federal Reserve to restrict credit and raise interest rates for general stabilization purposes should be restored even if the cost should prove to be a significant increase in service charges on the Federal debt and a greater inconvenience to the Treasury in its sale of securities for new financing and refunding purposes.”¹⁷

When push came to shove, the Federal Reserve chose government financing over monetary stability (Hetzl and Leach 2001b; Moe 2013). In the late 1940s, the Federal Reserve had informed the Treasury that it would no longer support the low interest rates on government securities. Yet the Treasury priced its next securities issue at the old, low rate. The Federal Reserve had to decide: either it would stick to its commitment to monetary stability, which meant not buying the securities at the low rate, letting the sale fail, leading to potentially drastic damage to the credibility of the U.S. government on the bond market; or it could stick to the rate announced by Treasury, accepting inflation. The Federal Reserve chose the latter course of action.

The Treasury and the Federal Reserve reached a consensus only in 1951, after the conflict had escalated further. In an unprecedented event, the President invited all members of the Federal Reserve Board to the White House. Afterwards, the Treasury claimed toward the public that the Federal Reserve officials had acquiesced. Upset by what they perceived to be a misstatement, the Federal Reserve issued its own, contradictory account of the meeting. Only in March 1951 was a consensus reached. In its entirety, the statement to the public read: “Joint announcement by the Secretary of the Treasury and the Chairman of the Board of Governors and of the Federal Open Market Committee of the Federal Reserve System. The Treasury and the

¹⁷ Joint Committee on the Economic Report. Subcommittee on Monetary, Credit, and Fiscal Policies. 1950. “Monetary, Credit and Fiscal Policies: Report,” p. 2.

Federal Reserve System have reached full accord with respect to debt management and monetary policies to be pursued in furthering their common purpose to assure the successful financing of the Government's requirements and, at the same time, to minimize monetization of the public debt" (Sproul 1964:233).

The Accord has since been understood as a "landmark" in monetary policy that achieved the independence of the central bank and established the fight against inflation as its primary objective (Hetzel and Leach 2001b). But this reading is partial in three important ways.

First, the Federal Reserve of the late 1940s and early 1950s had no intention to prioritize the fight against inflation at all times. The same Marriner Eccles who pushed for unpegging rates after the war had been a strong advocate of pegging the rates under war conditions (Moe 2013). Even after World War II, the Federal Reserve did not seek anything like the degree of monetary contraction that orthodox thinking would have required. Only with the sudden and strong increase in aggregate demand in reaction to the beginning of the Korean War in 1950 did the Federal Reserve take a stronger position against inflation. In the words of the president of the Federal Reserve Bank of New York:

Up to the time of the Korean crisis, the Federal Reserve was content to carry on a holding operation. It joined with the Treasury in opposing those who, in the immediate postwar years, counseled abrupt and vigorous use of credit policy to reduce the swollen money supply, inherited from the war, and to wring excess liquidity out of the economy. Rather, it took the position that the economy would have to grow up to the money supply (which it rapidly did) and that, meanwhile, release of inflationary pressures suppressed by direct control during the war period would be partially offset by increases in the national product (as they were). In the face of the economic repercussions of the Korean crisis, however, such an approach was no longer practical. (Sproul 1964:234)

Second, the conventional account of the change in monetary management in 1951, by focusing almost exclusively on the Treasury and the Federal Reserve, overlooks the role of the commercial banks which, together with the Federal Reserve, controlled money. The role of the banks is important even though—or particularly because—they remained passive for the most

part. The president of the Federal Reserve Bank of New York later summarized it this way: “Bankers, insofar as they expressed themselves, were reluctant to take sides” (Sproul 1964:229). Federal Reserve Board chairman Eccles was disappointed by the lack of support that he received from the major commercial banks at meetings of the Federal Advisory Council (Hetzel and Leach 2001b:49). At the hearings of the Douglas committee, the only New York banker to speak was W. Randolph Burgess, chairman of the executive committee of National City Bank.¹⁸ He supported the Federal Reserve’s position on unpegging interest rates, but he was predisposed to that position, having worked at the Federal Reserve Bank of New York for 19 years, including as vice president, before joining National City Bank. The dozens of bankers from across the country whose replies to a questionnaire were summarized in a Committee volume took a wide variety of positions on the issue.¹⁹

The commercial banks were still holding a significant part of their assets in government securities. By late 1948, government securities accounted for 56 percent of National City Bank’s domestic assets, and still for around 50 percent in 1950 (Cleveland and Huertas 1985:218, 228–29). Such a position was typical for the major banks at the time (Simmons 1951:417). An unpegging of interest rates—which would have meant the Federal Reserve pushing interest rates up to counter inflationary pressure—would have decreased the prices of these assets and hence would have meant losses to the banks (Humpage 2016). Under these conditions, the banks preferred to slowly sell government securities and invest the proceeds in loans. National City Bank of New York “expand[ed] loans to corporations and individuals and fund[ed] them by

¹⁸ Joint Committee on the Economic Report. Subcommittee on Monetary, Credit, and Fiscal Policies. 1950. “Monetary, Credit and Fiscal Policies: Hearings,” pp. 178–201.

¹⁹ Joint Committee on the Economic Report. Subcommittee on Monetary, Credit, and Fiscal Policies. 1949. “Monetary, Credit and Fiscal Policies: A Collection of Statements.”

reducing its holdings of government securities. From June 1945 to June 1948 the bank's commercial and industrial loans more than doubled" (Cleveland and Huertas 1985:217).

Finally, the public's focus on the interest rate of government securities deflected attention from the more fundamental—and striking—fact that the Federal Reserve took for granted that government securities would be the major conduit of its monetary policy. Observers who could remember the status quo ante registered as a stark difference. At its founding, the Federal Reserve intended to deal almost exclusively in so-called real bills, i.e., short-term commercial loans. Under the real-bills doctrine, these instruments were assumed to pose the least inflationary risk because they were said to be self-liquidating: the borrowers would use the funds in a way that was sure to produce payments (Mehrling 2011:44). Only the Glass-Steagall Act of 1932 allowed the Federal Reserve to hold government debt in any significant amount (Eichengreen and Garber 1991:178). Already with anticipated war financing, government securities assumed primary importance for the Federal Reserve. From spring 1938 on, the idea that monetary policy depended on "orderly conditions in the government securities market" and that the Federal Reserve should work toward such conditions became commonplace among the members of the FOMC (Eichengreen and Garber 1991:179–80; see also Simmons 1954:32). Over the following years, there emerged a "new money market machinery derived from the heavy deficit finance of World War II" (Simmons 1954:37). After the war, this form of implementing monetary policy remained in place. Six years into the postwar period, an economist stated: "It is only a moderate overstatement to say that the money market is now no more than a sub-part of the government securities market" (Simmons 1951:413).

Turning Government Debt into Money: Repurchase Agreements

The Rise of Government Securities Dealers

Because of the vast amount of government debt after World War II, and reinforced by the Accord, the management of money was increasingly shaped by government securities dealers. As government securities were traded not on exchanges but over the counter, this “distinct group of [...] dealers, represented at the present time by about a dozen firms” (Simmons 1951:413), played an important role in their trading. Some of these so-called government securities dealers were brokerage firms dealing only in government securities, others were brokerage firms that dealt with other securities as well but had a focus on government securities, and finally a few commercial banks had large units dealing in government bonds.

The Federal Reserve sought to shape the market for government securities. In the months after the Accord, the officials of the Federal Reserve Board held meetings with each of the government securities dealers. Board Governors and the presidents of the regional Federal Reserve Banks were invited to these meetings. The main goal was, in the words of a senior Fed official, “to ascertain the dealers’ ability to support a free market in government securities” (Hetzel and Leach 2001a:58). The word “free” here, however, cannot be understood in its usual sense. The Federal Reserve wanted the government to possess “depth, breadth, and resilience” (Hetzel and Leach 2001a:60). These were somewhat vague words, but they often implied that spreads between bid and asks prices were low, and that government securities dealers would always buy from bond holders willing to sell, and sell to counterparties willing to buy (Hetzel and Leach 2001a; Simmons 1954).

During World War II, the Federal Reserve had instigated the firms to form the Government Security Dealer Group, “a voluntary association of dealers [...] willing to act under

the [Federal Reserve] Bank's tutelage" (Garbade and Keane 2017:33). This group set standards on market practice, for example, on how to calculate accrued interest. It fell into disuse in the late 1940s, but another form of market boundary-making continued to exist. From 1939 on, the Federal Reserve traded in government securities only with "recognized" dealers, and in 1944 developed a new list of "qualified" dealers; similar limitations today continue in the designation of "primary" dealers (Garbade 2016b). Under such conditions, the Federal Reserve "can conduct its operations quite informally within this small circle" (Simmons 1954:35).

The securities dealers were "the dominant intermediary agents in the money market" (Simmons 1951:418). When the Federal Reserve sought to increase or decrease the price of money, it bought or sold government bonds in transactions with these firms. The government securities dealers hence were "[t]he fulcrum" of monetary policy after World War II (Simmons 1951:417). Distinct from forms of monetary policy in which the central bank interacts almost exclusively with banks, under the American post-war regime "the money market and the securities markets have [...] been completely intertwined" (Mehrling 2011:42, see also 47).

Government Securities Dealers and Corporate Treasurers Create the Repurchase Agreement

In addition to being a conduit for monetary policy, the government securities dealers also created a new form of money. This creation emerged as an unintended consequence, and it is hence necessary to start with that earlier position. While interest rates were fixed, the government securities dealers had limited profit opportunities because the maximum interest rate they could earn was low, but they also had no risk, because they could fund themselves in an even cheaper way. "[D]uring the easy money days, government bond houses financed their position by borrowing at the giant commercial banks, and the interest rate structure was such that they made money on the carry" (Minsky 1957:178). An economist surveying the market around

the time of the Accord found that government securities dealers' borrowings from commercial banks "are sizeable, varying in the aggregate from about \$200 million to almost \$1,000 million. A small number of banks, probably not over ten, provide the bulk of these loans. Like brokers loans, they are made on a call basis by means of new loan rate and a renewal rate. These rates have not been reported regularly, but they are known to move quite freely. On a given day rates differ from bank to bank. There is no central fixing of the rate" (Simmons 1951:413).

Government securities dealers searched for more plentiful and cheaper funding than was provided through loans from commercial banks. They succeeded in tapping nonfinancial firms as such a source of funding. In doing so, they created the repurchase agreement. Its specific creators are shrouded in mystery. Even the financial journalist Marcia Stigum, who was more knowledgeable about the money markets than probably any other observer and who, in the 1970s and 1980s, could still interview many participants from the 1940s and 1950s, had to resort to a "parable" (Stigum 1989:108) instead of an origin story for the repo market: "One bright day back in the early 1950s, the General Motors portfolio manager said to Discount Corporation, a respected primary dealer: "We've got Y million of cash that we want to invest to a specific date. The money is earmarked for paying our next quarterly dividend, so we don't want market risk. No maturing bill issue fits our date, and we can't do a collateralized loan. What do you suggest?" [...] GM did do the trade with Discount, and together they set an example of creative dealer financing and corporate investing. [...] Even if GM and Discount were not the first entities to do in the 1950s a [...] repo, the above story bears telling" (Stigum 1989:107–8).

Nonfinancial firms such as General Electric had tremendous amounts of cash on hand so that they could pay receipts, payroll, dividends, etc. The unit responsible for this cash management was called the corporate treasury. If corporate treasurers left their funds in

demand deposits at commercial banks, they did not earn interest. Corporate treasurers did not mind during World War II and in the late 1940s, when government bills were the only viable alternative and the Federal Reserve, under the pegged system, kept the interest rates on them low (Minsky 1957:178–79). But as short-term interest rates rose quickly from the Accord on, corporate treasurers sought to earn interest on their funds. Initially, they moved into government bills. These moves were made largely individually by corporate treasurers who did not possess an association at the time (Billings 2007).²⁰

The government securities dealers offered corporate treasurers a new way to hold their funds: repurchase agreements. They consisted of two steps that were agreed at once but carried out sequentially. In the first step, the nonfinancial firm bought a government bill from the government securities dealers. Money (in the form of a deposit at a commercial bank or at the Federal Reserve) moved from the nonfinancial firm to the government securities dealer. In the second step, the government securities dealer bought the government security back from the nonfinancial firm, at a price higher than the one that had obtained during the first transaction. Money (in the form of a deposit at a commercial bank or at the Federal Reserve) moved from the government securities dealer to the nonfinancial firm. It is conventional—and correct—to say that this transaction was the economic equivalent of a collateralized loan. But this was not all the transaction was.

The nonfinancial firms understood their repos with government securities dealers not as credit but as money. Repos are entered in the accounting books of nonfinancial firms as “cash equivalents” (Ricks 2016:37–38). The transactions were so short-term and deemed so safe that

²⁰ See also the observation by Chrysler’s treasurer Walter J. Simons at a 1963 panel of the Robert Morris Associates, printed in the association’s monthly bulletin of December 1963, pp. 147–168, here p. 151.

the treasurers treated them as functionally equivalent to federal funds or deposits at commercial banks. Over a few years, the corporate treasurers had replaced deposits in commercial banks with government bills, and government bills with repos. This “pyramiding of liquid assets” (Minsky 1957:184) increased the amount of money in the economy.

As an unintended consequence of their attempt to fund themselves cheaper, the government securities dealers created a new form of money. Neither the government securities dealers nor the Federal Reserve regularly computed the aggregate amount of this new form of money. Government regulators could, if they so choose, see the repos if the government securities dealer was also dealing in other securities or if was part of a commercial bank. If the government securities dealer was a firm dealing only in government securities, there was no regulation at all.

The Federal Reserve Embraces Repurchase Agreements

By the late 1950s, the Federal Reserve viewed the government securities dealers as “a critical part of the money market mechanism centering in New York.”²¹ In a letter to bankers, Federal Reserve Bank of New York president Allan Sproul stressed the role of the government securities dealers in realizing “the interest of the central banking system, which should try to encourage the development of a money market that will not only meet the day-to-day clearing needs of the country, but will also have such close and strong links with the financial institutions

²¹ Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

of the rest of the country as to assure reasonably prompt reflection, across the country, of central bank action taken in the money center.”²²

The Federal Reserve sought to ensure the “adequate financing of Government security dealers.”²³ To this end, the Federal Reserve encouraged the large banks to lend to government securities dealers, and refrained from regulating government securities dealers’ issuing of repos. Two years earlier, the Federal Reserve Bank had already set out this view in a letter to the head of a major government securities dealer, with copies going to the heads of two large commercial banks.

One of the weaknesses of the New York money market, as it appears to us, is the tendency of the large New York City banks to keep closely invested (or over-invested) and, therefore, to be most sensitive and most resistant to pressures on their reserve positions. Under such conditions they appear to be reluctant to make Federal funds available to dealers except at the quoted rates plus the charge for interest on loans. This leads the dealers to look for financing elsewhere and, at times, tends to “freeze up” the bill market when bill rates decline substantially below other short term rates. Under such conditions the dealers often find it necessary or advantageous to finance their bill holdings with lenders away from New York, under repurchase agreements [...] at rates below the Federal Reserve repurchase rate but above the bill rate. These arrangements are frequently made for a term of days, as the lenders prefer this to buying bills at the lower rate. A potential source of demand for bills is thus blocked off and, temporarily, dealers are virtually locked into some of their bill holdings. If New York banks were willing to lend in Federal funds at competitive rates, there would not be the same risk of such a freeze.²⁴

The thinking of the Federal Reserve Bank of New York, then, began with the market for short-term government debt, so-called bills, which was the main infrastructure through which the central bank carried out its monetary policy since it had adopted the bills only policy. It was unacceptable, from that perspective, for the government bill market to freeze up because under that condition the central bank could not carry out monetary policy. The first lever in a long chain of levers became stuck when the government securities dealers could not refinance

²² Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

²³ Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

²⁴ Allan Sproul to James Coggeshall, September 3, 1954, folder “April 16, 1956,” CF 6.

themselves, and so an easier way was needed for the government securities dealers to borrow. Hence the Federal Reserve Bank of New York sought to better understand and to change the financing of government securities dealers as part of its attempt “to develop a better, broader market in Government securities.”²⁵

The Federal Reserve Bank of New York took this question seriously and felt it necessary to draw on the expertise of market participants. Between 1954 and 1956 alone, Sproul wrote, “there have been new developments, and new problems have arisen.”²⁶ According to Sproul, “we do not think that [the Federal Reserve Bank of New York] should attempt to provide the answers. That would seem to be the task of the clearing house banks, perhaps in association with other financial institutions and particularly the Government security dealers.”²⁷ In April 1956, Sproul requested in a letter to NYCH president Sloan Colt that the NYCH undertake a study of the money market. Sproul posed “questions that reach into the details of market procedures and they necessarily focus on technical matters. Yet they are important policy questions, also, since they help to determine whether or not the New York money market is doing the best possible job as a national money center.”²⁸ Officials from the Federal Reserve Bank of New York met with the NYCH committee for almost two hours. The meeting included the President of the Federal Reserve Bank of New York and the Manager of the System Open Market Account, i.e., the person responsible for the day-to-day implementation of monetary policy.²⁹

²⁵ Allan Sproul to James Coggeshall, September 3, 1954, folder “April 16, 1956,” CF 6.

²⁶ Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

²⁷ Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

²⁸ Allan Sproul to Sloan Colt, April 6, 1956, folder “April 16, 1956,” CF 6.

²⁹ Howard Sheperd to Alfred Hayes, Nov. 4, 1957, folder “November 18, 1957,” CF 6; Alan Temple et al. to Sloan Colt, May 15, 1957, folder “May 15, 1957,” CF 6.

Attempts by Commercial Banks to Conserve the Old System of Money Management

The Commercial Banks Overcome Their Ignorance of the Repurchase Agreement Market

For almost a decade after the emergence of new money markets, the major commercial banks had not developed a collective position on the changes to the money system. This changed with the request from the Federal Reserve Bank of New York. The resulting study, conducted by the NYCH in 1956 and 1957, provides a remarkable window into how the major New York commercial banks developed a position toward the emerging money market a. This “Study of the Interrelations of the Money Market and Government Securities Market” was kept highly confidential at the time but is now available, together with some of the preparatory materials, in the NYCH archive. With this study, the Clearing House undertook, in its own words, “its first serious, organized study in many years of the shape and structure of the money market.”³⁰

Once prodded, the NYCH took the study seriously. The committee consisted of senior executives from member banks. They engaged in, as the committee chairman called it, “lengthy exploration and consultation.”³¹ The members felt that “the job should not be rushed at the expense of thoroughness.”³² The committee chairman said that “[g]eneral comment on the subject of the study, going beyond the answers to the specific questions, is invited.”³³ The members of the committee came together on twenty occasions, between June 1956 and May 1957. Their deliberations drew on a questionnaire from the Federal Reserve Bank of New York

³⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 43, Studies and Reports (SR) 2, New York Clearing House Archive, Rare Book and Manuscript Library, Columbia University.

³¹ Alan Temple et al. to Sloan Coalt, May 15, 1957, folder “May 15, 1957,” CF 6.

³² Minutes of Temple special committee meeting, June 7, 1956, folder “June 18, 1956,” CF 6.

³³ Minutes of Temple special committee meeting, June 7, 1956, folder “June 18, 1956,” CF 6.

that each member of the committee would fill out. The committee members decided to “discuss the questionnaires with others in their respective institutions, so that the views expressed will be institutional in character.”³⁴ The report of the committee was discussed and endorsed by the Clearing House Committee, which consisted of the heads of member banks.³⁵

The commercial bankers on the committee realized over the course of their study how little they knew about some parts of the money market. “Government security dealing is a highly specialized occupation with its own technicalities and jargon which few people—even in Wall Street—fully understand.”³⁶ At the first meeting of the committee, the bankers in the room were of the opinion that their own expertise was not sufficient to carry out the study, but that they had to draw on the expertise of government securities dealers. Bankers suggested to reach out to government securities dealers with whom they did business. To avoid upsetting the dealers with multiple similar requests, it was decided to arrange for meetings of the full committee with dealers.³⁷ Over the course of the study, five such meetings took place.³⁸ At the end of the process, the committee had arrived at the conclusion that “even the financial community has been ignorant” of important developments in the money market around government securities dealers.³⁹

³⁴ Minutes of Temple special committee meeting, June 7, 1956, folder “June 18, 1956,” CF 6.

³⁵ Minutes, May 15, 1957, p. 124, Committee Minutes (hereafter, CM) vol. 12, New York Clearing House Archive, Rare Book and Manuscript Library, Columbia University.

³⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 1, SR 2.

³⁷ Minutes of Temple special committee meeting, June 7, 1956, folder “June 18, 1956,” CF 6.

³⁸ Alan Temple et al. to Sloan Coalt, May 15, 1957, folder “May 15, 1957,” CF 6.

³⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 28, SR 2.

It is not possible to reconstruct how the committee arrived at its quantitative estimate, but through conversations with government securities dealers (which were big clients) and possibly through inspection of government securities dealers' transactions, which went through the books of the commercial banks, the NYCH members were in a better position than any other actor in the financial system to carry out an estimate. "For competitive reasons, the dealers are traditionally chary of disclosing their operations; but, while no one knows the full extent of the business, this committee estimates that dealer borrowings from corporations under repurchase agreements recently have been running around \$500 million and sometimes more."⁴⁰

Commercial Banks Want More of a Market in Government Debt

On the fundamental question of the link between the money market and the government securities market, the commercial bankers arrived at a position very different from that of the Federal Reserve Bank of New York. "Admittedly the Government securities market has, at times, been a 'thin' market and has not displayed as much 'depth, breadth and resiliency' as sellers, or the Treasury, might have desired. But these conditions reflect underlying economic and financial conditions rather than practices involved in financing nonbank dealers in Government securities."⁴¹ The Clearing House called for the market in government securities to become a "free" market not in the sense used by the Treasury and the Federal Reserve, but in the sense used by orthodox economists.

⁴⁰ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 32, SR 2.

⁴¹ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 11, SR 2.

The commercial bankers did not accept the Fed's view that an orderly market was necessary for the implementation of monetary policy, but claimed that such a market was also in the interest of the government securities dealers (who wanted to find counterparties providing ready money when the dealers wanted to sell securities) and the Treasury (which could borrow the more cheaply the more liquid the market and hence the more willing counterparties were willing to part with money because they could expect to easily get money again when they sold their government securities). The study put it this way: "Dealers would be less than human if they did not look back nostalgically to the bountiful days of pegged interest rate patterns and guaranteed profits on carries. The idea is tempting that dealing in Government securities is peculiarly vital, warranting special privileges and insulation from the fluctuations in the cost and availability of credit visited upon the essential commerce and industry of the nation. But this is a throwback to conceptions entertained under the pegs and discarded after the Douglas inquiry of 1949."⁴²

The bankers did not want too much elasticity extended to nonbanks. "It is neither necessary nor desirable that dealers in U. S. Government securities be spared negative carries. [...] The negative carry is one technical manifestation of an effective policy of credit restraint, as is difficulty in finding dealers willing to take Government securities into inventory. [...] Availability of credit—not cost—is the critical factor in the performance of the basic function."⁴³ The commercial banks argued that the Fed was wrong to assume that the implementation of monetary policy depended on a market that was always liquid at rates that were to the liking of

⁴² "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 12, SR 2.

⁴³ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, pp. 10–11, SR 2.

the government securities dealers. “If, in periods when money has been tight, U.S. bonds have been hard to sell in volume, this is just another way of saying that money has been hard to raise. If bonds were always salable in volume, money would never be tight.”⁴⁴ Thus the NYCH report turned the problem posed by the Federal Reserve on its head. “The funds available to dealers for financing inventory [...] might indeed, from some standpoints, be regarded as excessive rather than deficient.”⁴⁵

Commercial Banks Claim That Repurchase Agreements Are Too Much Like Money

But mostly, the commercial bankers disagreed even more with the Federal Reserve Bank of New York because they focused not on the market in government bills but on the repurchase market. The emergence of that market, the NYCH committee held, was deeply transforming the relationship between the central bank, commercial banks, and government securities dealers; and changed the character of money. While the Federal Reserve Bank of New York had cast the government securities dealers as weak and requiring help, the NYCH cast them as strong and posing a threat to the financial system.

The report traced the growth of the repo market to a situation of rising interest rates that made the old way of financing less appealing—but not impossible—to government securities dealers. “The normal source of credit is the collateral loan placed with a major money market bank.”⁴⁶ These loans were made “under blanket loan agreements,” so that a government security

⁴⁴ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 29, SR 2.

⁴⁵ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 23, SR 2.

⁴⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 6, SR 2.

dealer could trust in the availability of credit from its main commercial bank.⁴⁷ Under conditions of easy money, the government securities dealers could borrow from a commercial bank, invest the money in long-term government bonds, and make a profit.

As interest rates increased and the yield curve flattened in the 1950s, this profit opportunity shrank. The new interest rate environment “has given dealers little if any margin for profitable carries against loans from the major banks.”⁴⁸ The government securities dealers searched for an opportunity to borrow more cheaply. They found it in “repurchase agreements with a corporation or out-of-town bank.”⁴⁹ The interest rates that government securities dealers had to pay on those repos “will stop well short of the rate charged by the major money market banks on collateral loans.”⁵⁰

The rise of repo used by government securities dealers delivered, in the opinion of the NYCH, a “devastating blow to the interest of major money market banks.”⁵¹ Government securities dealers “are looming ever larger as direct competitors for funds.”⁵² From this point of view, it appeared as cynical that the Federal Reserve Bank of New York asked the commercial banks to extend credit more willingly to government securities dealers.

⁴⁷ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 6, SR 2.

⁴⁸ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 9, SR 2.

⁴⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 9, SR 2.

⁵⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 10, SR 2.

⁵¹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 31, SR 2.

⁵² “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 18, SR 2.

While the commercial bankers did not try to hide their self-interested motives in reacting to this trend, they mainly cast it in terms of considerations touching on the architecture and stability of the entire financial system. What matters for my argument is not how sincere these arguments were, but that they could be made and how they were made. In particular, the commercial bankers used the changes in the practice of the money market—which they only came to reflect upon as they carried out the study—to call for the state to force innovators back into the old financial regime.

The commercial banks presented themselves as adhering not only to the letter but also to the spirit of the New Deal regime. “The major money market banks [...] have been reluctant to negotiate RP’s with either dealers or corporations. Such transactions could be interpreted as evasions of the prohibition of interest payments on demand deposits and regulations limiting interest payments on time deposits.”⁵³ As corporate treasurers and the money desks of banks outside New York were looking for interest on their idle funds in a time of rising interest rates, the government securities dealers took advantage of the commercial banks’ adherence to the law by attracting that money. “These are funds that normally would be left on deposit with major money market banks or invested in U.S. Treasury bills or certificates. In some instances the initiative comes from the corporation or out-of-town bank which in effect is seeking an interest return on demand deposits which it would be unlawful for a bank to grant.”⁵⁴

The NYCH saw the responsibility for this development not only and not even mainly with the corporations and out of town banks willing to lend, but with the government securities

⁵³ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 10, SR 2.

⁵⁴ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 9, SR 2.

dealers willing to borrow. “Borrowers, attempting to circumvent restrictions on the availability of bank credit, are probing out, finding and exploiting the weak points in the reform legislation of 1933–35. Evidences of debt which serve as reasonable facsimiles of cash are being issued in increased amounts; attracted by offers of interest, corporate reserve funds are drawn into circulation.”⁵⁵ In this way, “[t]he repurchase agreement represents the exploitation of loopholes through the Banking Acts of 1933 and 1935.”⁵⁶ The repos “represent in substance a nullification of the intent of the Banking Act of 1933 to wipe out the volatile element of security loans for the account of others, to forbid banking activities outside the supervised banking system, and to exclude payment of interest on demand deposits.”⁵⁷ In other words, the report described a “shift of the dealer into a role of unlicensed and unregulated private banker.”⁵⁸ In 21st century terminology, one can say that the NYCH accused the government securities dealers of becoming shadow banks. The report did not yet employ the term but used scare quotes instead: “The trends in the market are running in the direction of making ‘bankers’ of the dealers”⁵⁹

This was a violent attack on government securities dealers, and the NYCH even extended its criticism to include the Federal Reserve. The ability of the government securities dealers to introduce repos on a large scale, they claimed, depended on “the acquiescence of the Federal

⁵⁵ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 27, SR 2.

⁵⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 32, SR 2.

⁵⁷ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 17, SR 2.

⁵⁸ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 40, SR 2.

⁵⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 19, SR 2.

Reserve Bank.”⁶⁰ The NYCH accused the Federal Reserve of having abetted the process through conducting repos with government securities dealers. “The Federal Reserve Bank itself has been using purchases of Government securities under repurchase agreement with increasing frequency during periods of relatively tight money. [...] Such terms cannot reasonably be matched by the money market banks in periods of pressure on their reserve positions, and it is natural that dealers test out availability of borrowings from the Federal Reserve Bank before going to the money market banks.”⁶¹

In the view of the NYCH, that the Federal Reserve provided liquidity to government securities dealers helped along the growth of the repo market. Among the government securities dealers’ counterparties, “[t]here is a tendency to regard the dealer’s credit position as beyond criticism since it is known or assumed that he has substantial credit at the Federal Reserve Bank.”⁶²

The NYCH hinted at a possible legal challenge against the Federal Reserve. “It may be noted incidentally that the Federal Reserve’s repurchase agreements have no express legal sanction.”⁶³ It was indeed not a wide stretch for the NYCH to argue that “[a] continuing trend

⁶⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 9, SR 2.

⁶¹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 16, SR 2.

⁶² “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 9, SR 2.

⁶³ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 37, SR 2.

toward Federal Reserve lending to dealers under repurchase agreements [...] should not be pursued without specific Congressional sanction.”⁶⁴

The NYCH criticized repos for disrupting not only the banking system but also the money system. “Government security dealers have blossomed forth as financial intermediaries creating the closest possible approximation to cash.”⁶⁵ “Corporations consider Government securities acquired from dealers under repurchase agreement as the equivalent of cash or bank deposits. Dealers may thus be said to have assumed a function of money creation or ‘coining’ Government securities.”⁶⁶ The committee unpacked how the perception among various actors had departed from the legal definition of money. “Many borrowers are creating more or less liquid assets for large corporations to hold in lieu of demand deposits with their banks: the U.S. Treasury with Treasury bills; sales finance companies with open market paper. This is not to mention the creation of money equivalents for individuals by savings and loan associations, mutual savings banks, and credit unions. People quite commonly consider money placed with such associations as quickly available ‘in the bank.’”⁶⁷ The NYCH claimed that the legal protections and limitations around money were being circumvented: “The creation of credit is no monopoly of commercial banks. Anyone can receive deposits who earns the trust of the community that he will repay on demand. [...] That [...] corporations think of their repurchase

⁶⁴ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 16, SR 2.

⁶⁵ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 28, SR 2.

⁶⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 19, SR 2.

⁶⁷ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 28, SR 2.

agreements with dealers as available cash, give[s] warning that the man in the street does not recognize fine legalistic distinctions or draw the line on ‘money supply’ where statisticians want him to.’⁶⁸

What irked the NYCH especially about repos was that they were so close to money in that payment for them was made in federal funds. Traditionally, payment had been made through a check drawn on a commercial bank, which was exchanged through the Clearing House. But to speed up the process, repo practice had changed to payment in federal funds. The government securities dealers did not have accounts with the Fed, but they were important customers of commercial banks, who carried out these transactions in federal funds for them. The work on the study brought the commercial banks as a collective to realize that trend and to denouncing it. “It is only recently that conceptions and practices have arisen of considering Federal funds—as opposed to clearing house funds—as appropriate for use by dealers and corporations in financial settlements. There is a need to get back to first principles if the machinery of monetary policy is to remain manageable.”⁶⁹

What let the commercial banks speak in such dramatic terms was that the practice of settling the repos of government securities dealers in federal funds further blurred the line between money and non-money. Effectively, “[n]onbank dealers participate in the Federal funds market, which otherwise is a market among banks.”⁷⁰ This trend was seen by the NYCH as “deeply disturbing. Along with the growing practice of Federal Reserve lending to dealers, it

⁶⁸ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, pp. 32–33, SR 2.

⁶⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 24, SR 2.

⁷⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 5, SR 2.

violates the concept that the Federal Reserve Banks should be bankers' banks, and clear transactions for the banks rather than for the public; that Federal funds are member bank currency controllable by the bank rather than by the customer."⁷¹ In the view of the NYCH (and the New Deal legislation), every institution that was not the central bank or a commercial bank should have to pay either in coin, Federal Reserve notes, or in checks drawn on commercial banks. Payment in federal funds, i.e., a check drawn on the Federal Reserve, should be limited to the Federal Reserve and commercial banks. The study criticized that "[d]ealer and corporate settlements in Federal funds [...] are spreading the use outside the banking system of checks drawn on the Federal Reserve Bank as a third form of currency in financial settlements."⁷²

Taken together, the challenges to the system of banking and money were profound, from the perspective of the Clearing House. "It is impossible to anticipate where, unchecked, these drifts will end. [...] Will we have emerge 'repurchase houses' as unlicensed and unregulated financial intermediaries, serving individuals as well as others, in defiance perhaps of margin requirements as well as restrictions on interest payments, and—ironically—using checks drawn on the Federal Reserve Bank (Federal funds) as their currency?"⁷³ It was in the case of government securities dealers and repo's that the full ire of the commercial banks was brought out because the challenge to the old system was most acute here, and not with, for example, mutual savings banks offering products that resembled callable deposits. "In the whole gamut of

⁷¹ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 20, SR 2.

⁷² "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 19, SR 2.

⁷³ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 32, SR 2.

liquid assets created by financial intermediaries, none approximates cash more closely than the repurchase agreement renewed from day-to-day or running at the option of the buyer.”⁷⁴

Predicting Crisis in the New Money Market

The new system was described by the Clearing House as highly susceptible to crisis. “It is perilous to assume that, since the banks are sound, we are free from risk of financial crisis. Comparatively little public attention has been given to the hazards of new financial practices cropping up outside the regulated banks.”⁷⁵ The report argued that, to judge the potential of a crisis, one should not use legal but pragmatic definitions. There could not only be a bank run, there could also be a nonbank run. “The creation of credit is no monopoly of commercial banks. Anyone can receive deposits who earns the trust of the community that he will repay on demand. Conventional monetary theory overlooks this simple fact and the possibility that overextended nonbank bankers—financial intermediaries—can precipitate financial crisis and liquidation.”⁷⁶ The threat was all the more severe because almost three decades without a deposit loss has made depositors complacent, to the point where they extended their expectations of safety to institutions that were not FDIC-insured. “[S]ome corporation treasurers are wont to [disregard] the possibility that the dealer may default on his repurchase contract.”⁷⁷

⁷⁴ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 34, SR 2.

⁷⁵ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, pp. 28–29, SR 2.

⁷⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, pp. 32–33, SR 2.

⁷⁷ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 33, SR 2.

Government securities dealers were, in the opinion of the NYCH, eminently runnable. “Dealers trade on thin margins and are heavy users of credit.”⁷⁸ The major commercial banks could be trusted, in the implicit opinion of the NYCH study, to leave their funds with the government securities dealers in hard times, but the government securities dealers’ repo counterparties could not. There was now a dangerous “relationship of repurchase agreements undertaken to the comparatively modest capital funds possessed by the dealers entering into the contracts.”⁷⁹ Should a sizable number of repo counterparties withdraw their funds, the government securities dealers would be forced to sell their inventories at fire-sale prices. This would freeze the market for government securities (and hence make the implementation of monetary policy difficult to impossible for the Fed). This hypothetical scenario, the NYCH argued, “imposes on the Federal Reserve a potential burden of bailing out the dealers [...] There is no reality in any assumption that money market banks have resources—except releases from required reserves or the discount window—to absorb the shock.”⁸⁰ From the perspective of the NYCH, the trend toward new forms of money outside the banking system had to be stopped. “The line of least resistance is to let matters drift until they mature in panicky liquidation. The answer to the problem of sustaining prosperity is to exercise discipline in public and private policy.”⁸¹

⁷⁸ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 6, SR 2.

⁷⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 28, SR 2.

⁸⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 23, SR 2.

⁸¹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, pp. 28–29, SR 2.

This delineation of the failure mechanisms of the new money markets was rare at the time. Most economists ignored the market for repos. With no central market place and no regulator providing data, the market was difficult to observe. One of the few observers to identify the repos as important was Hyman Minsky, an economist who received a fellowship from a trade association of securities dealers to come to Wall Street, where he interviewed market participants. Minsky pointed out that the new type of money created a new type of crisis potential (Minsky 1957:180–81; see also Kane 1979:172–73). The repos of government securities dealers effectively served as money issued by a non-backstopped financial intermediary similar to the way that the private bank notes of commercial banks in the Free Banking Era and the deposits of commercial banks in the National Banking Era had done. In the world of repo, “insolvency or even temporary illiquidity of a key nonbank organization can have a chain reaction and affect the solvency or liquidity of many organizations” (Minsky 1957:184). To avoid this risk, there needed to be a source of elasticity for the government securities dealers, Minsky (1957:181) argued. The commercial banks had initially served as lenders of last resort for the government securities dealers but their ability to do so became stretched as government securities dealers increasingly borrowed funds above and beyond their debt to the commercial banks (Minsky 1957:178, 180).

How would the Federal Reserve respond to a crisis at government securities dealer? Would it treat the repos as money and seek to prop up their value by extending liquidity to the government securities dealers? The Federal Reserve engaged in repos with government securities dealers from January 1948 on. This, however, initially was not intended to provide crisis support to the government securities dealers but only as a way to implement monetary policy that was, under certain conditions, logistically preferred to the outright buying of government securities

(Garbade 2016a). These transactions were initiated by the Federal Reserve, not by government securities dealers. They were shrouded in secrecy. The economist Simmons could only write in 1951 that “[t]here is some evidence that dealers engage in repurchase transactions with the Federal Reserve Bank, but personal inquiries on this point have not served to bring out the character of these repurchase arrangements” (Simmons 1951:414n9). When government securities dealers experienced a liquidity crisis in 1956, the Federal Reserve provided funds to them through repos, but this one-time event was not enough to convince counterparties that the government securities dealers would be provided with sufficient liquidity in future crises. There remained, Minsky (1957) warned, a “risk due to lack of a guarantee that the bond houses can replace [repos] by tapping the Federal Reserve” (p. 177 n. 3).

Commercial Banks Call for a Return to the Old System of Money

The NYCH called on the Federal Reserve to re-instate a clear line between what was money and what was not. The commercial banks claimed that repos and treasury bills “are the closest things to cash but they are *not* cash—when they must be sold it should be obvious that some sacrifice may have to be made.”⁸²

After such a restoration of money and banking, only the Federal Reserve and the commercial banks would be allowed to issue money. The major New York commercial banks would share responsibility for the running of the system. In the words of the report, the NYCH members had a “role as central bankers to nonmember banks and nonbank financial

⁸² “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 45, SR 2, emphasis in the original.

institutions.”⁸³ The NYCH “recognizes that the money market banks have a natural function of assisting in the process of dealer financing. The most essential responsibility is to keep the market fluid, providing funds to finance primary underwritings and the day-to-day clearance operations of the dealers.”⁸⁴ The report sought to show that this was not cheap talking by stressing that “[a]t times, as in periods of major Treasury financing, dealer banks have accommodated nonbank dealers at considerable inconvenience to themselves.”⁸⁵

For the NYCH to play this role as a private central bank, however, it needed to rest assured that its position close to the apex of the financial system, below only the Federal Reserve and clearly above every other financial institution, was secure. “[T]he availability to and exploitation by the dealers of other credit sources—through the device of sales of Government securities under repurchase agreement” had “[w]eaken[ed] the dependence of nonbank dealers on the banks, and reduc[ed] the sense of responsibility of the banks for dealer financing.”⁸⁶ The major commercial banks were willing to take over responsibility, but only if they were granted power.

The major commercial banks also demanded backstopping by the Federal Reserve if they were to assume again the position similar to a private central bank: “If banks were to hold open lines of credit to dealers at a rate directly related to the discount rate it would be necessary for

⁸³ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 31, SR 2.

⁸⁴ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 30, SR 2.

⁸⁵ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 25, SR 2.

⁸⁶ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 16, SR 2.

banks to rely in turn on the Federal for additional credit to implement such commitments. [...] Uncertain ties as to the availability of the discount window [...] are the prime reasons for any undesirable inflexibility in bank lending power. [...] the Federal Reserve System itself could resolve much of the problem: if New York banks felt as free to use the discount window as banks in some other Districts, it is probable that money would generally be available to Government security dealers at a modest differential from the existing discount rate.”⁸⁷

The major commercial banks did not try to resurrect the pre-Federal Reserve system. That the NYCH alone could backstop the financial system had become unthinkable. But when the Federal Reserve backstopped the financial system, the study argued, it should do so not directly but through the major banks.⁸⁸

The NYCH proposed that the Federal Reserve outlaw the use of repos by government securities dealers. The rise of repos was still “new enough to be reversed if action is prompt.”⁸⁹ The NYCH was aware that it faced an uphill battle on this point. “This committee recognizes that suppression of repurchase agreements in the manner indicated would be considered by many a drastic step, denying to dealers a source of necessary financing, particularly in light of the tight money conditions at the time this report is written.”⁹⁰

⁸⁷ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 14–15, SR 2.

⁸⁸ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, pp. 30, 38–40, SR 2.

⁸⁹ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 40, SR 2.

⁹⁰ “A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York,” Oct. 22, 1957, p. 42, SR 2.

The regulatory and legislative proposals made in the NYCH's study were meant to bind not only the banks' competitor but also the banks themselves. Outlawing the use of repos by government securities dealers was only the first step. It "would achieve the purpose intended by the Banking Act of 1933 of giving banks protection from raids on their demand deposits by offers of interest from security dealers or other unregulated persons."⁹¹ The second change would make repos unavailable also to commercial banks. It would "shut off banks from use of repurchase agreements as a device to pay interest on demand deposits, or to pay rates on time deposits higher than those permitted under Federal Reserve Board Regulation 'Q.'"⁹²

The study had brought the major New York commercial banks together to contemplate, for the first time since important changes in the money market had taken place, how they would react. They arrived at a position that was decidedly conservative. They did not, at that moment, try to break up the New Deal regime but to resurrect it. They understood their interest not as pursuing the highest return but as filling a role in a stable financial system—one with reliable but limited profits. They did not fully conceive of themselves as individually acting institutions but were willing to take action in the collective interest.

Conclusion

This chapter has explored the beginnings of new forms of money after World War II. The two early money markets under analysis—in federal funds and in repurchase agreements—

⁹¹ "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 42, SR 2.

⁹² "A Study of the Interrelations of the Money Market and Government Securities Market: Report to the Federal Reserve Bank of New York," Oct. 22, 1957, p. 42, SR 2.

developed without the establishment of a formal organization. Early adopters simply started trading with one another. In the case of the federal funds market, the impetus came from a college student moonlighting on Wall Street. In the case of repurchase agreements, the first transactions were so improvised that the identities of their participants have been lost to history.

The early money markets emerged through a rewiring of pre-existing social relationships. Both the federal funds market and the market in repurchase agreements developed in transactions between large firms that possessed trust in one another from the earlier practice of trading in older financial instruments. Another important way in which the creators of these markets overcame the potentially drastic problem of establishing a new form of money was to piggyback on financial instruments issued by the state. In particular, the spectacular growth of public debt during World War II provided government securities dealers with a large inventory of Treasury bonds that could be used as an ideal form of collateral for issuing money: the default risk for the Treasury bonds was essentially zero, and even if the government securities dealer who had issued the repo failed, the holder of the money claim could sell the Treasury bond in a liquid market.

The actors driving the development of the early money markets were securities firms and non-financial firms. The large commercial banks—key elements of the monetary system, according to received wisdom—were either pulled into the action or watched on the sidelines. They did not develop a coordinated position on the growth of the money markets until 1956/7, when a request by the Federal Reserve prompted the New York Clearing House to compile a secret report. It concluded that the new money markets were prone to crisis—a prediction that would be proved right in the early 1970s (chapter 4). The Clearing House banks accused the

creators of the repo market of evading the rules of the New Deal system, while claiming that the banks followed not only the letter but also the spirit of the law.

The Clearing House banks implored the Fed to resurrect the rules around who could engage in banking and who could issue money. They offered the Federal Reserve to become its loyal ally in stabilizing the monetary system, if the Fed kept non-banks from issuing money. Under a reconstructed New Deal system, the Clearing House promised not to chase the highest returns but to act in the interest of the overall system. It is an open question whether it would have really done so, or if the NYCH—which no longer conducted examinations of its members and in many other ways had lost the capacity for collective action as well—was even able of playing such a role.

The question did, in the end, not pose itself because the Fed did not go back to first principles. It turned a blind eye to the Clearing House's observation that the new forms of money lacked a legal basis. Instead of taking the issue to Congress, the Federal Reserve limited itself to adjusting technical matters here and there, while leaving the basic structure of the money market unchanged. The government securities dealers played such an important role in the financing of the U.S. government and in the implementation of monetary policy that the Fed sought to facilitate their financing, even if that meant turning them into, in modern parlance, shadow banks issuing shadow money.

When the largest commercial banks realized that there was no turning back the clock, they entered the business of creating new money markets themselves. As the following chapter will show, their size and their centrality in the financial system would supercharge the transformation of money.

Chapter 3: The Recomposition of the Monetary System (1960s)

Introduction

The previous chapter has described how the first money markets of the postwar era were created in the late 1940s and the 1950s. Brokerage firms, government securities dealers, and corporate treasurers were the main drivers of these early innovations. The largest commercial banks—pillars of the traditional monetary system—initially played a minor role in these markets and even appealed to the Federal Reserve to roll back the changes. This chapter explores what happened when the roll-back did not materialize.

Around 1960, the major commercial banks came to see the growth of the markets in federal funds, repurchase agreements, and commercial paper no longer as merely an abstract concern for the stability of the monetary system but also as a concrete threat to their own business model. In response, large banks began to create new forms of money. Most importantly, Citibank in 1961 introduced the negotiable certificate of deposit, which was immediately adopted by the other major banks and became an important source of funding for the banks well into the 1980s. The New York Clearing House no longer was a place to coordinate the collective attempt to restore the old order; instead, the banks used it as a forum in which to hammer out the technical details of the new markets.

Financial regulators could have rather easily stopped the negotiable certificate of deposit in its tracks. They possessed more power over banks than over other firms that had begun to issue new forms of money. Yet the regulators did not stop the commercial banks, and even encouraged the development of the negotiable certificate of deposit. The primary frame used by the Federal Reserve was not monetary policy but banking regulation: it was in the latter function that the Fed was concerned about banks' ability to fund themselves.

The creation of the negotiable certificate of deposit marked the moment when the money markets led to a recomposition of the entire financial system. Before, it was still possible to argue that the market in federal funds was, for the most part, an extension of the large banks' traditional practice of providing funding to their smaller correspondent banks, and that the markets in non-financial firms' commercial paper and in securities firms' repurchase agreements were merely additions to a financial system whose core mechanics were still those of commercial banking. With the New York Clearing House members issuing new forms of money, however, the change had arrived at the heart of the monetary system. First of all, it made a quantitative difference: because the combined balance sheets of the large commercial banks were much longer than those of the Federal Reserve or the government securities dealers, the impact on the financial system was larger.

Even more importantly, the entrance of the large commercial banks as prominent issuers into the money market changed the financial system qualitatively. It unsettled the norms that oriented financial transactions across a number of markets, and disturbed the relationships between different groups of actors. Industrial firms, for example, had traditionally relied for much of their short-term funding on standing credit facilities provided by commercial banks, as part of a broader bank–client relationship that provided the bank with several opportunities to

make profit. The banks had felt a duty to provide such credit when the industrial firm needed it, even in instances where doing so was a loss-making proposition for the bank. The losses could be smoothed out over time, and banks could draw on a deposit base to which only they had access. By the early 1960s, however, both industrial firms and banks issued money-market instruments. They were competitors for the same base of funds in the money market, but the industrial firms continued to rely for part of their funding on banks. Were the industrial firms the banks' customers or its competitors, or both? Was there still an obligation on the part of the banks to help out industrial firms and securities firms during a crisis? Away from the view of the public, financial actors struggled over such crucial questions during the 1960s.

The Banks Become Drivers of the Marketization of Money: The Negotiable Certificate of Deposit

The negotiable certificate of deposit, introduced in 1961, was the first money-market instrument created by banks. Scholars invariably describe it as a “revolutionary instrument” (Zweig 1995:113). The negotiable certificate of deposit was, as the official history of Citibank would put it, “[t]he solution to the funding problem” of the commercial banks (Cleveland and Huertas 1985:254). A textbook for market practitioners summarizes the instrument's importance as follows: “in their funding, money market banks came to rely so heavily on the sale of [negotiable certificates of deposit] that it became impossible to imagine how these banks could manage their liability positions without them” (Stigum and Crescenzi 2007:923).

The single most important figure in the creation of the new money market was Walter Wriston, the head of Citibank. If postwar American finance had a Pasteur (Latour 1988), it was Wriston. He did not have the skills of a politician; but his actions changed society more than

those of most politicians; and he gave a misleading account of how he had achieved these changes.⁹³ Wriston, who considered himself “the world’s greatest amateur lawyer” (Zweig 1995:217), explained the negotiable certificate of deposit as the exploitation of a legal loophole. Once an inefficient regulatory constraint was overcome, so the story goes, individual actors raced to the new product because of its profit potential. According to Wriston, Citibank did not ask the Federal Reserve for permission because it expected the regulators to block the new product (Zweig 1995:142).

In this section, I will argue that Wriston’s account is tinged by the libertarian leanings of his retirement years, which are evidenced in his books (Wriston 1986, 1992). While at the top of Citibank, Wriston did not merely trust in rational calculations but was also adept at building on social relations and rewiring them. The negotiable certificate of deposit grew out of collective puzzling by the Clearing House members, depended on the enrollment of a group of large firms to create a liquid market in the new instrument, and was encouraged by regulators.

Bankers’ Collective Puzzling over the Lack of Funding

While, in their “Study of the Interrelations of the Money Market and Government Securities Market,” the Clearing House members had still framed the rise of money markets driven by nonbanks as an abstract issue for the stability of the financial system, they soon changed to framing it as a concrete threat to their own business model. At meetings in October and November 1957, the bank CEO’s who made up the Clearing House Committee discussed

⁹³ As with Pasteur, the misleading account—in Wriston’s case, claiming that market competition did the job—was part of the reason for his success.

what they perceived as a trend of deposits away from the major New York City banks. They held that the decline in deposits “warrants serious study” and appointed a special committee.⁹⁴

In September 1959, the new committee reported that New York had “suffered relative loss of ground in that deposit growth here, in recent years, has lagged behind that in other parts of the country.”⁹⁵ The problem was understood to be significant: “It must be arrested if the leadership of the City as the nation’s banking center is to endure.”⁹⁶

The report for the most part dismissed as relatively unimportant nonfinancial changes, which were much discussed by the public at the time, such as the loss of industry in New York relative to other parts of the country and the high number of well-paid employees moving from New York City to the suburbs (where the NYCH banks, under New York state law, could not open branches). These changes were seen as merely secondary by the NYCH because “[d]eposits of the big New York City banks have never been confined to individuals and concerns located within the City limits. These banks have always done a nationwide, even worldwide, deposit business.”⁹⁷

The committee identified three growing money markets as driving the “reduction in the category of deposits that uniquely gravitates to New York.”⁹⁸ First, the market in federal funds

⁹⁴ Minutes, NYCH Committee, November 18, 1957, p. 134, CM 12.

⁹⁵ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 1, folder “September 25, 1959 [II],” CF 7.

⁹⁶ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 1, folder “September 25, 1959 [II],” CF 7.

⁹⁷ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 3, folder “September 25, 1959 [II],” CF 7.

⁹⁸ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 5, folder “September 25, 1959 [II],” CF 7.

“enabl[ed] interior banks to economize on idle cash balances that might otherwise be carried in New York banks, and free[d] funds for lending in competition with New York institutions.”⁹⁹ Second, the report highlighted the “growth of corporate investment in commercial paper.”¹⁰⁰ Third, the deposit study reiterated the finding of the “Study of the Interrelations of the Money Market and Government Securities Market” that “[t]he spreading use of the repurchase agreement (RP) by the very large companies as a short-term investment medium has had serious and direct impact on NYC bank balances.”¹⁰¹ These trends were likely to continue, the Clearing House concluded: “Treasurers of the large companies in their efforts to keep their cash at work have developed many new skills, and the banking system and Federal Reserve have helped to keep cash constantly employed. While developed under the pressures of the business boom and high money rates, such skills will not be forgotten. The size of the necessary and prudent cash reserve to be left on deposit has been permanently reduced for most companies. The cash forecast has been refined, collection of bills has been speeded, the bank wires hum—all reflected in turnover of bank deposits.”¹⁰²

Whereas the “Study of the Interrelations of the Money Market and Government Securities Market” had tried to conserve the old system, the Deposit Study sought to tear it down. It discussed many of the same changes as the earlier report, but this time not to criticize

⁹⁹ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 4, see also p. 71, folder “September 25, 1959 [II],” CF 7.

¹⁰⁰ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 87, folder “September 25, 1959 [II],” CF 7.

¹⁰¹ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 84, folder “September 25, 1959 [II],” CF 7.

¹⁰² Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, pp. 83–84, folder “September 25, 1959 [II],” CF 7.

them. “[W]e recognize the valuable contribution certain of these developments have made towards strengthening American banking and the money market, and making possible a higher level of operating efficiency for the banking system as a whole and the business community which it serves [...] Our study has convinced us that for the most part these changes have been in the public interest and hence not of a character to which this committee would wish to take exception.”¹⁰³

The Road Not Taken: Legal Change

For the banks to compete with the money markets, the “Deposit Study” recommended seeking legal changes. It listed several core restrictions built into the old financial system and remarked: “whatever the original justification of the [...] regulations mentioned below, they now tend to weaken the competitive position of the New York City banks without providing any significant off-setting benefits to the financial system or business as a whole.”¹⁰⁴ The committee recommended that the major New York City banks be allowed to accept deposits outside the city line and that reserve requirements for them be lowered to the level required of the out-of-town banks. It also suggested lobbying the Federal Reserve so that the NYCH member banks be allowed to pay interest rates on foreign time deposits that would make the deposits more attractive than government bonds.¹⁰⁵

¹⁰³ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 7, folder “September 25, 1959 [II],” CF 7.

¹⁰⁴ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, p. 3, folder “September 25, 1959 [II],” CF 7.

¹⁰⁵ Report of the Special Deposit Study Committee of the New York Clearing House, Sept. 25, 1959, pp. 8–10, folder “September 25, 1959 [II],” CF 7.

But pushing for legal change would not become the way in which the banks transformed the financial system. New legislation was difficult to achieve, as the relevant Congressional committees were often gridlocked (Salamon 1975; Worsham 1997). The large New York City banks had many interest groups against them. In the early 1970s, the chairman of the Clearing House Committee would ask their Washington lobbyist “if he believed that an endorsement of legislation in the Congress by the New York Clearing House banks was in each case the ‘kiss of death.’”¹⁰⁶ When the large banks succeeded by way of lobbying, then often only in the long term. The division between commercial and investment banking would not be legally removed until 1999 (Funk and Hirschman 2014). Lobbying on banking regulation “required a steely outlook, long-term patience, and a willingness to engage in a grinding politics without end” (Rose 2019:xiii). As the banks felt existentially threatened by the new money markets, they did not have that long to wait.

In the specific case of increasing funding in the face of the competition from the money markets, early attempts at legal change failed. In 1958, for example, the Clearing House gave up its attempt to change New York State Law to make it possible for a certificate of deposit to be redeemed before maturity, after the proposal had not fared well in the State parliament on two occasions.¹⁰⁷

¹⁰⁶ Clearing House Committee Minutes, Aug. 22, 1973, CM 14, p. 41.

¹⁰⁷ Mr. Pierce to Messrs. Ringler and Fitch, May 28, 1958, folder “July 14, 1958,” SF 3; George A. Guerdan to Paul R. Fitch, June 17, 1958, folder “July 14, 1958,” SF 3; Clearing House Steering Committee Minutes, July 14, 1958, folder “July 14, 1958,” SF 3.

A New Money Market Created By Banks

Against the background of collective puzzling among Clearing House banks and the elusiveness of legal change, Citibank solved the problem of funding by creating a market for negotiable certificates of deposit. A legal innovation was necessary but not sufficient for this achievement.

Certificates of deposit were a long-established form of interest-bearing deposits at banks (McKinney 1967). They were not money, because the depositors had to wait—for at least one month—until the certificate matured before they could use the funds to make payments. The issuing banks were barred by law from redeeming the certificates before maturity (Law and Crum 1963:118).

The legal innovation that would contribute to making the certificates of deposit into a money equivalent was to make them negotiable. That way, the holder of the certificate could sell it to somebody else and have the funds available for payment before maturity. Wriston developed this idea already in 1960. One of the Greek shipping entrepreneurs with whom Wriston had made his early successes in banking wanted to deposit money at an interest rate without his name on the deposit, to avoid taxes. Together with Citi's law firm, Wriston developed a million-dollar negotiable certificate of deposit that was issued to somebody else and then immediately sold to the Greek shipper (Zweig 1995:113). But the legal innovation alone did not yet make the negotiable certificate of deposit a form of money. Finding a buyer who was willing to purchase a certificate over a given amount and a given maturity was difficult, and the success of the instrument in the form that was issued to the Greek shipper was perceived as very limited (Cleveland and Huertas 1985:255).

The second ingredient necessary to create a new form of money was to organize a liquid secondary market for the negotiable certificates of deposit. This was the insight that Wriston had in 1961, and which he implemented through an arm's-length transaction if there ever was one. Wriston enrolled the dealer firm of Discount Corporation, a government securities dealer which was "noted for making a market in a wide variety of money-market instruments in addition to Treasury securities" (Law and Crum 1963:118). Even the official history of Citibank would later describe what Wriston did to get Discount on board in blunt terms: "The Discount Corporation was willing, provided the bank supported the venture with an unsecured loan of \$10 million. The bank broke its rule of not lending to brokers on an unsecured basis, and the market was made" (Cleveland and Huertas 1985:255–56).

At the end of the year, several securities firms were constantly buying and selling negotiable certificates of deposit (McKinney 1967:77–78). The resulting ability to treat the instruments as equivalent to money convinced even financial actors who had been skeptical at first, such as the corporate treasurer of Chrysler, Walter J. Simons. He would later recollect: "we didn't actually get into the market at all at the outset, although many companies did, because the secondary market hadn't been proved. We didn't know how quickly we could sell [the negotiable certificates of deposit]. As the thing has evolved, the secondary market has developed strongly."¹⁰⁸

Only a few years before, the major New York City banks had tried to keep securities dealers out of the business of issuing money. Now, the banks used the securities dealers as a crucial part in their own issuing of new forms of money.

¹⁰⁸ Robert Morris Associates, *Monthly Bulletin*, December 1963, pp. 147–168, here p. 159.

The Changing Role of the Clearing House

The contrast between the old and the new money system is particularly stark when we consider the role of the New York Clearing House. When, a few years earlier, the banks sought to defend the old model of money, it was through the Clearing House as their traditional platform of collective action that the banks formulated their position. But the Clearing House had proved too weak to carry out that program.

Now Citibank had created a new type of money without consulting with the other Clearing House members. Once Citibank had introduced the new product, the other major New York City banks individually decided—within hours—to follow Citi’s example, out of fear that they would otherwise miss out on funding.¹⁰⁹ As one Chemical Bank official said: “Citibank, with hobnail boots, forced the move toward market determination of interest rates” (Zweig 1995:143).

The Clearing House no longer was an organization trying to hold back new forms of money, but was used as a forum to coordinate their technical details. On February 27, 1961, the chief operating officers of the member banks met to “discuss technical aspects of the certificate of deposit form to be used in connection with the time deposits of corporations.”¹¹⁰ Two days later, counsel to the member banks met to discuss legal aspects.¹¹¹ The Clearing House also provided crucial infrastructure for the market by allowing the negotiable certificates of deposit to be cleared and settled.¹¹²

¹⁰⁹ Anon., “Leading NY Banks Follow FNCB in Issuing \$1 Million Negotiable Term Certificates,” *American Banker*, Feb. 23, 1961.

¹¹⁰ Paul R. Fitchen to Mr. Young et al., Feb. 24, 1961, folder “April 17, 1961,” CF 7.

¹¹¹ W. C[urtis] P[ierce] to Mr. Bliss et al., Feb. 27, 1961, folder “April 17, 1961,” CF 7.

¹¹² Norman M. Dykes, Jr., to W. Curtis Pierce, March 16, 1961, folder “April 17, 1961,” CF 7.

Regulators as Cheerleaders

Contrary to Wriston's later telling, the Federal Reserve was not an obstacle in the creation of the market for negotiable certificates of deposit, but had actually cheered it on. The new form of money had the "implicit blessing of the Federal Reserve" (Cleveland and Huertas 1985:254).

Federal Reserve Bank of New York Vice President Howard D. Crosse would later recall about the negotiable certificate of deposit: "I had something to do with its launching a couple of years ago."¹¹³ In a speech at the annual meeting of the American Bankers Association in January 1961, Crosse had spoken about "the liquidity squeeze" in which banks found themselves.¹¹⁴ He stated that "a large portion of the liquid assets of individuals and corporations has come to be held outside the commercial banking system—[for example,] short-term securities and other money-market instruments on the part of corporations."¹¹⁵ This speech was made a few weeks before Citibank introduced the negotiable certificate of deposit, and Crosse indeed called on banks "to recapture a part of the growing market for investment funds,"¹¹⁶ saying that "[f]or banks to regain their traditional role as financial intermediaries, new forms of deposits and new markets may be required."¹¹⁷ The regulators other than the Federal Reserve also let the new

¹¹³ Robert Morris Associates, *Monthly Bulletin*, December 1963, pp. 147–168, here p. 160.

¹¹⁴ *ibid.*, pp. 106–7.

¹¹⁵ *ibid.*, p. 104.

¹¹⁶ *ibid.*, p. 110.

¹¹⁷ *ibid.*, p. 113.

market stand. In response to questions from financial actors over the spring and summer of 1961, the Comptroller of the Currency gave its blessing to the new form of money.¹¹⁸

Change By Legislation When It Is Technical Enough

As the negotiable certificate of deposit was created, the banks lobbied legislators in one respect only, and because of the establishment of the negotiable certificate of deposit by way of a legal loophole, this lobbying could take the form of a technical issue—much easier to win than an open political struggle (Carruthers 2017:390). At their meeting on March 1, 1961, counsel of the Clearing House members had concluded that it would be preferable to issue the certificates of deposit in so-called bearer form. In that form, the issuing bank would not keep a record of who owned the certificate but would pay interest and principal to whoever presented the certificate to the bank. This would make it easier to conduct trading in the certificates than the default form, under New York State law, of a registered instrument.

The minutes of the Clearing House Committee meeting on March 20, 1961, show that, when legislators perceived the question at hand not as a political but as a technical one, lobbying could work smoothly. The minutes note that after their meeting on March 1, counsel to the members banks drafted “an amendment to the New York Penal Law [...] which would permit banks to issue time certificates of deposit in bearer form. The Chairman [of the Clearing House Committee, Henry C. Alexander, head of Morgan Guaranty Trust Company] informed the Committee that he had discussed the desirability of such an amendment with Superintendent

¹¹⁸ Anon., “Comptroller’s Office Answers Questions,” *American Banker*, June 11, 1962. See also Anon., “Trading in Time Deposit Paper at Yields over 3% Will Be Legal, Authorities Say,” *Wall Street Journal*, Feb. 27, 1961.

Clark¹¹⁹ and it was agreed that the Clearing House would sponsor the bill and the Banking Department would give its full support. A bill to this effect has now been introduced in both houses of the Legislature.”¹²⁰

By April 17, 1961, the bill had become law.¹²¹ Through lobbying on a technical point combined with the creation of a new market practice, the Clearing House secured the functional equivalent of a direct legal change that it had failed to achieve in open political struggle only a few years before.

Negotiating Roles and Norms in the New Monetary System

That the largest banks joined in the creation of new forms of money set off a wave of changes that rippled through the entire financial system. These changes were not discussed by the public—the introduction of the negotiable certificate of deposit, for example, had merited only a short item in its business section of the *New York Times*¹²²—nor shaped by legislators. Instead, the changes were negotiated informally by financial actors.

A rare opportunity to observe this process is afforded by a verbatim transcript of a panel on “The Secondary Banking System” that brought together representatives of the commercial banks, securities firms, and corporate treasurers, and the central bank. It took place at a conference of Robert Morris Associates, the National Association of Bank Loan Officers and

¹¹⁹ G. Russell Clark was New York State Superintendent of Banks and hence head of the Banking Department. Before assuming that role, Clark had been the manager of the New York Clearing House.

¹²⁰ Clearing House Committee Meeting Minutes, March 20, 1961, p. 31, CM 13.

¹²¹ Clearing House Committee Meeting Minutes, April 17, 1961, p. 37, CM 13.

¹²² Albert L. Kraus, “Interest on Time Deposits Paid By the First National City Bank,” *New York Times*, Feb. 21, 1961.

Credit Men, at the Statler-Hilton Hotel in Detroit in September 1963, i.e., about two years and a half after the introduction of the negotiable certificate of deposit.

The panelists represented all important types of financial actors in the new money markets. Alfred J. Hauser was Senior Vice President of Chemical Bank New York Trust Company, a member of the NYCH. John H. Rhoades was a partner at Goldman, Sachs—then still written with a comma and not yet a universal bank but an investment bank and securities firm. Walter J. Simons was the Treasurer of Chrysler. He was characterized by Hauser as an “open market man,”¹²³ i.e., a treasurer who leaned heavily on the new money-market instruments, a fact that Simons confirmed when he described how he and his colleagues at Chrysler “go fairly far”¹²⁴ in their reliance on the money market. Howard Crosse was Vice President of the Federal Reserve Bank of New York. His speech in January 1961 had played a role in the emergence of the negotiable certificate of deposit.¹²⁵

I will conduct a fine-grained discourse analysis to show how private actors and regulators groped for an understanding of the dynamics of the new system, which had emerged without a master plan. The conversation is as notable for what was said as for what was not said—for its silences, ambiguities, non-sequiturs, and contradictions.

Money or Credit?

One of the few things on which all financial actors could agree was that, as Crosse put it, the “whole spectrum of liquidity instruments which have come into being [...] in recent years

¹²³ Robert Morris Associates, *Monthly Bulletin*, December 1963, pp. 147–168, here p. 160.

¹²⁴ *ibid.*, p. 152.

¹²⁵ *ibid.*, p. 160.

[...] have grown in outstanding volume most remarkably.”¹²⁶ Hauser said about the new market: “I guess we can agree it is still secondary, but it is reaching the primary stage.”¹²⁷ Rhoades suggested as much when he recommended that, in its funding, “an unquestioned credit, a leader in an industry, should go 50 per cent banks, 50 per cent commercial paper.”¹²⁸ For these actors, the money markets were close to a tie with the traditional banking system.

But were those “liquidity instruments” money or not? The panelists did not openly debate the question, but they disagreed with one another implicitly. Crosse said: “I want to emphasize [...] that we are talking about *credit* instruments and every one of them has a credit risk.”¹²⁹ But Rhoades said that Goldman, Sachs treated “negotiable [certificates of deposit] of a major money center bank” as riskless, and that other market participants included “prime commercial paper” among “nonrisk assets.”¹³⁰

Similarly ambiguous were the answers to the question whether all firms that issued money-market instruments were engaged in banking. Hauser said that money-market activity “is not banking.”¹³¹ Crosse similarly spoke of a “short circuiting of the banking system, for here one corporation lends to another without going into the commercial banking system at all.”¹³² But he also noted that, “since 1961, the commercial banks [...] are making a very active bid to get back

¹²⁶ *ibid.*, p. 148.

¹²⁷ *ibid.*, p. 152.

¹²⁸ *ibid.*, p. 156.

¹²⁹ *ibid.*, p. 149.

¹³⁰ *ibid.*, p. 150.

¹³¹ *ibid.*, pp. 152–3.

¹³² *ibid.*, p. 148.

into this market for liquidity instruments” through issuing negotiating certificates of deposit.¹³³ Simons described the substantial move of funds into negotiable certificates of deposit as “getting [funds] back [...] out of the secondary market into the banking system.”¹³⁴ But those funds were not getting back into regulated, backstopped banking products, i.e., money in its traditional sense. The ambiguity of money and nonmoney, banks and nonbanks shaped the entire conversation.

One of the reasons why these distinctions mattered tremendously was that money was traditionally seen as requiring much less screening than credit. If investors put their funds into credit products but screened them only as superficially as they had screened money products, they were in for unexpected losses. Crosse spoke of “the potential dangers creditwise that may develop if one corporation lends directly to another without the screening of a bank credit man or a commercial paper credit man.”¹³⁵ Hauser opined that “[a] lot of people who buy commercial paper [...] are pretty dumb on the subject.”¹³⁶ Rhoades recounted that Goldman, Sachs had intervened when a client bought commercial paper without conducting independent research. “This concerns us. We found one of our customers that was doing just that, and we suggested that they check with their New York bank on each purchase. This creeps into all sorts of investments. [...] If the buyer doesn’t understand paper, he ought to buy Treasury bills.”¹³⁷ This recommendation, however, was called out as mostly wishful thinking by Simons: “despite Mr.

¹³³ *ibid.*, pp. 148–9.

¹³⁴ *ibid.*, p. 152.

¹³⁵ *ibid.*, p. 149.

¹³⁶ *ibid.*, p. 134.

¹³⁷ *ibid.*, p. 163.

Rhoades' protest, I think the buyer does get a certain sense of well-being dealing with [...] a company” based on simple signals such as that the paper was sold by Goldman, Sachs.¹³⁸

The panelists provided several examples of how the money market acted on little information. Rhoades recounted that “[n]ot long ago I questioned a corporate treasurer on his repurchases, and he indicated he lowered his standards when a dealer was committed to repurchase them. In other words, he took into his portfolio lower grade items than he normally would.”¹³⁹ In the market for negotiable certificates of deposit, banks from the West found that they had to pay higher interest rates than older banks with a similar economic profile. Simons explained this rate differential as follows: “Well, I think corporate treasurers generally do deal with the names with which they are familiar. As far as the treasurer is concerned, he wants the highest yield he can get, and it is a free market, and if it isn't offered, he won't buy. But for some reason or other, the secondary market is not reacting quite as favorably to some of the banks outside some of the major centers.”¹⁴⁰ We see here an interesting skirting around the question of the free market, almost a cognitive dissonance: the speaker describes the money market as following rational calculations, but simultaneously describes it as irrational (or as of very limited rationality) in its judgment of some borrowers.

Relationship or Arm's Length Banking?

In addition to debating the fundamental character of the instruments traded on the money markets, the panelists also struggled over the basic norms that should govern trading in this

¹³⁸ *ibid.*, p. 167.

¹³⁹ *ibid.*, p. 151.

¹⁴⁰ *ibid.*, p. 165.

market. All panelists drew a stark distinction between a market transaction and a more relational transaction. In Crosse's words, "A market transaction is a transaction in a credit instrument and nothing else, and this credit instrument is bought and sold at a price determined by its creditworthiness and by the demand and supply of funds in the market at the moment. Very distinct from that and very different [...] is a bank lending transaction. In a lending transaction the borrower receives more than money for the price he pays, whether he receives constructive advice and other services or just the assurance that money will be available when he needs it."¹⁴¹

Commercial banks and their large clients had traditionally followed the relational model, as Crosse put it: "The loan transaction [...] lies at the heart of our whole commercial banking function."¹⁴² Both sides were in the relationship for the long run and did not defect because of a few basis points that could be earned by borrowing from or lending to a different counterparty. A large firm would continuously keep a sizable demand deposit balance at its main bank (i.e., provide it with interest-free funding) and take out loans from that bank (i.e., generate interest rate income for the bank). In exchange, the bank would provide the firm with advice and guarantee—typically not legally but morally—that loans would be available when the firm needed them, even if the firm was in financial problems or the financial system experienced stress.

When banks began to issue money-market instruments, the corporate treasurers had to decide whether to treat them in a relational way (because they were issued by banks) or in an arm's-length way (because they were market instruments). Simons recounted: "We gave a great deal of thought to it when they first introduced them and considered all the possibilities, tinged with relationships or not, and came to the conclusion that we wanted to treat them completely on

¹⁴¹ *ibid.*, p. 161.

¹⁴² *ibid.*, p. 161.

an arm's length basis."¹⁴³ This was also the view supported by Crosse: "I think it can work as an instrument in the market only if it is treated both by banks and by the corporate treasurers as an impersonal credit instrument. [...] This should be a faucet which banks can turn off and turn on with rate changes and with nothing else involved."¹⁴⁴ In practice, however, some corporate treasurers played a double game, as Simons relayed from the commercial paper market: "I have heard tales from bankers where companies insist on a little better rate and get it and then go out and sell it in the secondary market."¹⁴⁵

The question of the norms in the money market was important in normal times, and even more so in crises. When money-market participants made their decisions according to an arm's-length logic, organizations that experienced problems might suddenly find themselves cut off from funding through the money market. Where would they turn? According to Crosse, the money market "relies ultimately on bank credit as an underpinning."¹⁴⁶ He argued that "[t]he commercial banking system has more responsibility for this secondary banking system than I think most of us realize. [...] Underneath it all, implicit in this situation is the fact that if someone can't pay his loan directly, he will go to the bank and borrow the money, and banks do have some responsibility—perhaps not legally, but morally—to bail out the secondary banking market when it gets into trouble."¹⁴⁷ Addressing the bankers in the room, Crosse said: "You know that [...] you stand ready to lend all the money that your good customers need. But what

¹⁴³ *ibid.*, p. 159.

¹⁴⁴ *ibid.*, pp. 160–1.

¹⁴⁵ *ibid.*, p. 159.

¹⁴⁶ *ibid.*, p. 149.

¹⁴⁷ *ibid.*, p. 154.

about these fellows that have withdrawn their demand deposit balances or have pared them down to the bone and are doing their financing in the market and not coming to the bank? Are you morally obligated to take care of them, too, when things go wrong?”¹⁴⁸ He did not get an answer.

Elusive Governance

The questions about norms guiding action and about mechanisms to deal with emergencies were, in the end, questions about governance. Several panelists doubted that the money market, without any formal organization, could resolve such problems. The money market, Hauser argued, “certainly is not a system. A system is a related group of objects which are placed in relation to one another. The [money market] is merely a conglomeration of unrelated people.”¹⁴⁹ He used similar terms to describe the financial market of the 1920s, before the Great Depression: “It was an unorganized market. There was no control, no regulation, and no continuity.”¹⁵⁰ Simons characterized the actions of his fellow corporate treasurers as driven by short-term profit maximization: “it is a matter of simply that the yield is a little higher.”¹⁵¹

Faced with such short-term profit-maximizing customers, Hauser described his fellow bankers as helpless in creating governance for the money market, and even struggling to defend the traditional governance of the banking system. The strong ties of traditional relationship banking were being dissolved as soon as they made contact with money-market transactions. “[T]he touchiest part of all this is the poor guy on the firing line, the [bank officer] whose job it

¹⁴⁸ *ibid.*, p. 154.

¹⁴⁹ *ibid.*, p. 153.

¹⁵⁰ *ibid.*, p. 154.

¹⁵¹ *ibid.*, p. 167.

is to get and maintain balances, to develop customer relations, and keep them good, keep them exclusive if possible.” Hauser recounted the case of a customer who had received an offer from another bank to invest in a negotiable certificate of deposit over 500,000 dollars at a better interest rate than he received at Hauser’s bank. Attempts to keep such customers, Hauser said, were usually futile: “It is just fighting a delaying action most of the time.”¹⁵² The more so as the major bankers were quickly losing their informational advantage over their customers. Hauser recounted the story of an out-of-town bank that carried more funds than similar banks did in demand deposits with two large banks in New York City. “We didn’t tell this customer about Fed funds, but he found out about them [...] and he was just as mad as could be. So I say share your information with your correspondents and with your customers. Let them know what they can do with their money, because if you don’t, you will get caught. (Laughter).”¹⁵³

The commercial banks felt, according to Hauser, that “there is a limit to what we can do in the open to sponsor our own cause because our motives might be suspect.”¹⁵⁴ One of the few possibilities they had was to “conduct a continuous educational program so that our customers understand the situation and play ball with us. [...] Probably our boards of directors are the best means of getting the message across. If you can get an industrialist on your board to do some of this educating of other industrialists in your community as to the desirability of maintaining this all-around, continuing relationship with a bank, this, I am sure, is the best way to get the word across.”¹⁵⁵ But over the next decades, the banks would have fewer opportunities to do so, as their

¹⁵² *ibid.*, p. 160.

¹⁵³ *ibid.*, p. 167.

¹⁵⁴ *ibid.*, p. 158.

¹⁵⁵ *ibid.*, p. 158.

boards lost their centrality in the networks of American business (Davis and Mizruchi 1999; Mizruchi 2013).

The Federal Reserve saw the problems clearly but did not propose regulation. Instead, it appealed to the bankers to impose some kind of governance. Crosse said: “I think that this helplessness or this giving up before you have to is something the banks themselves must do something about. They must stiffen their backbones in some way or another.”¹⁵⁶ He exhorted the commercial bankers: “It seems to me that you as credit officers in your banks have a responsibility to understand this difference and to guide your own customers into the secondary market, if you will, where they can appropriately use it at better rates for a portion of their requirements. At the same time you have a duty to educate your customers as to the necessity of preserving the balance between the primary and the secondary markets.”¹⁵⁷ This was a difficult proposition. Who would define what it meant that customers would “appropriately use” the money market? And if the customers would receive “better rates” in the money market, why would they accept “the necessity of preserving the balance between the primary and the secondary markets”? Indeed, Crosse himself had earlier said: “no one, even the banker who wants more demand deposits very badly, can accuse the corporate treasurer of bad faith or anything else for using his balances as profitably as he can.”¹⁵⁸

The difficulty of reversing or even slowing down the commodification of money became most pronounced in the discussion over so-called commitment fees for standby letters of credit. These fees would have been a way to adjust the traditional bank–customer relationship in light of

¹⁵⁶ *ibid.*, p. 158.

¹⁵⁷ *ibid.*, p. 162.

¹⁵⁸ *ibid.*, p. 155.

the pressures from the money market. Through standby letters of credit, commercial banks supported the commercial paper issued by their customers (Kane 1979:165; Stigum and Crescenzi 2007:976–80). Potential buyers of commercial paper often required a standby letter of credit as an explicit commitment from the bank to lend to the commercial paper issuer so that the likelihood of repayment would be increased. Banks had traditionally provided such commitments if their clients kept twenty percent of the guaranteed sum as demand deposits with the bank. This was an implicit payment because it constituted funding, for which the bank would otherwise have had to pay an interest rate, for free.

However, as the sum of such standby letters of credit shot up with the growth of the commercial paper market, the old model seemed to pay the banks too little during normal times and to overtax their ability to provide emergency credit during crises. When an (unidentified) audience member asked Hauser: “With banks losing both cash balances and usage of established lines of credit, is there any serious thought to placing a commitment fee on a line of credit that is primarily used to back-stop open market paper?”, Hauser merely replied: “I am afraid I can’t say anything very intelligent on that.”¹⁵⁹ Hauser probably felt that he would not have the power to impose anything he could suggest and so thought better of unsettling commercial banks’ clients. Crosse answered: “I think that these credit lines are important and these relationships should be maintained. Compensating balances are one way of doing it. I happen to be one who thinks that banks could explore commitment fees, as someone has suggested, as an alternative. I am not advocating this; I am just advocating thinking about it. (Laughter)”¹⁶⁰

¹⁵⁹ *ibid.*, p. 164.

¹⁶⁰ *ibid.*, p. 168.

The laughter indicated that the representatives of all important market participants could not agree—or, more precisely, did not even try to reach agreement—on what to do about a proposal to impose some governance on the commodification of money. Crosse explicated this seeming inability to act: “I think most of us would like to stick to bank lending, but sometimes the situation itself forces us into new avenues where we are reluctant to wade.”¹⁶¹ By resorting to placeholders such as “the situation itself” or “competitive pressures,” the panelists had already internalized what they were criticizing. In the absence of collective action, proposals were picked up almost only when they could be implemented by private contract and led into the direction of the commodification of money. In 1961, Crosse’s call on banks to marketize their funding had been heeded. In 1963, his call on banks to step out of the ruinous competition over credit lines backing other actors’ ballooning money-market funding went unheeded.

Predicting Crisis

The panelists were concerned that the rise of the money market led banks to take on more risk. Before the introduction of the negotiable certificate of deposit, banks had been short of funding relative to the large demands for credit with which their corporate customers approached them. The funding had been relatively cheap, and the loans to large firms relatively safe. With the rise of the money market in the 1960s, the banks and large firms experienced what private households and small businesses would experience in the 1970s and 1980s (Krippner 2011:58–85): there was a lot of funding available, but it was expensive. At the same time, the banks no longer had as much loan demand from their large corporate customers, because they, in turn,

¹⁶¹ *ibid.*, p. 165.

increasingly funded themselves on the money market. The banks were thus tempted to invest the funds that they had raised through the money market in riskier assets.

Panelists warned against this increasing risk. In Rhoades' words: "R/P's are highly desirable for sizable but very short excess cash situations, but not where the banking system and the Fed funds market each has to rev up to ulcer-producing pitch to produce a \$50 gain for an investor."¹⁶² That dollar amount was not an exaggeration: if you invest one million dollars for six days at a rate 0.3% higher than your borrowing cost (a plausible spread at the time), you make a profit of fifty dollars.

Hauser said: "We should not go out and buy the money first and then wonder what to do with it. The danger [...] is that we competitively reach out for additional money through the issuance of [certificates of deposit]. Then, in order to earn enough to cover our cost—and the cost includes some overhead and it includes our reserve lying idle at the Fed—there is a tendency to stretch either in terms of credit or in terms of maturity. I am afraid that there are a few people who are issuing six-month [certificates of deposit] and investing the proceeds in 30-year municipals. (Laughter) This is where the pinch will come."¹⁶³

The pinch could come suddenly for banks or non-banks that relied for much of their funding on the money market with its arm's-length transactions and superficial screening. The panelists invoked a cautionary tale from 1962, when a Pulitzer-Prize-winning investigation exposed corruption and fraud at the companies of the Texan businessman Billie Sol Estes, and the FBI began an investigation. The news had had "immediate effects" on the money market, as Rhoades recounted: "At the time of Billie Sol Estes' disclosure, one of the largest [money

¹⁶² *ibid.*, p. 151.

¹⁶³ *ibid.*, p. 167.

market] investors immediately removed from its approved list all of the issuers who were involved in lending to Estes without regard to each issuer's reserves or insurance coverage or relating the size of the Estes loan to the issuer's capital and assets."¹⁶⁴ Relying on such an erratic market appeared as a dangerous way to fulfill an increasing share of the short-term funding needs of the American economy.

Rhoades, whose firm helped companies to fund themselves through the money market, tried to soothe the debate by claiming that the money market was effectively backstopped by the banking system: "We value bank lines [...] A cardinal principle of ours in presenting the use of the open market to a prospective borrower is that commercial paper *supplements* bank borrowing arrangements, rather than replacing them. And, except for the extremely large national companies, we ask borrowers to have adequate confirmed bank lines to accommodate the peak of their combined—that is, bank and commercial paper—current borrowings."¹⁶⁵

But this attempt at reassurance left out exactly the biggest risks: the "extremely large national companies." And it left unasked the question how the banks would be able to fulfill several or even all of the credit promises they had made simultaneously. Crosse seemed to concede that there were limits to the role of banks in backstopping the money market when he said that "[b]anks still have *some* responsibility today as the secondary banking market grows in size."¹⁶⁶ But he did not say whether the Federal Reserve would provide the remaining backstop, and if so, whether it would lend directly to the companies or go through the banks. The one banker on the panel, Hauser, did not speak to the topic. These were important silences.

¹⁶⁴ *ibid.*, p. 157.

¹⁶⁵ *ibid.*, p. 156, emphasis in the original.

¹⁶⁶ *ibid.*, p. 154, emphasis added.

Conclusion

This chapter has described the profound recomposition of one of the major collective actors in the monetary system. Around 1960, the large commercial banks concluded that their attempts to roll back the money markets pioneered by other actors were futile. From the early 1960s on, their goal was no longer to put nonbanks back on the leash, but to unleash the banks. This decision was forced on the other Clearing House members by Citibank when it invented the negotiable certificate of deposit.

Often understood primarily as the exploitation of a legal loophole, the negotiable certificate of deposit also required the creation of a market to become sufficiently money-like for private actors to adopt it. Citibank overcame this hurdle by giving a financial enticement—which violated the bank’s internal rules—to a securities firm. Only the existence of this liquid market convinced financial actors that the new instrument was indeed a form of money.

After the establishment of the negotiable certificate of deposit as a major new form of funding, the large banks were no longer the same actors as before. They were less dependent on their traditional depositors, had access to more funding but at a higher price, and hence were searching for new, higher-yield investment opportunities. The contrast was truly dramatic when the comparative frame is extended back ten years. In 1951, the large banks had funded themselves through a captive audience and earned low but safe returns on government bonds. By 1961, a large bank was a very different entity indeed.

Because the large banks played such a central role for the financial system, their recomposition percolated quickly through almost the entire financial system. It was a shock that forced actors to reconsider their roles and the norms that governed their interactions. Non-financial firms had traditionally nurtured long-term relationships with banks in which both sides

forewent some short-term profits. As non-financial firms issued money-market instruments, this relationship was disturbed a first time; as banks issued money-market instruments and competed in that market with the non-financial firms, a second time.

The challenge to redefine patterns of interaction was even more profound in the case of securities firms. Under the New Deal system, they had been clearly set off from commercial banks. The relationship was mostly one of customer–client. When securities firms began to issue repos in the 1950s, they also became competitors to the banks. When banks began to issue negotiable certificates of deposit in the 1960s and depended on securities firms for making the market that ensured the instruments’ moneyness, a new form of competition and mutual dependence was layered on top of an already complex relationship.

Market actors realized that the money markets, as they stood, led participants to take more risk during good times and undermined the safety mechanisms that had traditionally cushioned crises. But there was no mechanism through which these concerns could have been translated into action. The governance of the money markets remained a byproduct of changes that had not been collectively planned. Over the course of the 1960s, the gap between economic activity and governance capabilities grew as U.S. banks became dominant in an additional money market (so-called eurodollars traded in London) and created yet another money market domestically (commercial paper that banks issued through holding companies). The generally benign economic conditions of the 1960s allowed financial actors to leave the issues unresolved. As the next chapter will show, the tensions that had been building up would explode in the 1970s.

Chapter 4: The Money-Market Crisis of 1974

Introduction

The previous two chapters have examined the growth of the money market during the 1950s and 1960s. Throughout these decades, market actors discussed the possibility of a crisis in the new market. Yet no governance changes were made to prevent such a crisis. This chapter explores the events of 1974, when the first major money-market crisis happened.

The money market provided a social context in which panic could spread easily. Many money-market investors treated the instruments that they owned just as they treated a deposit in a bank: they were sure that its value would be stable. Investors did not spend much time or effort on screening issuers of money-market instruments. Once negative information about an issuer became known, confidence could evaporate suddenly. Because there existed (in normal times) a liquid market for the instruments, owners of an instrument issued by a firm that had become the target of rumors were tempted to sell it immediately. Very soon, the surfeit of sellers would drive down the value of the instrument, and it was quite possible that the market for the instrument

would freeze: there would be no buyer at any price. In such a moment, what had seemed to be money came to be seen as (bad) credit.

Once owners of money claims had become skeptical about one firm, they were likely to draw other, similar issuers of money claims into doubt as well. The benefit of moving out of such money claims and into safer ones appeared as potentially huge: it could protect funds that were needed within a week or even the next day. The costs of the move were small: foregoing the interest rate differential that not-as-safe issuers paid over the safest issuers, such as the largest banks.

While the money market possessed no governance mechanism to cope with a crisis, it was connected to the banking system, which did, but only for a traditional crisis. It was this complicated context in which the 1974 crisis could unfold as dynamic process full of ambiguous interpretations, veiled actions, and unintended consequences.

The money claims that banks issued outside the money market, i.e., their traditional deposits, were protected by the Federal Deposit Insurance Corporation. The money claims that banks issued in the money market, e.g., their negotiable certificates of deposit, were not, at least not under the standard interpretation of the law. Banks could receive an emergency loan from the Federal Reserve at the discount window if the Fed judged them solvent. The money claims issued by *nonbanks* were not insured by the FDIC, and nonbanks did not typically have access to the discount window. However, nonbanks traditionally had long-running relationships to commercial banks that came with an expectation of credit provision during hard times. If a bank or nonbank struggled to redeem the money claims that it had issued in the money-market, would the traditional safety mechanisms be extended to these new instruments?

When Penn Central, a large railway company and major issuer of commercial paper, went bankrupt in 1970, the Federal Reserve feared that panic would spread to other issuers of money-market instruments, in particular to Chrysler (Gorton 2012:84–85; Woodworth 1972:96). The Fed pressured the largest banks to lend to firms that found it difficult to roll over their funding in the money market, and provided the banks with the necessary funds to do so through the discount window (Brimmer 1989:5–7; Maisel 1973:5–10, 37–45, 122). This was an innovative adaptation of the old crisis-management partnership between the central bank and the largest commercial banks. It was also its last hurrah.

In 1974, money-market investors lost confidence in Franklin National Bank, which was one of the 20 largest banks in the U.S. and a member of the New York Clearing House, and in a number of regional banks. Drawing on unusually fine-grained archival data from the Federal Reserve and the NYCH that has become available in 2018 and 2016, respectively, I will argue that the management of the crisis was conditioned by the Federal Reserve's attempt to hide from the public the events in the money market and instead to frame the crisis, in its presentations to the public, as a traditional crisis of a bank that had made losses on its investments. During the 1950s and 1960s, the money markets had developed outside the purview of the public, mostly as a matter of convenience. For example, the Clearing House *had* attempted to make certificates of deposit redeemable before maturity by way of lobbying, and only after this effort failed did Citibank achieve the same result by way of an innovative private contract. Now the public was purposefully being kept in the dark about the money market.

Another important difference to the rise of bank-driven money markets in the 1960s was that, in 1974, the Federal Reserve and the major banks did not pull in the same direction. The Fed sought to stabilize the money markets and tried to enroll the Clearing House in its efforts.

Yet the Clearing House members, other than Franklin National Bank, benefited from the flight to safety in the money market, which provided them with cheap funding, and they did not feel bound by any norm to help Franklin or stabilize the money market. In this chapter, I will show how the Clearing House members exploited that the Fed was using a different frame for the crisis in its communications to the public than behind the scenes. In a dynamic process, the banks walked the Fed down the path to a crisis resolution that was in their interest.

The 1974 Crisis in Two Frames

After a decades-long career in finance, Joseph Barr had retired to a farm in Virginia when, in the summer of 1974, he was called back to New York City. Several banks teetered on the edge of failure, and Barr was to steer the most prominent of them, Franklin National Bank, through the crisis. On Barr's first day in office, Franklin announced the largest quarterly loss ever incurred by a U.S. bank. The events of the following day exemplify how actors can change the frame through which they make sense of a crisis. As Barr would later recollect, "I kept glued to the communication net we had established with the branches waiting for the news that mobs were breaking down the doors to get their money. [...] But nothing happened" (Barr 1975:304). Yet when Barr consulted FNB's accountants, he learned that the bank had lost considerable funds. As he tried to make sense of this paradox, Barr had a novel insight: "the run on Franklin was a 'financial run,' not the classic run in which people, companies, and institutions rush to the bank to get their money out before it fails. By a 'financial run' I am referring to a run by U.S. banks, by large corporations, and by companies or banks holding dollars outside the U.S." (Barr 1975:302). It was a run through the money market.

This new frame remained inaccessible to the public. The *New York Times* sent a reporter to the Wall Street branch of Franklin. He counted the few people who withdrew cash at the teller window and reported that there was no bank run.¹⁶⁷ What he did not observe were the frantic phone calls in Franklin's back office as large investors withdrew their funds. The money market, through which the financial run took place, was effectively inaccessible to the public: it possessed no central exchange, no spokesperson, and no publicly available prices. It had come into being over the previous three decades in a silent revolution away from the public eye, and that is where it stayed throughout the crisis.

Acquiring the Money-Market-Run Frame

During the crisis of 1974, the Federal Reserve deepened its knowledge about the money market and developed a frame that allowed it to monitor the run through the money market. An important reason for why the Fed could do so was that, once the crisis began, the regulated volunteered information about the events on the money market. But the availability of such information alone did not suffice, as the case of another regulator shows: throughout the crisis, the FDIC stuck to its old frame.

As the financial system came under stress in May 1974, market participants alerted the Fed to the problems. On May 10, the Fed received a call from a Wall Street analyst reporting “that the market was in ‘complete disarray.’ There were adverse rumors floating around about ‘almost any’ bank [...] Stressing he was not talking about Franklin National, whose bad fortunes were well-known earlier in the week, he said rumors were flying about such bank[s] as: First

¹⁶⁷ George Vecsey, “Bank Branch Gets Patrons’ Loyalty”, *New York Times*, May 14, 1974.

Chicago, Citicorp, Seattle First, Barnett, Marine Midland, NCNB.”¹⁶⁸ As the crisis progressed, the Federal Reserve collected new types of data in several ad-hoc surveys, for example of major money-market dealers,¹⁶⁹ banks across the U.S., and—in great depth—in interviews with senior officials at four major New York City banks.¹⁷⁰

The Fed was able to develop the new frame around the run through the money market because it recombined its existing administrative capacities as both central bank and bank regulator. As central bank, the Fed implemented its monetary policy through the money markets. Every day, the trading desk of the Federal Reserve Bank of New York bought and sold high-quality money-market instruments in transactions with the largest market participants, the so-called primary dealers (Lindow 1972:81, 141). The expectation was that arbitrage would do the rest, spreading interest rate changes from these transactions to lower-quality money-market instruments and smaller market participants, until interest rates across the financial system approached the goals set by the Federal Reserve’s Open Market Committee (FOMC) in Washington, DC (Mehrling 2011:27).

During the crisis, all the details of the money market that the Fed could ignore during normal times burst out of the black box. The Fed was able to adjust its framing because it merely had to deepen its existing familiarity with the market. Working on a Sunday—May 12—Fed staffers painted a picture of the money market that differentiated between its different parts and various participants, and predicted the next stage of the crisis with striking accuracy:

¹⁶⁸ Samuel B. Chase, Jr. and Edwin M. Wess to Board of Governors, May 12, 1974, Box 173, Folder 7, Andrew F. Brimmer Papers (hereafter, Brimmer Papers), Baker Library, Harvard University.

¹⁶⁹ James L. Kichline, “Special Financial Markets Briefing,” June 3, 1974, p. 4, Box 173, Folder 5, Brimmer Papers.

¹⁷⁰ Edward C. Etting to J. Charles Partee, July 11, 1974, Box B89, Folder “President – Meetings with, 7/11/74 and 8/20/74,” Arthur F. Burns Papers (hereafter, Burns Papers), Gerald R. Ford Presidential Library; A.S. Nissen to Mr. Debs, July 15, 1974, Box B89, Folder “President – Meetings with, 7/11/74 and 8/20/74,” Burns Papers.

If such an atmosphere prevails on Monday, it seems distinctly possible that corporate treasurers and other investors in large CDs and bank holding company commercial paper will shift their investment preferences radically. This would probably be manifested in a move toward Treasury bills, a shortening of CD and commercial paper maturities, and increased selectivity (rational or not) in placement of funds with banks and bank holding companies. Eurodollar deposit availability would become very shaky in such an atmosphere. The nonbank commercial paper market, and particularly the market for documented discount notes, would almost surely be dragged along were such a chain of events to be set in motion.¹⁷¹

As the crisis dragged on for months, the Fed refined its understanding of the money market and began to compile new statistics. In June, for a “Special Financial Markets Briefing,” a Fed staffer calculated measures for the stress in the money market, e.g., the risk premium for certificates of deposits with a maturity between 60 to 89 days over a 3-month Treasury bill, and of medium-grade over high-grade commercial paper.¹⁷² The briefing also reported where the money market had frozen: “virtually no sales of [lowest grade paper] are taking place.”¹⁷³

The second arm of the Federal Reserve, banking regulation, traditionally did not see the money market but only individual banks. Its frame had been set with the New Deal regulation, hence the data regularly collected on Franklin National and other banks included the quality of their assets and the size of their retail deposits.¹⁷⁴ In the crisis, as the Fed realized how strongly the banks had come to rely on the money market, this data no longer proved helpful. Already on May 6, the head of banking regulation at the Fed Board described access to the money market as a pressing issue for FNB: “A major problem in the bank will be probably be liquidity. Over half of the bank’s funds are interest sensitive funds, including large denomination CD’s, securities sold under repurchase agreement, and Fed funds sold. To pay the repos the bank would have to

¹⁷¹ Samuel B. Chase, Jr. and Edwin M. Wess to Board of Governors, May 12, 1974, Box 173, Folder 7, Brimmer Papers.

¹⁷² James L. Kichline, “Special Financial Markets Briefing,” June 3, 1974, p. 4, Box 173, Folder 5, Brimmer Papers.

¹⁷³ *ibid.*, p. 2.

¹⁷⁴ Mr. Lawrence to Board of Governors, May 12, 1974, Box 173, Folder 7, Brimmer Papers.

liquidate all U.S. and corporate investments. Were the bank then to experience a run-off of CD's it would be confronted with a severe liquidity problem."¹⁷⁵

By May 20, the Federal Reserve staff had created ad-hoc statistics detailing how strongly the 50 largest U.S. relied on the money market. This data was so different from existing statistics that it did not fit into one of the many existing statistical forms at the Federal Reserve, and seen as so urgent that Fed officials did not even take the time to type it up but provided it in handwriting to Fed governor Andrew F. Brimmer. The new statistics showed that FNB had relied for ca. 30 percent of its funding on the money market, higher than the average across the banks of ca. 20 percent, but there were also some banks for whom it went up to around 40 percent.¹⁷⁶ Between May and August, the Fed was approached by several regional banks that had trouble funding themselves on the money market.¹⁷⁷ Importantly, the Fed did not interpret these issues primarily as problems of individual banks but as signs of the "general uneasiness in the Eurodollar market" and other money markets.¹⁷⁸

A brief look at a counterfactual shows that the availability of information about the money market from the regulated was not sufficient for a regulator to adopt a new frame. The FDIC had access to similar information as the Fed, but stuck to the conventional framing of asset

¹⁷⁵ Brenton C. Leavitt to Board of Governors, May 6, 1974, Box 173, Folder 8, Brimmer Papers.

¹⁷⁶ Gerald A. Hanweck to Andrew F. Brimmer, May 20, 1974, Box 173, Folder 5, Brimmer Papers. These data covered only the domestic money-market borrowing by the largest U.S. banks. On plans to similarly capture their eurodollar borrowing, see R. H. Mills Jr. and Robert F. Gemmill to Committee on Financial Statistics, May 22, 1974, Box 173, Folder 5, Brimmer Papers.

¹⁷⁷ American Bankshares Corporation: John E. Ryan to Board of Governors, May 24, 1974, Box 173, Folder 7, Brimmer Papers; Fidelity: Brenton C. Leavitt to Board of Governors, July 5, 1974, Box 173, Folder 6, Brimmer Papers; First Maryland: Brenton C. Leavitt to Board of Governors, June 11, 1974, Box 173, Folder 5, Brimmer Papers; National Bank of Detroit: J. E. Ryan to Board of Governors, August 9, 1974, Box 173, Folder 6, Brimmer Papers.

¹⁷⁸ J. E. Ryan to Board of Governors, August 9, 1974, Box 173, Folder 6, Brimmer Papers.

losses in individual banks.¹⁷⁹ As the deposit insurer, the FDIC did not have an equivalent to the Fed trading desk and hence much less familiarity with the money market. Its framing was also less influenced by economists, who in the Fed repeatedly overrode protestations from the legal department,¹⁸⁰ and more by lawyers, in particular FDIC chairman Frank Wille, “an almost obsessively methodical and scrupulous attorney.”¹⁸¹ Fittingly, a Fed task force drawing lessons from the crisis of 1974 criticized the FDIC for not paying sufficient attention to “the larger issue of the stability of the financial markets,”¹⁸² while the FDIC’s head of research argued in a crisis postmortem that “it is irresponsible to argue that the FDIC can simply ignore existing law” (Horvitz 1975:600).

Hiding the Money-Market-Run Frame from the Public

The Federal Reserve hid the money-market frame from the frontstage. Instead, it framed the crisis in its communications with the public in conventional terms. Its important first press release during the crisis, which was printed verbatim by the *New York Times*, did not mention the money market. Instead, it framed the crisis as limited to Franklin National Bank and resulting from that bank’s losses.¹⁸³ This frontstage framing continued throughout the crisis. As a financial

¹⁷⁹ Albert L. Kraus, “What happens after Franklin?”, *Euromoney*, June 1974, pp. 68–69.

¹⁸⁰ For example, the warning about “extensive litigation” reported by Brenton C. Leavitt to Board of Governors, June 4, 1974, Box 173, Folder 5, Brimmer Papers.

¹⁸¹ Chris Welles, “The Needlessly High Cost of Folding Franklin National”, *New York*, November 18, 1974, pp. 71–81, here p. 75.

¹⁸² Task Force for Reforming the Structure of Regulatory Agencies Supervising Banking Organizations and Related Depository Institutions to Committee on Regulations, Bank Supervision and Legislation, September 25, 1974, Box B7, Folder “Bank Regulatory Reform, October 1974,” Burns Papers.

¹⁸³ Anon., “Reserve Comments on Bank Case,” *New York Times*, May 13, 1974.

journalist summarized a speech by the Fed chairman in the summer of 1974, “Burns’ assessment of the financial structure [...] was, in effect, yes, there are problems, but Franklin National was an isolated situation brought on by inadequate management. The financial structure of the country is sound.”¹⁸⁴ In a major speech in October, Burns said that the New Deal laws were still sufficient: “The ability of our financial system to absorb such shocks reflects credit on the safeguards that Congress has developed in response to past experience.”¹⁸⁵

During the crisis, archival evidence shows, the Federal Reserve deliberately withheld information from Congress and the public that would have disclosed the severity and novelty of the crisis. In a letter to the head of the German central bank, Burns discussed the possibility that details of the crisis management could “be drawn into the political arena at a high level” and called it “a development [...] of [...] deep concern.”¹⁸⁶ Joseph Barr closed all his proposals to the regulatory agencies with the sentence: “There will be no distribution made to the Congress or to the press.”¹⁸⁷

The Fed’s decision to hide the money-market framing from the public was importantly motivated by its desire not to deepen the financial crisis. Already in the very earliest stages of the crisis, the Fed mulled how the financial markets would react to its statements (Brimmer 1976). At the height of the crisis, Burns confided in Barr: “I [...] think I am sitting on a volcano that

¹⁸⁴ Albert L. Kraus, “Capital market questions after Nixon,” *Euromoney*, September 1974, pp. 56–57, here p. 56.

¹⁸⁵ Burns, Arthur F. “Maintaining the Soundness of Our Banking System.” Address at the 1974 American Bankers Association Convention in Honolulu, Hawaii, October 21, 1974, <https://fraser.stlouisfed.org/title/449/item/8020>, accessed on December 11, 2017.

¹⁸⁶ Arthur F. Burns to Karl Klasen, August 8, 1974, Box B56, Folder “Herstatt Bank,” Burns Papers.

¹⁸⁷ Joseph W. Barr to Frank Wille, September 26, 1974, Drawer 22, Folder 57, William E. Simon Papers (hereafter, WES), Lafayette College, David Bishop Skillman Library.

could blow up at any time and blow this economy apart in the process!”¹⁸⁸ After a meeting with President Richard Nixon, Burns noted in his diary: “I [...] remarked that what happened in that bank [FNB] was largely typical of what the larger banks have been doing – living off purchased money [...] I concluded by saying that basic reforms in banking are needed, that present however is hardly the time for carrying through more than a [little?] in this direction. Markets are too nervous to absorb the necessary reforms.”¹⁸⁹

In deciding to put frontstage a conventional framing, the Fed was also motivated by political concerns. A “strictly confidential” contingency plan for a financial crisis drawn up by Fed staff in 1970 predicted that the executive would find itself “in an extremely hot situation.”¹⁹⁰ Not only did the Fed in 1974 face questions about why it had not avoided the crisis, it could also be made responsible for many actions during the crisis. The regulators became deeply involved in decisions, e.g., rewriting FNB’s draft press releases.¹⁹¹ After the 1974 crisis, Barr said: “I really do not blame Arthur Burns for getting excited. As an old government hand I can imagine the difficulty of explaining to a series of Congressional Committees just how they got themselves into such a mess” (Barr 1975:313). Avoiding blame was interwoven with skepticism about the expertise of the public and its elected officials. According to the Fed’s contingency plan for a

¹⁸⁸ This was later reported by Barr (1975:308; similarly earlier p. 305).

¹⁸⁹ Arthur F. Burns’ diary, journal II (blue notebook), entry for June 24 [1974], pp. 229–230, transcribed by the Gerald Ford Library, <https://www.fordlibrarymuseum.gov/library/document/0428/Burnstranscript2.pdf>, accessed April 21, 2019. Final square brackets inserted by Gerald Ford Library staff, all other square brackets inserted by the author.

¹⁹⁰ Robert Solomon to Arthur F. Burns, December 10, 1970, p. 18, Box B34, Folder “Eurodollars, November–December 1970,” Burns Papers.

¹⁹¹ Matthew G. Herold, Jr. to Alfred Hayes, June 5, 1974, Box 173, Folder 5, Brimmer Papers; Brenton C. Leavitt to Board of Governors, June 11, 1974, Box 173, Folder 5, Brimmer Papers; Matthew G. Herold, Jr. to Harold Gleason, June 18, Box 173, Folder 5, Brimmer Papers.

financial crisis, “[t]he mood of Congress in this situation, it seems safe to surmise, would [...] not be dissimilar from the reactions of a beehive split open with the sudden blow of a heavy stick: violently roused from familiar behavior patterns, uncertain where to turn, but worked up and looking for something to sit on and sting.”¹⁹² The press was seen as worse: “Apart from a handful of the more sophisticated papers with able financial staffs, the press in this country will have still less of a grip than Congress on why the crisis has arisen and what should be done about it.”¹⁹³

In 1974, the press indeed was unable to see the crisis in the money market. Much more prominent in public discourse was a framing of the crisis as caused by foreign exchange losses. When the crisis arrived on the evening news, on May 13, Walter Cronkite highlighted that FNB “revealed that it had lost more than 14 million dollars in unauthorized foreign currency [...] transactions in the last 6 weeks.”¹⁹⁴ An influential *Fortune* article—cited by other journalists and included in the Congressional record—similarly stressed FNB’s losses in foreign exchange transactions.¹⁹⁵ The foreign-exchange framing connected the crisis to salient political debates over currency volatility shortly after the collapse of Bretton Woods (Helleiner 1994).¹⁹⁶

Even more prominent, however, was a frame that limited the crisis to FNB and its scandalous owner. The bank was “a media natural” (Barr 1975:305). In the early 1970s, it was

¹⁹² Robert Solomon to Arthur F. Burns, December 10, 1970, p. 5, Box B34, Folder “Eurodollars, November–December 1970,” Burns Papers.

¹⁹³ *ibid.*, p. 6.

¹⁹⁴ CBS *Evening News*, May 13, 1974.

¹⁹⁵ Sanford Rose, “What Really Went Wrong at Franklin National,” *Fortune*, October 1974, pp. 118–121, 220–227.

¹⁹⁶ The framing centered on “the vulnerability of banks to foreign exchange losses in the new era of floating exchange rates” (Spero 1980:4) is at the heart of the only monograph on the 1974 financial crisis (Spero 1980) and continues to dominate scholarly accounts of the crisis (e.g., Grossman 2010).

the first bank in decades to have joined the ranks of the prestigious New York Clearing House. It had grown from humble beginnings on Long Island as the antithesis of the Wall Street banks. Franklin provided free lollipops to the children of its customers during sugar rationing in World War II, and free parking after the war—at the time an innovation that rankled the OCC. Journalists nicknamed Franklin the People’s Bank and wrote about it for *Reader’s Digest* and *Newsweek*; a famous radio correspondent broadcast a show from one of the bank’s offices (Hubbard 1995:223–31). The story of Franklin took a dark—and, for the public, intriguing—twist when, in the early 1970s, the Italian businessman Michele Sindona took a controlling share of FNB stock. Journalists investigated Sindona’s links to the Mafia and high-placed politicians. After the crisis, Sindona pretended to be kidnapped, reemerged near Times Square with a bullet wound in his leg, and died in prison, allegedly of poisoning.

Against such a salacious narrative, the rare attempts to alert the public to the problems in the money markets were condemned to obscurity. Wright Patman, the chair of the House Banking Committee and a critic of the Federal Reserve and of banks, was one of the few people outside the financial system and the executive branch who had an idea of their importance of the money markets. In a press release on May 13, Patman wrote: “Franklin National is one of the big banks which took advantage of the Federal Reserve’s promotion of high interest certificates of deposit. These misguided policies helped push many large banks into CD’s in heavy amounts and I am sure this is one of the problems which the Federal Reserve is attempting to bail out at Franklin National now. So we are seeing not only a bail-out of Franklin National, but a bail-out of misguided monetary and banking policies pursued by the Federal Reserve System.”¹⁹⁷

¹⁹⁷ Press release, Box 504A, Folder “5/13 Statement on Franklin National,” Wright Patman Papers (hereafter, Patman Papers), Lyndon B. Johnson Presidential Library.

Many newspapers printed excerpts from Patman's press release but omitted the passage about the money market.¹⁹⁸ As the crisis went on, Patman was stymied in his ability to solidify the claims about the money market. He criticized the regulatory agencies for acting "in secret."¹⁹⁹ His committee "lack[ed] the independent sources of information and the staff resources to cope effectively and autonomously with [its] responsibilities" (Salamon 1975:xv), and so Patman's hunch about a run on the money market remained unsubstantiated and unnoticed.

Rescuing the Money Market in the Shadow of the Public

As it hid the money-market framing from the public while the regulated were aware of it, the Fed found itself caught in the middle. It took the possibility of asking Congress for new crisis-management tools off the table and hence constrained itself. Its attempts to enroll the regulated in crisis management came to little. There was no organization representing the money market that was capable of collective action. The Fed sought to enroll the NYCH, which possessed the capacity for collective action but comprised only banks that benefitted from the crisis, which only hit smaller money-market participants. The Fed ended up stretching existing tools to their legal limits (and arguably beyond those limits), taking considerable risk and setting a potentially dangerous precedent.

¹⁹⁸ Articles in the May 14, 1974 issues of *Jersey Journal*, *Dayton Journal Herald*, and *Cincinnati Inquirer*.

¹⁹⁹ Press release, Box 504A, Folder "5/13 Statement on Franklin National," Patman Papers.

A Failed Attempt to Enroll the Regulated: The Proto-Funding Facility

Because the Fed internally framed the events of 1974 as a crisis that had jumped the tracks of pre-existing categories, it concluded that the tools at its command were not sufficient to solve it. If the problem was the freezing of the money market, some way had to be found to unfreeze that market so that banks that were shut off from it could use it again as a source for their desperately needed funding. Within days of the beginning of the crisis, Fed officials internally discussed the idea “[t]hat we essentially back stop or guarantee Fed Funds purchases.”²⁰⁰ The idea was, as Fed Governor Bucher put it, “that the resumption of federal funds trading would have a very positive psychological effect upon the financial community.”²⁰¹

The existing crisis-management tools, however, had been designed for a financial systems in which banks funded themselves not through the money market but through retail deposits. These tools did not allow the Fed to backstop the money market. One way to gain that ability—the one that would have been recommended by civics textbooks—was to ask Congress to grant the Fed the necessary statutory authority. The archival record, however, contains no indication that the Fed even considered such a step. Asking Congress for a new crisis-management tool would have required the Fed to disclose the new framing, with all the potential negative consequences elaborated above. In particular, the Fed’s skepticism that Congress could be convinced to change the law proved well-founded during the crisis, when Barr tried to lobby Congress to extend the range of banks that would be allowed to buy FNB. The Fed was skeptical of his chances of success, and indeed the effort failed (Barr 1975:307–10). Congress was

²⁰⁰ Brenton C. Leavitt to Board of Governors, May 16, 1974, Box 173, Folder 9, Brimmer Papers.

²⁰¹ Clearing House Committee Minutes, June 5, 1974, p. 72, CM 14.

gridlocked on banking politics and had not passed any major financial reform in the last 20 years (Salamon 1975; Worsham 1997).

With an extension of its legal mandate off the table, the Fed sought to enroll the regulated in a rescue of the money market. But the money market had neither a central exchange like the stock market nor an association of participants like the derivatives market (Carruthers 2013; Morgan 2008; Riles 2011). The closest thing to a representative of the market was the trade magazine *Euromoney*, but it was published no more frequently than every month and did not allow for confidential communications. There simply was no way for the Fed to negotiate with the money market, much less to enroll it in a concerted course of action.

The counterpart that the Fed decided to engage with was the New York Clearing House. It was not representative of the money market, only of its top-most echelon, but was capable of collective action. On June 5, two governors of the Fed Board traveled to New York and called the NYCH Committee into a secret meeting. Governor Holland told the CEO's of the major commercial banks that "there was an urgent need to devise an interim federal funds support program."²⁰² Bucher gave "a discourse on the need for public spirited action by the large New York City banks."²⁰³ Yet that public-spirited action was not forthcoming. The banks were willing to participate in the scheme only if the Fed guaranteed the entire package, insulating them against any loss. The bankers also cut the package to half its size.²⁰⁴ The proto-funding facility in its final form was too small to stop the run in the money market (Zweig 1995:452).

²⁰² *ibid.*, p. 72.

²⁰³ *ibid.*, p. 73.

²⁰⁴ Brenton C. Leavitt to Board of Governors, May 16, 1974, Box 173, Folder 9, Brimmer Papers.

The NYCH could afford to limit its contribution to the Fed's effort to stabilize the money market to a symbolic minimum because its members were hardly impacted by the instability in that market or even benefited from it. As one financial journalist remarked: "Paradoxically, the Franklin situation has helped the Chase as well as other large banks."²⁰⁵ As money-market investors moved their funds out of Franklin and other medium-sized and small banks, they moved many of them to the largest banks. In contrast to bank runs of the traditional type, with retail depositors running, wholesale investors could not withdraw their investment and store it as cash. Because of the size of their holdings, the treasurers of large industrial companies and the managers of pension funds had to invest them with someone in the money market, and aside from short-running government securities, the money-market instruments of the largest banks seemed the safest investments. As smaller banks struggled to get their hands on any funding at all, the NYCH banks were provided with plenty of funds and only had to pay low interest rates for them.²⁰⁶

Regulators Taking on Extraordinary Risks: Repurposing the Discount Window and Deposit Insurance

Without an extended legal mandate and without significant support from the regulated, the regulators found themselves faced with the choice between allowing a breakdown of the money market or taking on dramatic risks themselves through outdated, ill-fitting tools. They chose the latter strategy. While the Fed could not intervene in the money market directly, it could

²⁰⁵ Albert L. Kraus, "Observation posts: New York," *Euromoney*, November 1974, p. 62.

²⁰⁶ In addition, the NYCH members had stopped lending to FNB well before the crisis began (Brenton C. Leavitt to Board of Governors, May 13, 1974, Box 173, Folder 9, Brimmer Papers. Similarly Testimony of Dennis Weatherstone (Morgan Guaranty). Printed in *Oversight hearings into the effectiveness of Federal bank regulation (Franklin National Bank failure): hearings before a subcommittee of the Committee on Government Operations, House of Representatives, Ninety-fourth Congress, second session, 1976*, pp. 109–116, here pp. 110–114.)

loan money to banks, and these banks could use the funds to pay off their money-market debts as they matured. In this way, the Fed hoped to convince money-market investors that their funds were safe, so that they would become willing to lend again. Such a course of action was indeed demanded openly by a U.S. banker writing in the August issue of *Euromoney*: “Ironically, the process of a restoration of confidence could be initiated by the failure of another bank coupled with immediate central bank action to support it.”²⁰⁷

For the time being, the focus of the Fed’s strategy was on Franklin National Bank, the largest bank to experience a run through the money market. From May on, it was unable to raise new funds in the money market. Those money-market investors who had earlier provided funds to Franklin for maturities of several weeks or months were anxious whether they would receive their funds back. Fed officials approached Franklin’s money-market debt with the understanding that their actions in this case “will be regarded by outsiders as a tipping of the Federal Reserve’s hand.”²⁰⁸

The Fed decided to protect the money-market investors from losses even though that required it to lend to Franklin when doing so was stretching the law to its limit, or beyond. According to the statutes, the Fed was allowed to provide emergency loans to a bank, through the so-called discount window, only when that bank was solvent and could provide high-quality collateral. As early as May 14, however, the Fed Board’s head supervisor entertained the possibility that FNB was insolvent.²⁰⁹ In June, officials at the Federal Reserve Board noted that their colleagues at the Fed of New York, “whenever their loan gets up to about \$1.3 billion [...]

²⁰⁷ Bill Banker, “Spot the knave ... the latest Europroblem,” *Euromoney*, August 1974, p. 15.

²⁰⁸ Sam Chase to Andrew F. Brimmer, May 22, Box 173, Folder 5, Brimmer Papers.

²⁰⁹ Brenton C. Leavitt to Board of Governors, May 15, 1974, Box 173, Folder 9, Brimmer Papers.

have a queasy feeling about the collateral coverage.”²¹⁰ From July on, the Fed provided Franklin with additional discount-window credit even though Franklin could provide only low-quality collateral.²¹¹ Fed governor Andrew Brimmer would later suggest that avoiding a meltdown of the money market was more important than following the letter of the law: “in financing Franklin’s needs for the five months when the Federal Reserve knew that Franklin would ultimately fail, the System had its eyes on a range of considerations extending well beyond Franklin” (Brimmer 1976:109–10).

For all its leniency in extending the emergency loan, the Fed could not do so indefinitely. The discount window is a temporary tool, and keeping it open for six months was already pushing its boundaries. The size of the emergency loan and Franklin’s continued business problems made it inconceivable that the bank would be able to pay back the Fed’s loan in the near future. In such a situation, the law called for the FDIC to step in. It could decide between two lines of action. The standard option was to liquidate the bank, which meant paying out insured deposits and defaulting on uninsured deposits. Under special circumstances, however, the FDIC could instead sponsor a merger of the troubled bank with a healthy bank; in this case, all deposits (not only the insured ones) would be paid out.

By October, most of Franklin’s money-market investors had received their funds back thanks to the Fed’s emergency loan, but some money-market investors (those who had loaned to Franklin for longer than six months) still had their funds in the bank. These funds—typically millions of dollars—were either not protected at all by deposit insurance or only up to a limit that

²¹⁰ Brenton C. Leavitt to Board of Governors, June 7, Box 173, Folder 5, Brimmer Papers; see also Brenton C. Leavitt to Board of Governors, June 21, 1974, Box 173, Folder 5, Brimmer Papers; and Brenton C. Leavitt to Board of Governors, July 1 and 2, Box 173, Folder 6, Brimmer Papers.

²¹¹ Steven M. Roberts to Andrew F. Brimmer, July 24, 1974, Box 173, Folder 6, Brimmer Papers.

had been set with retail depositors in mind. Noting that “the FDIC insurance in a simple liquidation applies only to the extent of \$20,000 of depositors’ funds,” deputy secretary of the Treasury Stephen Gardner warned that a liquidation of Franklin “could have enormously disruptive effects” on the money market.²¹² Treasury Secretary Bill Simon said in a confidential meeting that “it was unthinkable that we would permit the bank to be liquidated.”²¹³ The Fed and the Treasury sought a solution that “will pay out the full amount of deposit liability or assure its safety.”²¹⁴

Yet the FDIC stuck to its traditional framing that ignored the money market. FDIC chairman Wille let it drop in a conversation with the CEO of a major bank “that an option was liquidation of FNB.”²¹⁵ By early June, the FDIC worked on a contingency plan to liquidate FNB and requested from the OCC, according to a memo, “information about insured and noninsured deposits.”²¹⁶ In his copy, Fed governor Brimmer underlined the words “insured and noninsured deposits.” For the Fed, this was distinction was fatal. It undertook its own analysis of the FDIC Act, trying to find the legal wiggle room to avoid a liquidation of FNB.²¹⁷

The Fed finally got the FDIC to forego a liquidation of FNB in favor of a merger, but not by convincing it of the money-market framing. The FDIC went along because the size of FNB would have overburdened its insurance fund. According to Wille, if the FDIC had paid out

²¹² Stephen S. Gardner to William E. Simon, October 8, 1974, Drawer 22, Folder 57, WES.

²¹³ Brenton C. Leavitt to Board of Governors, June 21, 1974, Box 173, Folder 5, Brimmer Papers.

²¹⁴ Stephen S. Gardner to William E. Simon, October 8, 1974, Drawer 22, Folder 57, WES.

²¹⁵ Brenton C. Leavitt to Board of Governors, July 8, 1974, Box 173, Folder 6, Brimmer Papers.

²¹⁶ Brenton C. Leavitt to Board of Governors, June 3, 1974, Box 173, Folder 5, Brimmer Papers.

²¹⁷ Baldwin B. Tuttle to Board of Governors, July 10, 1974, Box 173, Folder 6, Brimmer Papers.

FNB's creditors, it would have been doubtful whether the remaining small insurance fund would still have created confidence should another bank get into trouble.²¹⁸ A much smaller outlay by the FDIC sufficed to make a merger with Franklin attractive for a healthy bank. On October 8, FNB was bought by European-American Bank, a consortium of European banks eager to increase their presence in New York City. What remained of Franklin's money-market debt after the Fed's emergency loan was paid back as a consequence of the FDIC-assisted merger.

Conclusion

During the crisis of 1974, the Federal Reserve developed a thorough understanding of the run through the money market. Newly available archival evidence shows that Fed officials mapped the financial flows and learned to understand the market's dynamics well enough to predict the next stages of the run with stunning accuracy.

But the Fed did not share this new frame with Congress or the public. It was afraid that alerting the public to the existence of large sums of money claims at a moment when they were at risk would only deepen the crisis. The Fed also sought to avoid the political blame that would have come with the question of why it had not kept such a risky market from emerging and growing.

The Fed's hiding of the money-market run from Congress and the public conditioned its actions and the response from the large banks. The Fed effectively took off the table the option

²¹⁸ Frank Wille, "The FDIC and Franklin National Bank: A Report to the Congress and all FDIC-Insured Banks." Speech before the Annual Convention of the Savings Banks Association of New York State, Boca Raton, Florida, November 23, 1974. Printed in *Bank failures, regulatory reform, financial privacy: hearings before the Subcommittee on Financial Institutions Supervision, Regulation and Insurance of the Committee on Banking, Currency and Housing, House of Representatives, Ninety-fourth Congress, first session, on H.R. 8024, Part 2, 1975*, pp. 1038–1089, here p. 1052.

of asking Congress for new crisis-management tools, which would have better fit the money market. Instead, it tried to solve the crisis by enrolling the regulated in a backstage effort to stabilize the money market. But the money market had no representative capable of organizing collective action. The stand-in that the Fed chose—the New York Clearing House—was an impossibly difficult partner to convince of taking on risk to stabilize the system. The Clearing House members, other than Franklin, benefited economically from the flight to safety in the money market, and did not feel a responsibility to share the burden of stabilizing the system.

When the regulated resisted, the Fed bailed out Franklin—a decision that could be explained to the public in a conventional frame but that insiders understood as the repurposing of an old crisis-management tool for the new goal of stabilizing the money market. Together with an FDIC-assisted merger, the Fed’s extension of emergency credit allowed Franklin to redeem all the money claims that it had issued. If this was what crisis meant, the market participants wanted more of it. A banker wrote in the trade magazine of the money market: “the process of a restoration of confidence could be initiated by the failure of another bank coupled with immediate central bank action to support it.”²¹⁹ As an unintended consequence of the three-way interaction between regulators, regulated, and the public, the crisis of 1974 entrenched the money market as the volatile center of the financial system.

This outcome was shaped by the specific social relations in the money market. While the Clearing House members in 1974 did precious little to stabilize the money market, they acted collectively and took large risks to stabilize the payment system, which also experienced a crisis in 1974. The payment system, CHIPS, had been set up in 1970 and was formally organized as

²¹⁹ Bill Banker, “Spot the knave ... the latest Europroblem,” *Euromoney*, August 1974, p. 15.

part of the Clearing House. The following chapter will explore the emergence of CHIPS and its crisis. It will retain many of the analytical interests of the previous chapters, but shift the focus from one function of money to another: from the store of value to the means of payment.

Chapter 5: The Private Payment System (1970s)

Introduction

The previous three chapters have described how private actors in the postwar period issued money-market instruments. These instruments served the store-of-value function of money. This chapter turns to the means-of-payment function of money. In 1970, the New York Clearing House set up a new private payment system: the Clearing House Interbank Payment System (CHIPS). It was used to clear and settle primarily the payments that resulted from transactions in dollars abroad, but also for large dollar payments within the U.S.

If money-market instruments already mainly served to undergird other transactions—they were, for example, used as a short-term transaction reserve in which to keep funds until the moment came to buy stocks—, the payment system was one step further removed from what is typically understood as economic decision-making. It served as the mechanism through which the actual flow of funds necessary to buy or sell money-market instruments or longer-term investments such as stocks took place. Even most bankers treated the payment system just like private citizens treat it: as a taken-for-granted infrastructure. We see a payment as “processing” in our online bank accounts and expect the process to be completed within a day or two, without much knowledge about or interest in what that process actually entails.

But infrastructure shapes the actions that are possible and, if it fails, can suddenly upend the edifices built on top of it (Carruthers 2015; Purdy 2018). Just like those edifices, infrastructure is the result of social action. This chapter traces the conflict and cooperation that led to the creation of CHIPS in 1970.

In the case of CHIPS, the two challenges for creating a new form of money—making it money-like enough for private actors and not too money-like for state actors—were rather easily overcome. The first challenge would have been a hurdle for other banks, and efforts by other banks to set up a new payment did indeed fail during the early 1970s. But the New York Clearing House members made so many payments to one another and carried out the payment function for so many correspondent banks that setting up a payment system with only Clearing House members as participants was already efficient and virtually certain to attract additional banks as participants. Indeed, many other large banks joined CHIPS even though the payment system gave the new participants negligible decision-making power compared to the Clearing House members.

The second challenge was overcome with even less effort by the Clearing House and would have been overcome just as easily by other banks. Payments were considered as so technical, so far removed from the redistribution of resources, that even the New Deal had done little to draw the payment system into the sphere of democratic decision-making. The Federal Reserve was operating a payment system (FedWire), but in addition to it there continued to exist a private, check-based payment system, with the New York Clearing House at its heart. When the NYCH set up CHIPS as a computerized and expanded system, there was no opposition from the state.

The creators of CHIPS as a new form of means-of-payment understood the challenge facing them as a rather mundane, technical one. It resulted importantly from the growth of new forms of store-of-value, in which the Clearing House banks had already played an important role. In the 1960s, the largest American banks had become major actors in the dollar-denominated money market in London and other foreign financial centers, the so-called eurodollar market. The large number of transactions in this market meant that the traditional paper-based system for settling and clearing foreign payments operated by the Clearing House threatened to collapse under a mountain of payment slips.

This technology-centered diagnosis of the problem displaced one centered on the economic consequences of the payment system. The economic view implied that the payment infrastructure was not merely technical but encoded fundamental decisions about the distribution of risk. In the payment-system crisis of 1974—sparked not by the problems at Franklin National Bank but those at a German bank, Herstatt—, these risks suddenly captured the Clearing House’s full attention.

Status Quo Ante: The Payment System in the Mid-1960s

By the late 1960s, the payment system for settle foreign transactions in dollars had been in place virtually unchanged for decades. When, in 1969, NYCH bankers looked into it, they were “unable to determine precisely the origin of our practices.”²²⁰

²²⁰ “Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 7, Folder “Nov. 24, 1970,” CF 11.

For example, the London branch of a Philadelphia bank might borrow eurodollars from the London branch of a French bank.²²¹ The French bank would send a telex to its correspondent bank in New York, say, Morgan Trust. The telex would instruct Morgan to pay from the French bank's account at Morgan into the account of the Philadelphia bank at its New York correspondent bank, say Citibank. At the next of the five daily exchanges at the NYCH, Morgan would give a check to Citibank. Citi would take the check to its headquarters and credit it to the Philadelphia bank. At the next NYCH exchange, Citi would present the check to Morgan. The check would become part of the computation of the liability of each member against the rest of the NYCH. Assuming that Citi had a net inflow of funds that day, it would receive in its account with the Federal Reserve Bank of New York federal funds from the Clearing House account at the Federal Reserve Bank of New York. According to the rules of the NYCH, the settlement on the books of the Federal Reserve would take place the day after the exchange of checks at the Clearing House.

An important feature of the system was that it effectively operated, as a Clearing House report put it, “with two types of money”²²²—a slower one for U.S. banks and a faster one for foreign banks. By custom, most NYCH member banks would allow their U.S. correspondent banks to use the funds only on the day of settlement on the books of the Federal Reserve. These domestic banks had “good money” (i.e., money that they could use for another transaction) the next day. In contrast, most NYCH member banks allowed foreign banks to use the funds already

²²¹ Anon., “Memorandum,” July 10, 1974, folder “July 1, 1974,” CF 12. In this example, I am leaving out the second part of the transaction (the payment from the Philadelphia bank to the French bank).

²²² Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 7, Folder “Nov. 24, 1970,” CF 11.

on the same day. The NYCH member effectively lent funds to the foreign bank for one day at an interest rate of zero.

Pressures on the Payment System from the Growth of the Eurodollar Market

This traditional payment system with the NYCH as the center of action came under stress in the late 1960s as the result of the growth of the money market, which was importantly driven by the NYCH member banks. There were many more payments to be made because there were many more money-market instruments being bought and sold, particularly in the eurodollar market. The eurodollar market is today “the most liquid money market in the world” (Mehrling 2011:25). It emerged in the interstitial space between national currencies and consists of dollars held outside the United States, predominantly in the United Kingdom. It was invented in 1957 through an interplay of London banks, the Bank of England, and communist countries—a convoluted story thoroughly researched by Burn (2006). In the 1960s, American banks came to dominate the market (Battilossi 2010; Helleiner 1994; Schenk 1998).²²³

²²³ For the U.S., the connection to the eurodollar market meant that the largest American banks circumvented many New Deal regulation and that safety features of the New Deal system no longer applied. During credit crunches in the U.S., for example, the largest New York banks could refinance themselves through London (Battilossi 2010:42). Up until the 1970s, the eurodollar was widely considered a mystery (Battilossi 2010:31, 37–39). For several years after 1957, there was not even a widely shared term to denote it. The market had been created in individual contracts. The currency was mainly traded in London, but the market was not regulated by the Bank of England. The Fed only learned of its existence after several months, even years, and sent two staffers on a reconnaissance mission to London. For several years, there was debate within the Fed over the character of this new market (Burn 2006). Only in the 1960s did the BIS begin to quantify the size of the market. The Bank of England knew of its existence and ignored it. When the OCC wanted to establish an office in London to regulate or at least monitor what U.S. banks were doing there, the Bank of England thwarted the attempt. In the 1970s, the Fed still had trouble acknowledging the eurodollar market in its everyday operations, even though it had by now become a major field of activity for U.S. banks. When the Fed designed forms for new reporting requirements on transactions in foreign currencies, the London branches of U.S. banks were not required to report their dollar position. NYCH member banks pointed out to the Fed that this data collection would leave out the greatest risk.

Understanding the Problem as a Technical One

As the pressures on the payment system mounted, actors used two different ways of understanding the problem. The first one was as a technical problem. In the extreme, there was talk in the 1960s of having technology companies operate the payment system. If it was all about the storage, retrieval, and transmission of data, would not IBM be a better fit than Citibank? Even within the banks, there were actors who understood the operation of the payment system primarily as making sure that pieces of paper were filled out correctly, moved around quickly, or replaced by digital entries in computers, which needed to run without crashing and communicate with one another without data loss.

It was in this technical sense that a committee of the NYCH concluded in 1969 that “particularly since the advent of the Eurodollar [...], the [payment] system has shown increasing strains and market participants have experienced mounting difficulties.”²²⁴ The Clearing House members incurred large payroll expenses for the manual handling of the checks involved in eurodollar transactions.²²⁵

The paperwork problem, already unpleasant during normal times, could become an existential threat if it caused a crisis, as the Clearing House members could observe at the New York Stock Exchange. The stock market experienced a boom during the 1960s, the so-called “go-go years” (Brooks 1973). As trading volumes rose, the back offices of securities firms were overwhelmed. They lost track of securities that they were supposed to receive from sellers or send to buyers. Most brokerage firms were small and did not possess much in the way of formal

²²⁴ Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 9, Folder “Nov. 24, 1970,” CF 11.

²²⁵ *ibid.*, p. 10.

management or business information systems. For decades, trading volumes had never risen for several years in a row, and the sustained growth of the 1960s could not be taken care of by traditional methods (Wells 2000). The securities firms hired more clerical workers, but they were paid so little and the workload was so heavy that turnover was high.

In April 1968, the securities industry invited the NYCH into an ad hoc committee to deal with the situation.²²⁶ In May 1969, the president of the New York Stock Exchange, Haack, attended a meeting of the NYCH Committee.²²⁷ The NYCH set up a Special Committee to Study the Securities Industry, which finished its report in March 1970.²²⁸

The back-office crisis of the securities industry lasted from 1967 until 1971. Attempts to solve the problem by introducing computers initially backfired because it was difficult to integrate the computers into the workflow. “Computers would eventually solve many of the industry’s record-keeping problems, but the process took longer and cost more than expected” (Wells 2000:211). Over the course of the crisis, 100 member firms of the NYSE—a sixth of the total—went bankrupt or were merged into other firms to avoid bankruptcy. The paperwork crisis sparked regulatory reforms that changed the stock market deeply, not always to the benefit of the incumbents (Moran 1991). As trading volumes on the eurodollar market rose, the NYCH had to contemplate the danger of a similar crisis in its payment system.

²²⁶ Steering Committee Meeting Minutes, April 11, 1968, p. 3, folder “April 11, 1968,” SF 5.

²²⁷ Clearing House Committee Meeting Minutes, May 28, 1969, p. 195, CM 13. See also John F. Lee attending a securities industry meeting (Steering Committee Meeting Minutes, August 8, 1968, p. 2, folder “August 8, 1968,” SF 5.)

²²⁸ Clearing House Committee Meeting Minutes, March 25, 1970, p. 220, CM 13.

Understanding the Problem as an Economic One

Another way of understanding the problem that faced the NYCH's payment system in the late 1960s was an economic one. The pieces of paper or entries in a computer were, from that perspective, merely representatives for economic resources. The speed and reliability of the technical operation had profound consequences for who controlled economic resources and who took on risks.

It was in this sense that a trade magazine for securities investors wrote in 1967 that "the American clearing house system of 'good-money' the next day is an archaic concept that has become an annoying monkey wrench in the foreign exchange markets and Eurodollar markets."²²⁹ U.S. banks felt at a constant disadvantage because, compared to foreign banks, they had to wait an additional day after selling an instrument before they could use the funds for another investment. They regularly asked the NYCH member bank with which they did business to provide the funds on the same day. Giving in to such requests by domestic banks and continuously providing same-day funds to foreign banks created a risk for the Clearing House banks. They received the covering funds only the next day. This led to large overdrafts for the member banks.²³⁰

This economic risk could be cushioned because all members of the NYCH had access to the Federal Reserve's discount window. The provision of emergency dollar liquidity by the central bank was the bedrock of the NYCH's ability to dominate the payment system for dollars

²²⁹ Article by F. E. Gynt in *The Weekly Bond Buyer* cited in Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association," n.d., p. 9, Folder "Nov. 24, 1970," CF 11.

²³⁰ Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association," n.d., p. 9, Folder "Nov. 24, 1970," CF 11.

traded abroad. In 1971, a Dutch bank sought to establish dollar clearing in Amsterdam, but the plan did not catch on.²³¹ Even if eurodollars were traded outside the U.S., market participants conceived of them as dollars and wanted them cleared in New York, with the (assumed) backstop of the Federal Reserve (Smedresman and Lowenfeld 1989:745). Even if the Dutch banks had set up a system that was more efficient, faster, and cheaper, they would not have been able to unseat the Clearing House.

Despite the pressures to provide same-day settlement, most transactions were still settled on a next-day basis in the late 1960s. This meant that the Clearing House banks carried on their balance sheets overnight a significant amount of so-called float: funds already committed to a counterparty but not yet paid out. The float was in effect an interest-free source of funding for the major banks. It had macroeconomic implications that were little explored at the time but hinted at by the financial journalist Martin Mayer: “The size of the money supply turns out to be to a significant degree a function of the efficiency of the clearing mechanism” (Mayer 1974:135). The float also had implications for the profits made by the large commercial banks. It was this perspective that dominated the discourse. The NYCH members experienced “frequent questioning by domestic correspondents, many of whom say the New York Banks are ‘full of float.’”²³² In 1966, a committee of the House of Representatives held hearings into the issue of float and sought to identify and charge those banks which benefited from it.²³³ It was a rare case of popular politics wading into issues of the monetary system after 1945.

²³¹ Bank Mees & Hope to Morgan Guaranty London, January 1971, folder “January 14, 1971 (2),” SF 6.

²³² Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 9, Folder “Nov. 24, 1970,” CF 11

²³³ House Committee on Government Operations. Legal and Monetary Affairs Subcommittee. 1966. *Federal Reserve System: Check Clearance Float*. Washington, DC: Government Printing Office.

The Role of the Federal Reserve

The Federal Reserve conceived of the payment system primarily as a technical problem. As the central bank, the Federal Reserve, of course, could deal with the economic problems of the payment system more easily than private organizers: it could repair the failure of any participant to make a promised payment by creating federal funds. The Federal Reserve operated its own payment system, FedWire, which was mainly used by smaller U.S. banks. In 1970, it opened a new server for FedWire in a bunker built to withstand a nuclear attack in Culpeper, Virginia (Board of Governors of the Federal Reserve System 1975). The Federal Reserve's goal was, in the words of the responsible governor Mitchell, that FedWire and the private payment system provide an "efficient, direct, and prompt settlement machinery."²³⁴

The Fed sought to draw a clear line between economic fundamentals and technical details; accurate prices should express only the former. From this vantage, the Fed criticized the way in which the Clearing House settled foreign dollar payments. The late 1960s were a time of permanent crisis for the Bretton Woods system, widely understood as resulting from macroeconomic imbalances. Federal Reserve and Treasury officials fought one problem of the Bretton Woods system after the other (Block 1977a; Helleiner 1994). The mechanism relating to eurodollar settlement in New York added a further source of instability. In particular, the Federal Reserve was concerned about the following trading strategy that exploited the technical details of the payment system for economic profit: "Borrowers of overnight Eurodollar on Thursday can take their money in Federal funds, then repay the debt in clearing house funds on Friday. Since the check cannot be presented until the following Monday, a considerable interest rate advantage

²³⁴ Board of Governors of the Federal Reserve System, Meeting Minutes, May 10, 1966, Volume 53, Part 5, p. 5, <https://fraser.stlouisfed.org/title/821/item/516749>, accessed on May 21, 2019.

is gained by Thursday borrowing, and the Thursday–Friday Eurodollar rate is normally at a level three times higher than the New York Federal funds rate to reflect this.”²³⁵

As foreign banks tried to exploit this profit opportunity, they bought dollars on Thursday, driving up the dollar exchange rate on that day of the week. “The resulting regular weekly adjustment in sterling–dollar and other foreign exchange rates has been regarded as undesirable by European commercial banks and overseas central banks in their operations to ease out foreign exchange fluctuations.”²³⁶ The Federal Reserve also found many market participants ignorant of the operational details driving these rate changes: “the technical nature of this interest rate pattern has usually been only partly understood by the financial press, which has tended as a result to publicize movements in exchange rates on a day-to-day basis which actually have not occurred.” The Federal Reserve urged major U.S. commercial banks to change the settlement mechanism for eurodollar payments.²³⁷

Beyond the eurodollar, the Federal Reserve was interested in changing the payment system in general. The number of checks was growing fast throughout the 1950s and 1960s. By the mid-1960s, about half the banks’ workforce was handling checks (Cortada 2006:44). In the early 1960s, the Federal Reserve had been a strong champion of bringing automation into check processing. It pushed for the coding of checks with magnetic ink. That way, some of the check-processing work could be done by sorting machines. To convince the commercial banks to use

²³⁵ Anon., “NY Fed mulls plan to end sterling swings with bank settlements in federal funds,” *American Banker*, August 28, 1967.

²³⁶ Anon., “NY Fed mulls plan to end sterling swings with bank settlements in federal funds,” *American Banker*, August 28, 1967.

²³⁷ Anon., “NY Fed mulls plan to end sterling swings with bank settlements in federal funds,” *American Banker*, August 28, 1967.

magnetic ink and to follow one standard, the Federal Reserve imposed prohibitive fees that banks would have to pay if they asked the Federal Reserve to handle an unencoded check.

At a meeting of the Board of Governors with the Presidents of the regional Federal Reserve Banks in 1966, Governor Mitchell—the strongest proponent of automation among the central bankers—raised the question of how the Federal Reserve should position itself toward the introduction of computers into check processing. In a memo distributed ahead of the meeting, Mitchell wrote: “The automation problem in its broadest form raises the issue of how far the [Federal Reserve] System’s public responsibility goes to expedite and extend, at a minimum social cost, the settlement mechanism. Should it take a passive role, functioning wherever and whenever private arrangements by banks or others are non-existent or fall below service standards achieved in the past, or should it be leading the way toward a fully automated settlement?”²³⁸

Mitchell thought it “undesirable to turn over to private interests something so vital to the community welfare” and suggested that the Federal Reserve “assume, as early as possible, a positive role.”²³⁹ Other central bankers were less sanguine. The president of the Federal Reserve Bank of Minneapolis, Hugh D. Galusha, Jr., said “it was doubtful that [technology firms] would have available for several years the kind of data transmission equipment that would be needed to implement the program Governor Mitchell had outlined.”²⁴⁰

²³⁸ Board of Governors of the Federal Reserve System, Meeting Minutes, May 10, 1966, Volume 53, Part 5, p. 4, <https://fraser.stlouisfed.org/title/821/item/516749>, accessed on May 21, 2019.

²³⁹ *ibid.*, p. 7, p. 5.

²⁴⁰ *ibid.*, p. 12.

A compromise position was formulated by the Federal Reserve Bank of Boston. In its annual report of 1967, it argued that “[t]he most likely changes in the payments system are those which involve the introduction of a minimum of institutional changes. Changes in short will come via the paths of least resistance and most identifiable gains.” The Federal Reserve Bank of Boston thought it “unlikely that private enterprise, alone, will be able to develop and implement a payments mechanism which will satisfy the entire range of the public’s banking needs.” The optimum payment system would require “cooperation between private enterprise and public institutions.”²⁴¹

In the late 1960s, the presidents of the regional Federal Reserve Banks established a task force on changes in the payments mechanism. Its chairman, John J. Clarke, vice president of the Federal Reserve Bank of New York, put the issue in stark terms in a speech in St. Louis: “The payments mechanism must be reformed [or] the existing check collection system, which increasingly is bearing a heavy paper load, ultimately may break down [...] We have reached that point in the continuing evolution of the payments mechanism when reform cannot be achieved by simply propping up the existing mechanism.”²⁴² In a 1970 speech at a conference on “Electronic Money—Banking and the Computer,” Mitchell said that the necessary technology was now available and that “what is lacking is sufficient motivation from the banking industry.”²⁴³

²⁴¹ Anon., “Payments Mechanism Conviction,” *American Banker*, September 13, 1967.

²⁴² Anon., “Payments Mechanism Reform Seen Needed,” *American Banker*, September 13, 1967.

²⁴³ Phillip Brooke, “Mitchell says banks must press hard for an electronic payments system,” *American Banker*, June 11, 1970.

Even those central bankers who called most energetically for changes in the payment system, however, did not necessarily want the Federal Reserve to commit itself. After his ringing 1970 speech, Mitchell “made clear that this was his personal opinion and was not to be considered as Federal Reserve policy.” He also admitted that “the Fed has not been aggressive in the past in planning for an improved payments system for the U.S. The Fed ‘essentially has been standing on the sidelines,’ trying to work with the banking industry, but so far has not taken an active role.”²⁴⁴

Attempts by the Clearing House to Solve the Problem as an Economic One

In the face of pressures from the eurodollar market and the Federal Reserve, the NYCH in the late 1960s undertook two practically simultaneous efforts to understand and change the payment system: as an economic and as a technical problem, respectively. The attempt to solve the problem as an economic one began in 1967, when the Steering Committee obtained the approval of the Clearing House Committee “to undertake a study of all the elements of the settling mechanism.”²⁴⁵

This was an almost impossibly broad remit. It involved everything the Clearing House was doing and a lot of what its members were doing. To formulate its position in the study, Chase Manhattan Bank set up “an internal committee composed of men [from the following departments]: check processing, trust operations, money market position, money transfer,

²⁴⁴ Phillip Brooke, “Mitchell says banks must press hard for an electronic payments system,” *American Banker*, June 11, 1970.

²⁴⁵ Steering Committee Meeting Minutes, September 14, 1967, p. 3, folder “September 14, 1967,” SF 5.

systems and standards, international operations and broker-dealer operations.”²⁴⁶ The chairman of the ad hoc committee, Charles A. Agemian, began a meeting by saying: “The scope of the project is undefined.” But the task was also important and urgent, Agemian said: “The Task Force should not feel it must wait until its study is completed before submitting items to the Steering Committee that could be immediately beneficial.”²⁴⁷ After eight months, Agemian reported to the Steering Committee: “Although no significant recommendations have resulted from the Task Force’s efforts thus far, the study is providing a meaningful review of settling mechanisms and it is recommended that the project be continued.”²⁴⁸ The Steering Committee approved the recommendation.

As the ad hoc committee discussed in its first meetings what to focus on, it decided that “the first order of priority” be given to the payments for eurodollar and foreign transactions.²⁴⁹ To handle that issue, the ad hoc committee set up a special subcommittee. The NYCH member institutions saw this as an important issue and sent some of their most important bankers on the subcommittee, including the legendary head of Citibank’s foreign exchange desk, Edwin A. Reichers.

The members of the subcommittee ascribed great importance to the New York payments system for foreign transactions. Despite problems, they claimed, “the system has worked” and has “facilitated the dollar’s becoming the foremost currency for world trade and finance.”²⁵⁰ In

²⁴⁶ Minutes of Meeting of Task Force, December 1, 1967, folder “December 14, 1967,” SF 5.

²⁴⁷ Minutes of Meeting of Task Force, December 1, 1967, folder “December 14, 1967,” SF 5.

²⁴⁸ Steering Committee Meeting Minutes, August 8, 1968, p. 3, folder “August 8, 1968,” SF 5.

²⁴⁹ Clearing House Committee Meeting Minutes, December 28, 1967, p. 166, CM 13.

²⁵⁰ Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 8, Folder “Nov. 24, 1970,” CF 11.

particular, through its undergirding the eurodollar market, the payments system “has permitted the establishment of an intimate interdependence between the New York and London money markets.” Any change would be “a very delicate matter” and would need to be announced “at least six months in advance of conversion” so that market participants could adjust.²⁵¹

The subcommittee members agreed that “serious operating problems have existed for many years” in the “market practice for handling foreign banking and foreign exchange transactions.”²⁵² These problems, the bankers concluded, had developed “primarily because of the difference between clearing house funds and Federal funds.”²⁵³ To make matters worse, there was “considerable variation among clearing banks” in their practices of settling international payments.²⁵⁴ A good part of the subcommittee’s work, then, consisted of finding out what the existing market practices were in the first place and why they had not changed previously.

The subcommittee arrived at the opinion that previous proposals to settle international transactions on a same-day basis in federal funds had not been implemented because they would have increased the economic risk incurred by the Clearing House members. Proposals for same-day settlement “were unacceptable to most participants because the necessity of clearing and settling a huge volume of checks within a limited number of hours presented an insurmountable obstacle.”²⁵⁵ Before settlement took place the next day, the NYCH member banks had time to correct errors. They also needed the extra day to adjust their reserve positions with the Federal

²⁵¹ *ibid.*, p. 4, p. 1.

²⁵² *ibid.*, p. 6.

²⁵³ *ibid.*, p. 6.

²⁵⁴ *ibid.*, p. 7.

²⁵⁵ *ibid.*, pp. 7–8.

Reserve, particularly to raise the federal funds necessary to make payments in case of a net outflow.²⁵⁶ Here, in the payments between the central bank and the largest commercial banks, “at the point where [the web of payments] is most vulnerable, [...] failure to make a promised payment can undermine any number of other promised payments, causing the entire web to unravel” (Mehrling 2011:4).

The representatives of the major New York banks were of two minds regarding the profit opportunities that the parallel existence of two settlement moneys in foreign transactions brought with it. The subcommittee noted that the existing payment system “has offered astute participants in the foreign exchange and money markets additional profit opportunities.”²⁵⁷ The subcommittee’s final report called it a disadvantage that, after a unification of payment money, “[s]ome money market participants will lose profit opportunities which now exist.”²⁵⁸ On the other hand, a unification of payment moneys would help the NYCH member banks avoid “[l]osses occasioned by others taking advantage of the system at our expense when one or more of our people are not vigilant in precluding our funds, as opposed to our customers’, from being used.”²⁵⁹ In the end, the subcommittee praised the prospect that “disparities due to the technical aspects of our present mechanism will largely disappear, i.e., ‘today-tomorrow’ money such as Thursday–Friday dollars will be eliminated with the new system; buyers and sellers of money

²⁵⁶ *ibid.*, p. 8.

²⁵⁷ *ibid.*, p. 8.

²⁵⁸ *ibid.*, p. 15.

²⁵⁹ *ibid.*, p. 10.

will be able to operate on the basis of the value of funds in one market as opposed to the other without concern as to gimmickry, reserve savings, etc.”²⁶⁰

In its final report to the Steering Committee, the subcommittee on settling foreign payments called for “major changes in the existing mechanism for settling foreign bank transactions.”²⁶¹ Most importantly, all eurodollar and foreign transactions should be settled in Federal funds on a same-day basis.²⁶² These changes, however, would require all major market participants to go along: “A new system cannot readily be undertaken by the clearing banks acting alone.”²⁶³ In November 1970, the Clearing House Committee unanimously approved the subcommittee report but stressed that “certain condition precedent occur before the decision is implemented.”²⁶⁴ This caveat would keep the change to same-day federal-funds settlement from happening for another decade.

Even though the NYCH concluded that a change to same-day settlement in federal funds would be desirable, it did not follow through because it was afraid that the rest of the market would exploit such a move. The ad hoc committee “found that overriding conditions of a non-operational nature make changes in current settling mechanisms that at first were thought desirable, untimely.”²⁶⁵ The Clearing House members sought to avoid a situation in which “the member banks would be settling on the same day for their official checks while receiving next

²⁶⁰ *ibid.*, p. 14.

²⁶¹ *ibid.*, p. [i].

²⁶² *ibid.*, p. 1, p. 13.

²⁶³ *ibid.*, p. 2.

²⁶⁴ Clearing House Committee Meeting Minutes, November 24, 1970, p. 239, CM 13.

²⁶⁵ Steering Committee Meeting Minutes, August 8, 1968, p. 3, folder “August 8, 1968,” SF 5.

day funds for the official checks of the non-member banks and foreign bank agencies.”²⁶⁶ The question was left hanging in the air. When Clearing House manager John F. Lee brought up, at a meeting of the Clearing House Committee, the issue of how “assurance [might be] obtained that all other banks engaging in this type of business would similarly settle in federal funds” and “asked what would be the proper mechanism for obtaining such an agreement,” the CEO’s of the member banks “decided to table the question.”²⁶⁷

From the sidelines, the Federal Reserve was pushing hard for international payments to be moved to same-day federal-funds settlement. Shortly after the NYCH had established its subcommittee on settling foreign payments, Federal Reserve officials began to express “a keen and continuing interest in the proposal to settle [...] in Federal funds.”²⁶⁸ In its final report, the subcommittee related that “Federal officials [...] are anxious to see this proposal implemented at the earliest possible date.”²⁶⁹ The subcommittee even expected that “[t]he exercise of the [Federal Reserve] System’s moral suasion will be an asset in achieving the proposed change to a settlement of foreign transactions, from coast to coast, on a Federal funds basis.”²⁷⁰ When the NYCH did not act on the subcommittee’s report, the Federal Reserve Bank wrote to major New York banks urging them to settle all international transactions in federal funds “at the earliest practicable date.”²⁷¹ The Clearing House Committee decided to evade the Federal Reserve’s

²⁶⁶ Steering Committee Meeting Minutes, August 8, 1968, p. 3, folder “August 8, 1968,” SF 5.

²⁶⁷ Clearing House Committee Meeting Minutes, January 22, 1969, p. 188, CM 13.

²⁶⁸ Report of the Special Subcommittee on Settling Foreign Payments to the Steering Committee of the New York Clearing House Association,” n.d., p. 16, Folder “Nov. 24, 1970,” CF 11.

²⁶⁹ *ibid.*

²⁷⁰ *ibid.*

²⁷¹ William F. Treiber to Walter B. Wriston, January 8, 1971, folder “January 14, 1971 (2),” SF 6.

request. It would hold on to an “orderly conversion to Fed fund settlements” as a long-term goal but would not undertake specific, immediate steps in that direction.²⁷²

In response to the Fed’s prodding, the NYCH, in the summer of 1972, set up a new committee to revisit the issue of moving to same-day federal-funds settlement of international transactions. This committee included officials from the NYCH member banks and the Federal Reserve Bank of New York. The effort did not end happily. When the chairman of the committee, Charles J. McGee of the Manufacturers Hanover bank, submitted the report to NYCH manager John F. Lee in April 1973, he cautioned: “Please note, that [...] the Federal Reserve members asked that a footnote be inserted to indicate that they would not join in the conclusions reached by the Committee.”²⁷³ A few weeks later, the First Vice President of the Federal Reserve Bank of New York, Richard A. Debs, wrote to Clearing House Committee chairman Gabriel Hauge: “we at this Bank were disappointed in the end of results of the report, which mean, in effect, that our mutual studies and efforts have not been successful in achieving what we had hoped to achieve within the near future. [...] our disappointment lies in not being able to see any near-term prospects for implementing a change that seems to us to be desirable not only from the [Federal Reserve] System’s point of view, but also in terms of benefits for the clearing house banks and the position of New York City as an international financial center, as well as for the country as a whole.”²⁷⁴

²⁷² Steering Committee Meeting Minutes, January 14, 1971, p. 3, folder “January 14, 1971 (1),” SF 6.

²⁷³ Charles J. McGee to JFL, April 23, 1973, folder “May 23, 1973,” CF 11.

²⁷⁴ Richard A. Debs to Gabriel Hauge, June 29, 1973, folder “July 25, 1973,” CF 11.

The Clearing House blocked the Fed's attempts mainly for two reasons. First, it found CHIPS overwhelmed by the "tremendous volume of funds transferred daily"²⁷⁵ within a few years of the system coming online. A subcommittee on operations concluded in October 1972: "the current [...] system (utilizing a B-3500 computer with a back up system) is not capable of supplying data required by our money market people, in sufficient time to meet existing time frames for adjustment of money positions in Fed Funds."²⁷⁶ By the time CHIPS had cleared and the NYCH member banks knew how much federal funds they would receive or have to send, there was not enough time left to acquire or sell the necessary funds on the federal funds market or, as a safety valve, borrow at the Federal Reserve's discount window. The situation would only change, according to the operations subcommittee, when the NYCH installed a new, more powerful computer on which to run CHIPS.

An even more important reason for the NYCH's delaying action was expressed in a "strictly confidential" report by another subcommittee.²⁷⁷ It argued that the volume of transactions through CHIPS, importantly by banks that were not members of the NYCH, created a credit risk. The payment system, this subcommittee realized, was not only infrastructure but had become an economic entity of major importance. A move to same-day settlement would enlarge the credit risk in the system: "CHIPS with [same-day] Settlement permits much less time to arrange cover should funds expected not be received." The Clearing House should hence "institute credit criteria for the Associate Members." Foreign banks participating in CHIPS

²⁷⁵ "Report of the CHIPS/PEPS Funds Settlement Committee," February 8, 1973, p. 7, folder "May 13, 1973," CF 11.

²⁷⁶ Svevo Samore, "Report to the chairman of the CHIPS/PEPS funds settlement committee, by the operations subcommittee," October 19, 1972, folder "May 23, 1973," CF 11.

²⁷⁷ Alfred R. Wentworth, "Position report by the credit sub-committee to the CHIPS-PEPS fund settlement committee," October 17, 1972, folder "May 23, 1973," CF 11.

should be in good standing with regulators in the U.S. and their home country, and should be in good financial condition. The U.S. branches of foreign banks that conducted a high volume of payments relative to their equity should, in addition, have guarantees from their parent banks to cover funding shortfalls. These steps “will, we hope, obviate the possibility of a failure in the system.”

Attempts by the Clearing House to Solve the Problem as a Technical One

While the NYCH’s attempt to rebuild the payment system understood as an economic mechanism went nowhere, the parallel effort to understand the problem as a technical one led to quick and deep changes. It would prove important precisely because the changes, understood by creators as purely technical, did have unanticipated economic consequences.

In 1966, the Clearing House Steering Committee discussed a technical solution to payments problems, under the rubric “Settling Center for Interbank Payments.” The major banks, in general, were open toward electronics: “From the earliest days of the computer, bankers were aware that ‘the field of electronics’ and ‘automation’ held out the promise of improved efficiencies across their enterprises” (Cortada 2006:37). The operations experts at the major New York banks—coming together in the Bank Operations Conference, which had close ties to with the Clearing House and, by the early 1980s, would become a part of it—grew increasingly interested in electronics. In 1967, each bank in the Clearing House had at least one computer specialist among its representatives on the Bank Operations Conference.²⁷⁸ Banks in the 1960s even sought to expand into data processing that had little or nothing to do with banking. The first

²⁷⁸ W. H. Siddons, Jr. et al. to Arthur P. Ringler, December 19, 1967, folder “January 11, 1968,” SF 5.

amicus brief ever filed by the American Bankers association was in a case involving data processing by banks.²⁷⁹

Interbank payments were a much more realistic goal for automation than the payments between banks' retail customers. There were many retail customers, each writing checks over relatively small amounts, and there was no realistic way, in the 1960s, to get them to use a computer to make their payments. In contrast, there were only a few major banks, each writing many checks over large amounts. It was more realistic to entice them to adopt computers for their payments.²⁸⁰

In the late 1960s, the Bank Operations Conference carried out the Steering Committee's request to "take a hard look at [the] possibility [of a Settling Center for Interbank Payments] in the light of equipment developments."²⁸¹ Initially, these explorations were limited to communications equipment. Western Union claimed that it "had available automatic switching equipment to handle transmissions of 375 words per minute" but then reversed that statement in early 1967.²⁸² After Western Union "bombed out,"²⁸³ the Subcommittee on Inter-Bank Payments of the Bank Operations Conference wrote to the Steering Committee: "Frankly, the members of the subcommittee are quite pleased with the fact that Western Union could not produce what they proposed, because we feel that a time-sharing disc system offers many more advantages to

²⁷⁹ American Bankers Association, Press Release, August 15, 1967, folder "October 19, 1967" SF 5.

²⁸⁰ H. Erich Heinemann, "Clearing House Motto: For Members Only," *New York Times*, April 28, 1968.

²⁸¹ Steering Committee Meeting Minutes, April 14, 1966, p. 3, folder "April 14, 1966," SF 5.

²⁸² Steering Committee Meeting Minutes, May 11, 1967, p. 3, folder "May 11, 1967," SF 5.

²⁸³ Subcommittee On Inter-Bank Payments of the Bank Operations Conference to Steering Committee, June 5, 1967, folder "June 8, 1967," SF 5.

the banks, even though it will be somewhat more expensive.”²⁸⁴ The subcommittee “decided to broaden the scope of its equipment investigation.” It solicited proposals from three of the leading computer manufacturers of the day: IBM, Burroughs, and RCA. This was now an urgent effort, with weekly meetings of the subcommittee.

In September 1967, at meetings of the Steering Committee and the Clearing House Committee, the top managers of the major New York banks decided “that the project of automating interbank payments be undertaken by the Clearing House.”²⁸⁵ In December, the Steering Committee favored Burroughs over the other companies and authorized the beginning of negotiations with Burroughs.²⁸⁶ By March 1968, the Clearing House and Burroughs had arrived at a draft contract that was amenable to the bankers. They would have wanted “Burroughs [to assume] ‘resulting losses’ which might be caused by a computer breakdown” but concluded that “that it was unlikely that any equipment manufacturer would acquiesce to such liability.”²⁸⁷

The Clearing House’s efforts increasingly blended with Burroughs’. Burroughs was the leading computer company selling to banks and their clearing houses (Cortada 2006:52, 493). It even sent a monthly magazine to bankers across the country, called *Burroughs Clearing House*. Landing the contract to equip the New York Clearing House—the oldest and by far the largest in the U.S.—not just with adding machines but a system of networked computers was as high in prestige as Burroughs could hope for. Once the contract was signed, Burroughs asked “that some

²⁸⁴ *ibid.*

²⁸⁵ Steering Committee Meeting Minutes, September 14, 1967, folder “September 14, 1967,” SF 5; Clearing House Committee Meeting Minutes, September 27, 1967, p. 157, CM 13.

²⁸⁶ Steering Committee Meeting Minutes, December 14, 1967, folder “December 14, 1967,” p. 2, SF 5.

²⁸⁷ Steering Committee Meeting Minutes, March 14, 1968, p. 3, folder “March 14, 1968,” SF 5.

immediate publicity be given to the installation.”²⁸⁸ The Clearing House went along, even though the Clearing House Committee had only recently decided, very much in keeping with its tradition of reticence, that “publicity [...] should be held in abeyance until the installation is operational.”²⁸⁹ In April 1968, the NYCH sent out a press release. It stated that “[t]he development of the system will be conducted jointly by the Clearing House and Burroughs” and expressed the expectation that “the computer will vastly speed up transfers of funds and daily settlements of accounts among the banks.”²⁹⁰

When the project of a computerized interbank payments system ran into difficulties, the relationship between the Clearing House and Burroughs deepened even more. They had initially envisioned the installation of a Burroughs B3500 as the central computer of the system at the Clearing House; each member bank would have been free to choose which computer—whether from Burroughs or a different manufacturer—it would install and connect to the central computer. In September 1968, at a meeting of the Steering Committee, this “multiterminal concept” was given up.²⁹¹ Instead, the task force of the Interbank Payments Committee “recommended the use of one type of terminal device (TC-500)” manufactured by Burroughs. To be part of the interbank payments system, each bank had to use a computer from Burroughs—this made it more likely that it would buy from Burroughs for other uses as well, to achieve easier compatibility.

²⁸⁸ Steering Committee Meeting Minutes, April 11, 1968, p. 3, folder “April 11, 1968,” SF 5.

²⁸⁹ *ibid.*

²⁹⁰ Press release, [April 1968], folder “May 9, 1968,” SF 5.

²⁹¹ Steering Committee Meeting Minutes, September 12, 1968, p. 3, folder “September 12, 1968,” SF 6.

The setting up of the payments system developed a dynamic of its own. At meetings of committees of the Clearing House in March 1968, NYCH manager John F. Lee predicted that setting up the system would cost 75,000 dollars.²⁹² At a meeting in April 1970, when the system was close to completion, “it was stated that Burroughs has expended \$549,000 on the project to date—very much more than it had ever contemplated.”²⁹³ Yet the computer experts of the Clearing House member banks were not critical of Burroughs. In a “general discussion [...] with respect to how the project progressed to this position,” they concluded that “the System [...] has much more in it than was originally contemplated.”²⁹⁴ The banks’ computer experts even decided “that the Clearing House should take on [Burroughs’] added expense.”²⁹⁵

The system, by now called the Clearing House Interbank Payment System (CHIPS), started being used in 1970. In its annual report, the Steering Committee laid out the steps from limited to full operation: “The System commenced operation using “live” transactions on April 6, 1970. Early operation was on a limited basis with respect to daily periods of activity, message volume, and dollar amounts per transaction. Limited operation remained in effect until debugging of the System was completed and restart routines were incorporated. Full operation began on June 29, 1970.”²⁹⁶

The introduction of CHIPS led to a strengthening of the Clearing House as a formal organization. As the plans for the system were being drawn up in February 1968, the Steering

²⁹² Steering Committee Meeting Minutes, March 14, 1968, p. 3, folder “March 14, 1968,” SF 5; Clearing House Meeting Minutes, March 28, 1968, p. 171, CM 13.

²⁹³ Minutes of Meeting of the Interbank Payments Committee, April 7, 1970, folder “April 9, 1970,” SF 6.

²⁹⁴ *ibid.*

²⁹⁵ *ibid.*

²⁹⁶ Annual Report of the Steering Committee 1970, p. 17, folder “October 6, 1970,” SF 6.

Committee held that among the “matters requiring immediate attention” was “the hiring of appropriate technical personnel to undertake the development of the project.”²⁹⁷ In April 1968, the Clearing House hired an IT expert to prepare installation of the computer—the first of many computer experts to be hired by the NYCH.²⁹⁸

The operation of CHIPS would be governed by private law, set by the Clearing House. But drafting the rules that would govern the system, once it was running, was treated as an afterthought. The Clearing House conceived of the interbank payments systems as primarily—almost exclusively—a technical problem. Lawyers played very little role in that process.

Under time pressure, the installation of hardware and the programming of software were prioritized over the setting of rules. When the system began live transactions in April 1970, no rules had been approved by the top committees of the Clearing House. The Steering Committee and the Clearing House Committee for the first time saw draft rules circulated ahead of their meeting in June 1970. The rules were unanimously approved.²⁹⁹ They “had been formulated by the operating personnel of the several banks concerned”—not by lawyers.³⁰⁰ In terminology and logic, they bore little resemblance to the law on checks, a well-developed area of U.S. law. Instead, they were based on the possibilities and constraints of computer communication ca. 1970.

²⁹⁷ Steering Committee Meeting Minutes, February 8, 1968, p. 2, folder “February 8, 1968,” SF 5.

²⁹⁸ Clearing House Meeting Minutes, April 25, 1968, p. 174, CM 13.

²⁹⁹ Steering Committee Meeting Minutes, June 11, 1970, p. 1, folder “June 11, 1970,” SF 6; Clearing House Meeting Minutes, June 24, 1970, p. 229, CM 13.

³⁰⁰ Clearing House Meeting Minutes, June 24, 1970, p. 229, CM 13.

Until the emergence of UCC article 4A in 1990, there was no statutory law and little case law that would have applied to the payment system (Cowie 1992:739; Rogers 2011:5–6).³⁰¹ The CHIPS rules—and, in the face of their indeterminacy, the discretion of the NYCH members—determined who would bear the loss if a payment failed, e.g., because a participant bank went bankrupt (Scott 1978). This was a consequential question given that the daily volume of transactions on CHIPS amounted to dozens and later hundreds of billions of dollars. The Clearing House also decided which financial institutions were allowed to join CHIPS. As access to the payment system facilitated other business such as bond underwriting, these decisions influenced which banks were at the center of the global financial system and which were not.

Over time, there developed a hierarchy of membership. At the top of the decision-making order were the twelve member banks of the Clearing House—all of them headquartered in New York City—, which set the rules. Below that group were around a dozen U.S. banks that had no vote on the rules but, like the Clearing House members, could settle on CHIPS. At the bottom were more than a hundred banks from the U.S. and abroad that had no power over rules and could clear through CHIPS but depended for settlement on one of the banks above them.

The NYCH member banks set up CHIPS without the participation of government officials. Yet an important private-public link consisted of the final settlement of CHIPS, which took place on the books of the central bank. When, at the end of the trading day, all transactions on CHIPS were netted out against one another, the settling banks paid or received their balance into an account at the Federal Reserve Bank of New York. These were only around 20 transactions per day totaling in the millions—as compared to the thousands of transactions

³⁰¹ Even today, private law remains critically important: “A lawyer who advises a client on electronic funds transfers in ignorance of relevant agreements such as those of CHIPS [...] flirts with malpractice” (White et al. 2019:452).

totaling in the billions that were executed on CHIPS—, but these few transactions were crucial. In a financial crisis, final settlement depended on the availability of dollars, and the Federal Reserve was the only actor with unlimited ability to create them. Because the Federal Reserve’s agreement was needed to make a bank a settling participant in CHIPS, the central bank had an effective veto over which banks could join the innermost circle of the private payment system.

The volume of payments between the Clearing House members was large enough to make them use the computer system even if no other banks joined. But to improve the eurodollar payments system, the Clearing House thought it necessary that non-member banks join CHIPS as well. Equipping them with computers connected to CHIPS would simplify the operations of the NYCH member banks, which would no longer need to handle telex and telephone messages coming in from their correspondents in non-standardized formats. Already in October 1968, the Interbank Payments Committee of the NYCH was eager to enroll large foreign banks in the payments system and asked NYCH manager John F. Lee to meet with the Committee on International Banking, which included banks that were not members of the NYCH. Lee reported back that “[a]ll the institutions represented indicated strong interest.”³⁰² In January 1971, the Clearing House invited Bank of America—the largest bank in the U.S., headquartered outside of New York—to join CHIPS.³⁰³ By the mid-1970s, CHIPS handled a considerable part of the worldwide payments in dollars.

³⁰² Steering Committee Meeting Minutes, October 10, 1968, p. 3, folder “October 10, 1968,” SF 6.

³⁰³ John F. Lee to Robert G. Mayer, January 28, 1971, folder “December 10, 1971,” SF 6.

The Crisis of the Payment System (1974)

The establishment of CHIPS and its apparent success—measured in the number of banks that joined it and the system’s ability to clear and settle reliably during normal times—let the questions of economic resources and risks raised by the Foreign Report appear moot. In 1974, however, the economic questions came to the fore with a vengeance.

A crisis in the payments system for eurodollar and foreign transaction was sparked by the bankruptcy of Herstatt bank of Cologne (Mourlon-Druol 2015; Schenk 2014). Herstatt had a relatively small depositor base, limited to the Rhineland, and borrowed heavily in the eurodollar money market, putting the funds to speculate use in the foreign exchange market. German regulators closed Herstatt bank on Friday, June 26, 1974 at 2:40 p.m. Central European Time. At that moment, many foreign exchange deals of Herstatt due that day had been settled in half: Herstatt had already received the payment in one direction, but its counterparties had not received the opposite payment.

In New York, the settling partner for Herstatt was Chase Manhattan bank. After learning of Herstatt’s closure, Chase Manhattan did not carry out payments (Becker 1976). Because major New York City banks did not receive payments from Chase, they in turn did not make payments. CHIPS was frozen.³⁰⁴

By the time American banks realized that something calamitous was happening, it was Friday afternoon, and it was summer. Almost all CEO’s of the NYCH member banks had already left the city. The president of the NYCH and CEO of Citibank, Walter Wriston, still happened to be in his office. Much responsibility fell to him. Wriston had the right background

³⁰⁴ “Dollar amount of payments made through CHIPS & PEPS,” [August 1974], Attachment No. 1, folder “July 24, 1974,” CF 12.

to grasp the crisis: he had made his career in Citibank's foreign department and was "perhaps the first bank CEO to appreciate the importance of the back office and raise it to a status once accorded only to corporate lenders" (Zweig 1995:300). He sought to transform Citibank's back office into the leading operation among U.S. banks, importantly through the introduction of computers, but also ran into problems doing so. The computerized payment message system MARTI that Citibank introduced to communicate with its correspondents did not work reliably. At times, the Clearing House had to keep CHIPS open beyond its usual cut-off time to give Citibank and its correspondents time to sort out which payments it had to make that day (Zweig 1995:381–83).

When, after the Herstatt failure, most NYCH banks stopped making payments on behalf of their correspondents, Wriston did not even entertain the possibility of following the CHIPS rule for such a situation, which called for a rewinding of the day's transactions. Already the 1972 report by the NYCH subcommittee on credit in the payment system had pointed out that following the rule was "a practical impossibility."³⁰⁵ One alternative was to apply to CHIPS the rule governing such a situation at the traditional check exchanges at the NYCH. They were backstopped by a commitment of the member banks to make up for the payments that one of them could not make. This provision, the credit subcommittee had concluded, "was agreed when conditions were altogether different, both as to number and size of participant and most especially different as to volumes envisioned and the type of payment instrument."

To unfreeze the system without incurring exorbitant risks, Wriston set up a working group in Citibank's operations center that made credit judgments on the spot (Zweig 1995:455–

³⁰⁵ Alfred R. Wentworth, "Position report by the credit sub-committee to the CHIPS-PEPS fund settlement committee," October 17, 1972, folder "May 23, 1973," CF 11.

60). “Wriston was the first banker to release money without coverage during the liquidity crisis” (Zweig 1995:458). An anonymous banker applauded the decision in the trade journal *Euromoney* and argued that each major bank should not protect itself too much but should smooth payments in the interest of the financial system.³⁰⁶ But it was enough to get the payments system close to anywhere near normal.

At a special meeting of the Clearing House Committee on July 1, Committee chairman Gordon Wallis “said that there were clear indications that payments were not being put through in a normal manner. Special procedures had to be effected to reestablish confidence in the clearing mechanism and to unblock those payments.”³⁰⁷ The Committee adopted an emergency rule for CHIPS suggested by Wriston: “participants are required to put all of their payment orders, international and domestic, into it immediately upon receipt, and to release them. This is special procedure ordered for a limited period beginning July 1, 1974 and is effective until terminated. This rule covers all payments put into the System on the day it becomes effective and thereafter until such termination. All such payments are subject to the right of recall the morning of the business day following the day that the payments are released.”³⁰⁸

The NYCH member banks could now put a payment into the system but had up to 24 hours’ time to revoke it. This rule change, the Clearing House lawyers suggested in an internal memorandum, was questionable. The law on checks did not allow for a cashier’s check to be revoked.³⁰⁹

³⁰⁶ Bill Banker, “Spot the knave ... the latest Europroblem,” *Euromoney*, August 1974, p. 15.

³⁰⁷ Clearing House Meeting Minutes, July 1, 1974, p. 76, CM 14.

³⁰⁸ *ibid.*

³⁰⁹ Anon., “Memorandum,” July 10, 1974, folder “July 1, 1974,” CF 12.

The reaction of international banks, arriving at the Clearing House in a series of telegrams, was outrage. The Netherlands Bankers Association was “seriously concerned at the possible consequences of the recently introduced arrangements permitting New York clearing banks to recall credit entries on the day after issue. This may lead to severe dislocations in the international payments system and in the foreign exchange markets whereas a return to normal and settled conditions appears to be of paramount importance. We therefore may strongly request you to reconsider the situation so that these arrangements will be canceled as soon as possible and the system whereby payments are made unconditionally and not subject to recall reestablished.”³¹⁰

The Irish Banks’ Standing Committee wrote to the NYCH that “this unilateral action on the part of your Association seriously undermines confidence in the whole international payments system and could eventually lead to a total breakdown of its mechanism [...] changes of this nature should always be the subject of prior consultation and agreement with all the countries concerned.”³¹¹ Most importantly, the Committee of London Clearing Bankers, an important actor in the eurodollar market, wrote that in London “severe financial and commercial repercussions are felt. [...] In order to avoid damage to the international payments system we would request members of the New York Clearing House to revert immediately to the arrangements whereby interbank payments are issued without any conditions concerning the right of recall.”³¹²

³¹⁰ Anon., untitled memorandum, July 22, 1974, folder “July 24, 1974,” CF 12.

³¹¹ Irish Banks’ Standing Committee to Gordon T. Wallis, October 2, 1974, folder “November 27, 1974,” CF 12.

³¹² Committee of London Clearing Bankers to Walter Wriston, [July 1974], folder “July 24, 1974,” CF 12.

Wriston flew to London to meet with Bank of England governor Gordon Richardson, who was opposed to the NYCH's rule change. Wriston in effect told Richardson that the British banks either had to accept the decisions unilaterally made by the NYCH or were free to set up their own eurodollar clearing system (Zweig 1995:459). The British went with the former, as they did not have the stomach to take on the credit risk associated with setting up their own payment system.

In the face of the opposition, the NYCH in August set up a committee to ponder the recall rule.³¹³ It concluded that “nothing in the present rules indicates any intention that a CHIPS [...] payment be considered as being anything less than final and binding. This understanding has also been the accepted practice of the market.”³¹⁴ The protection that the Clearing House member banks had sought to create for themselves through the rule change, the committee argued, might largely be illusory, because of “the need to observe reasonable time limits for exercise of the right of recall.”³¹⁵ The foreign banks might still “seek to establish alternate dollar clearing systems; if successful this will result in the loss of the important clearing function to NYCHA members.”³¹⁶ On October 3, 1974, the Clearing House Committee decided to scrap the recall rule once markets had calmed down.³¹⁷ On November 8, the Clearing House sent out a press release that foreign payments over CHIPS were back to the status quo ante Herstatt.³¹⁸

³¹³ Clearing House Committee Meeting Minutes, August 28, 1974, pp. 81–82, CM 14.

³¹⁴ J. D. Zutter to Gordon T. Wallis, September 13, 1974, p. 2, folder “September 25, 1974,” CF 12.

³¹⁵ *ibid.*, p. 7.

³¹⁶ *ibid.*, p. 7.

³¹⁷ Clearing House Committee Minutes, October 3, 1974, p. 85, CM 14.

³¹⁸ New York Clearing House, Press Release, November 8, 1974, folder “November 27, 1974,” CF 12.

Conclusion

In the postwar period, no new form of private money fulfilled all functions of money (store of value, means of payment, unit of measurement). Instead, each new form fulfilled one of these functions. Changes in one form could provoke changes in another form, across the functions of money.

In the late 1960s, the growth of eurodollar instruments as a new store of value put pressure on the paper-based payment system organized around the New York Clearing House. The havoc that a paperwork crisis could cause was clearly visible to the Clearing House members at the time, as the New York Stock Exchange and its member firms were roiled by failures in the settlement of stock certificates. The rise of the eurodollar money-market also lent new urgency to old complaints by U.S. banks that the payment system for dollar transactions abroad worked with two kinds of money: a slower, i.e., less money-like, form for them, with settlement on the next day; and a faster, i.e., more money-like, form for foreign banks with same-day settlement.

Different factions within the Clearing House membership struggled over the appropriate response to the problem. One approach understood the problem as an economic one. According to this view, the working of the payment system had profound implications for the allocation of risk and the stability of the financial system. Next-day settlement for at least some participants appeared sensible because it allowed the Clearing House members, through whose accounts at the Federal Reserve final settlement took place, an extra day to make sure that all payment promises could indeed be honored. Failure to settle with the Fed on the part of, for example, Citibank was a thought that deeply disturbed experts. It would have been to the financial system as a sudden, unexpected closure of Penn Station would have been to the railway system.

The competing approach understood the problem as a purely technical one. From that vantage, payments were merely the logistical appendage of financial transactions, essentially a book-entry procedure. The solution to payment problems thus understood was to improve the system for storing, retrieving, and communicating data between banks. While the economic approach did not find a proposal around which to cohere, the technical approach developed a dynamic of its own. The purchase of hardware, writing of software, and connecting of wires progressed at a fast clip, and in 1970 the Clearing House Interbank Payment System became active.

Just like the money markets, CHIPS was created without public debate or legal change. But while the money markets had taken the form of private contract, CHIPS took the form of private law. Every participant had to accept a set of rules upon joining, and there was a clear hierarchy of participants, with the Clearing House members on top. They set the initial rules, had the right to change them, and decided which banks could join the payment system. While money-market participants were uncertain about their roles and the norms that should govern their interactions—as was shown in chapter 3 through the conversation analysis of the panel discussion in Detroit—, every bank that joined CHIPS was presented with a definition of roles and norms in the new payment system. When the first cases involving CHIPS were brought before U.S. courts, the state gave its backing to the private law that had been set by the Clearing House.

In the crisis of 1974, the actors at the top of CHIPS suddenly realized that the payment system was not only a technology but also an economic institution that allocated risk, and that did so—given the daily volumes of payments going through CHIPS after four years of rapid growth—on a vast scale. When Herstatt went bankrupt and its correspondent bank in New York

failed to make payments that other banks had counted on receiving, the bankers at the helm of CHIPS found the rule for dealing with such a situation, which had been written by computer engineers, economically unworkable. Instead of unwinding the previous payments, the NYCH members, after conducting rapid credit judgments, made the outstanding payments to all recipients that they deemed solvent.

The Clearing House members solved the first crisis of the new payments system by acting mostly in the interest of the system and against individual member banks' short-term self-interest. This outcome stands in stark contrast to the actions taken by the Clearing House members during the simultaneous crisis of the money markets. The same Walter Wriston who drove a hard bargain against the Federal Reserve when it came to stabilizing the money markets took tremendous risks to stabilize CHIPS. This contrast powerfully illustrates the sociological argument that the transformation of the financial system depended not so much on the rise of greed as on the specific, changing social relations in which bankers acted.

Chapter 6: Conclusion

In *The Wealth of Nations* (2000), Adam Smith called money “a sort of waggon-way through the air” (p. 349). This was indeed, as Smith (2000) suggested, “so violent a metaphor” (p. 349). It fused a specific technology that had just undergone an innovation—a decade before Smith’s publication, the wooden wagon ways had been reinforced with iron—with something timeless, ubiquitous, and necessary. Contemporary analysts of money—whether consciously drawing on Smith or not—also use the metaphor of air. Martijn Konings recently stressed the importance of studying money by stating: “[I]liquidity is like oxygen: a temporary absence of it will kill off even the most robust organism, cutting short what might have been a long and productive life” (Konings 2017:n.p., see also 2018).

This dissertation has been concerned with the first half of the metaphor: the specific technologies of money. As Smith suggested, these change over time. I have explored the emergence and development of new forms of money in the postwar U.S. as a social phenomenon. In an even more direct sense than a railway, money is a social construction. The forms of money that emerged between 1945 and 1980 possessed, other than for example gold, effectively no qualities outside their use as money.

Specifically, I have studied the commodification of two functions of money: as a store value (through the emergence, after 1945, of a set of so-called money markets such as repurchase

agreements, negotiable certificates of deposit, and eurodollars) and as a means of payment (through the Clearing House Interbank Payment System). In the money markets, banks and other financial firms, nonfinancial corporations, and government agencies borrow and lend for short periods of time, often only for one day (so-called overnight transactions). None of the money markets existed in 1945. Today, they make up the majority of all money claims denominated in dollars. Through CHIPS, financial firms make virtually all foreign payments denominated in dollars and many large domestic payments. It processes almost as many transactions as the publicly operated payment system, FedWire.

In normal times, these forms of money are taken for granted. They provide and transfer the liquidity that is essential for lending and investment across the economy. In crises, their freezing can bring to a sudden stop the financial system built on top of them. For the money market, this possibility became clearly visible in the crisis of 2008 (Brunnermeier 2009; Gorton 2010; Tooze 2018). The private payment system went through a serious episode of stress in 1974 (Zweig 1995:455–61).

This dissertation has traced the emergence of the new forms of money as an eventful process. While, at an abstract level, certain problems recurred to face actors and certain mechanisms appeared repeatedly, the creation of each new form of money was not simply a new performance of an unchanging script. Instead, the way in which the more recent of the new forms of money came into being was conditioned by the previous struggles and agreements over the new forms that had preceded them. In the process, even core characteristics of actors such as the commercial banks changed. In this conclusion, I will summarize the eventful account that I have set out in the empirical chapters, before considering the theoretical contributions and the implications for contemporary political struggles over money.

Summary

The new forms of money emerged in a context of unprecedented state control over money. In the late 1940s, the price of money was set by the U.S. government. Only with the Federal Reserve–Treasury Accord of 1951 was it allowed to fluctuate. The unpegging of the interest rates had been pursued with zeal by the Federal Reserve; the commercial banks mostly stood on the sidelines. More generally, the major commercial banks played a passive and conservative role for most of the 1940s and 1950s. The first new money market, in federal funds, was initiated by a brokerage firm; a second money market, in repurchase agreements, by government securities firms and corporate treasurers. Each creator mobilized pre-existing social relationships to attract enough funds to the new market to make it sufficiently money-like for private actors to join. These new forms of money did not arise by way of a return to the middle of the 19th century, when banking had been essentially unregulated. The Federal Reserve was not dissolved nor was deposit insurance abolished nor did the mountain of government debt disappear over night. Instead, the postwar monetary innovations took the form of private contract or private law piggybacking on state financial instruments. This relationship could be seen as complementary or parasitic. That the Federal Reserve in the 1950s saw it as the former helps to explain why the state did not stop either market. In particular, the Fed encouraged the growth of repurchase agreements, which provided the government securities dealers with easier funding. From the Fed’s vantage, a liquid market in government securities promised to support the implementation of monetary policy and the financing of the government. By the end of the 1950s, the major commercial banks came to understand the new forms of money as destabilizing the financial system. In an important confidential communication to the Federal Reserve, they cast themselves as defenders of the old monetary system—claiming to follow not only the letter

but also the spirit of the New Deal laws—and called on the central bank to reinstate the old monetary order.

In a dramatic example of the dynamic quality of the process in which new forms of money emerged in the postwar U.S., the major commercial banks inverted their goals within just four years around 1960. When the Federal Reserve did not engineer a roll-back of the new forms of money but instead supported their growth, the commercial banks saw the relative strength of their funding in rapid decline and reacted by beginning to issue new money-claims themselves. While the previous effort to reinstate the old monetary regime had been coordinated through the Clearing House, its member banks acted individually in creating new forms of money; they used the Clearing House merely as a forum for hammering out logistical details of the new instruments. The decisive innovation was the negotiable certificate deposit, introduced by Citibank in 1961 and imitated within hours by the other major commercial banks. It attracted private investors by exploiting a legal loophole and by enticing a dealer firm, through an unsecured loan in violation of corporate policies, to make a market in the instrument. The Federal Reserve did not block the instrument, understanding it as a solution to the funding crisis that threatened the viability of the commercial banking system. That the major commercial banks—pillars of the old regime—suddenly created new forms of money within the crevasses of the old system destabilized social relationships and norms across the financial sector. Financial actors renegotiated their positions, but without reaching agreement on new stable roles, and called for governance changes as they anticipated the crisis potential of the new regime, but did not achieve them.

The first major crisis of the new regime took place in 1974, when losses at Franklin National Bank sparked a run on several American commercial banks through the money market

that, according to the internal estimates of the Federal Reserve, threatened the stability of the overall financial system. In its presentations to the public, however, the Federal Reserve hid the money market run and framed the crisis instead as a problem limited to an individual bank, of a kind anticipated by the New Deal legislation and amenable to a resolution with existing crisis-management tools. Behind the scenes, the Fed simultaneously sought to enroll the Clearing House banks in a rescue operation for the money market, but the shape of that market and the dynamics of the 1974 crisis put the Clearing House member banks, all of them very large in size, in a position of strength; they actually found it easier to fund themselves on the money market as a result of the flight to safety sparked by the problems at Franklin and other medium-sized banks. Nor did the Fed's appeal that the Clearing House act in the interest of the overall financial system have much impact. Exploiting that the Federal Reserve had publicly committed itself to a framing of the crisis that limited its room for maneuver, the Clearing House banks walked the Fed down the path to a state-financed stabilization of the money market with effectively no risk sharing by the private actors. That the 1974 crisis was resolved in this way, without causing any losses to money-market investors even though their money claims had not been legally protected, increased financial actors' confidence in the money market and enabled its future growth.

This crisis outcome depended on the specific way in which the money market had emerged and developed. A virtually simultaneous crisis in the private payment system in 1974 was resolved by the major commercial banks taking on tremendous risks. The payment system, CHIPS, had been created in a concerted, collective effort by the Clearing House in the late 1960s. It took the form not of private contract but of private law. The CHIPS rule for responding to the failure of a participant to make payments, however, was judged potentially catastrophic by the Clearing House leadership during the crisis. That rule had been written by the computer

engineers who set up the system. In the crisis, the heads of the major banks concluded that, if the largest participants in the payment system followed the rule, the system would collapse. Even in its most infrastructural function, as a means of payment, private money was disclosed an economic mechanism that allocated tremendous risks and was managed through contentious and highly consequential social interactions.

Contributions

Most concretely, my findings help to fill a twenty-year gap in sociological explanations for the financialization of the U.S. economy. Existing explanations that stress political pressures (Krippner 2011) and financial engineering (MacKenzie 2006) only set in ca. 1970, at the beginning of what is often understood as the “pivotal decade” (Stein 2010) in the transformation of the U.S. economy after World War II. But quantitative measures of the financialization of the U.S. economy—developed by Krippner herself (2005, 2011:27–57) and other scholars such as Thomas Philippon (2015)—do not show a jump in the 1970s but instead a continuous trend beginning soon after the end of World War II. In Carruthers’ words, “the financial sector [...] started to grow again in the 1950s” (2015:392). By illuminating the emergence of the money markets in the 1950s and 1960s, I contribute to our understanding of the initial phase of financialization.

More abstractly, much sociological research on money has sought to define what makes something money and to set it apart from things that are taken *not* to be money, e.g., credit (Dodd 1994; Ingham 1996; cf. Carruthers 2005). This dissertation has purposefully dodged the question. One of its basic contentions is that not only sociologists but also social actors struggle

over what defines money, and that one fruitful way of sociologically studying money is to trace these struggles.

In every empirical instance of a new form of money studied in this dissertation, actors importantly used a strategy that is typically stressed by scholars other than sociologists. The innovators discovered arbitrage opportunities, as economists like to point out; they exploited legal loopholes, as legal scholars stress; or they used the transformative potential of new technologies, as historians of technology emphasize. But in each case, such a cognitive insight was not enough. On the one hand, the insight did not, on its own, suffice to attract enough *private participants* to the new form of money. A financial instrument can serve as a store of value, and a payment system can serve as a means of payment, only if there are sufficient other participants with whom to transact. Even more so than, say, derivatives, money depends on a liquid market. On the other hand, the *state* always stood ready in the late 20th century U.S. to stomp out money that it deemed illegal. Inventors of new forms of money had to find a way to avoid being seen by the agents of the state as counterfeiters. Most challenging of all, the creators of new money needed fulfill both imperatives *simultaneously*: convince private actors that an innovation worked enough like money to join, and convince state actors that it was not too much like money to be counterfeiting.

I have argued that creators of private money can overcome the first problem by mobilizing preexisting social relationships. No new form of money was created by a new entrant into the financial sector. Instead, the money markets repurposed well-established social ties and drew on existing relations of trust. The federal funds market initially was mainly a market between the largest New York City banks, which were tied together in the New York Clearing House, and their correspondent banks, which were often connected through decades-long

histories of economic transactions. The market in repurchase agreements began as an appendage of the market in short-running government securities. In the traditional market, corporate treasurers bought government securities from specialized dealers as a store of value. Using the same social ties, they went on to engage in repurchase agreements with the dealers. The market in negotiable certificates of deposit got off the ground only when Citibank enrolled a securities form to make a market in the new instrument. In the case of the new means of payment, CHIPS, the social ties on which the innovative form of money depended were even stronger and formalized. CHIPS was operated by the Clearing House; the participation of its members with their many large payments every day guaranteed that, for almost every U.S. bank above a certain size, it would make sense to join the payment system.

My account has shown that the second problem—avoiding sanctions by the state—could be overcome when the state conceived of a new form of money primarily through a frame other than money. In the case of the repurchase agreement, the Federal Reserve saw the new instrument as beneficial to the Fed's functions as the fiscal agent of the U.S. government and in implementing monetary policy through the buying and selling of Treasury bills. The repurchase agreement, so the thinking went, would provide the government securities dealers with more plentiful funding; this would, so the Federal Reserve hoped, allow the dealers to make a more liquid market in government securities, increasing its capacities to absorb new government debt and to find buyers and sellers for existing government debt. In the case of the negotiable certificate of deposit, the Federal Reserve did not only let the new instrument stand but actually cheered on its creation. In another of its functions, as bank regulator, the Federal Reserve had become concerned about the ability of banks to fund themselves. Creating a version of the

certificate of deposit that was more money-like and thus enticed additional customers to provide the banks with funds appeared as a way to solve the problem.

The inventors of the new forms of money succeeded in navigating these contradictory imperatives by acting outside public purview. In stark contrast to the 19th century, when the form of money had been a salient topic of public debate, the issue was negotiated in the realm of private contract and private law in the second half of the 20th century.

With these insights, the dissertation contributes to broader debates about the role of the state in capitalism (Block 1977b; Morgan and Orloff 2017; Quinn 2017, 2019; Tooze 2018). My findings support the argument that, in analyses of contemporary market societies, it is an oversimplification to equate the private sector with commodification, the state with social protection, and to understand the social process over time as a kind of pendulum swing between the two poles (cf. Block 2003; Panitch and Konings 2009).

The creation of new forms of money entailed both commodification and a strong role of the state, though usually not one of direct control. The new forms of money did not roll back state instruments of finance but piggybacked on them. The first new money market, in federal funds, was a market in deposits at the central bank; the repurchase agreement was pioneered by securities firms that specialized in government securities; the final settlement of CHIPS took place through the government-owned payment system FedWire. Even where there was no direct link between a new form of money and a state instrument of finance, there was often a crucial indirect connection: many of the new instruments were liabilities on the balance sheets of institutions that were, at least in part, backstopped by the government because they also engaged in more conventional financial activities (King 2016:263–64).

If we are looking for a visualization of the “uneven and unstable articulation between financial markets and formal governance” (Carruthers 2005:371), it would not so much be a pendulum swinging back and forth as an entanglement that deepens. The depth of that entanglement became visible during crises of money, e.g., in 1974 and 2008. While the state had little power over the new forms of money during normal times, it took full responsibility for them in crises.

Political Implications

If the creation of a new form of money depended mainly on the economic power of its creator and on its ability to enroll many participants, Facebook’s proposal of the Libra currency in 2019 should have been a success. Yet it appears that the introduction of Libra will be delayed, if it will happen at all. Facebook’s experience serves as a reminder of the profound problems that the creators of new forms of money face.

This dissertation has shown how, during the period from 1945 until 1980, several private companies succeeded in creating new forms of money. They did not seek to establish a new unit of account but adopted the designation as dollars. They did not frame their attempt openly as the creation of a new form of money, but as efforts to improve the funding of firms on which the U.S. government depended for the debt financing of its budget, the implementation of monetary policy, and the maintenance of the financial system. The successful creators of new forms of money did not try to enroll many money users making small payments but few money users making very large payments. All these choices allowed for the creation of new forms of money to take place outside public purview, where its chances of success were comparatively high.

After decades in which there was little mobilizing around the question of what counts as money—public debate, for the most part, focused on the narrower question of keeping interest rates low—, recent years have not only seen attempts to introduce new currencies such as Libra but also efforts to re-politicize the question. In particular, Modern Monetary Theory has attracted considerable attention from progressive politicians and activists. My findings can inform attempts to democratically transform what counts as money in two ways. First, the dissertation underlines that any effort to translate political mobilization into effective change would have to engage with a host of technical difficulties. Even the New York Clearing House, the collective actor that was at the center of the private money system in the 1970s, found it necessary to tread with care and to allow for long transitional periods when changing the payment system. Proponents of Modern Monetary Theory would have to negotiate the tension between urgent political mobilization and the grinding politics of implementing change. Second, many of the mechanisms that helped to commodify money between 1945 and 1980 could plausibly appear in reverse during an attempt to decommodify money. If the character of money were to change profoundly, it would almost certainly force changes in the financing of the government and the provision of credit as well. Those who try to build a railway through the air should anticipate opposition from those who currently operate and use the wagonway.

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