

Retrospectives

Economists and the Fed: Beginnings<sup>1</sup>

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This feature addresses the history of economic words and ideas. The hope is to deepen the workaday dialogue of economists, while perhaps also casting new light on ongoing questions. If you have suggestions for future topics or authors, please write to Joseph Persky, c/o Journal of Economic Perspectives, Department of Economics (M/C 144), University of Illinois at Chicago, 601 South Morgan Street, Room 2103, Chicago, Illinois 60607-7121.

### The National Banking System

The Federal Reserve Act of 1913 was the culmination of a decades-long movement for banking reform that gained momentum after the 1907 banking crisis. As various proposals for reform were being considered, the National Currency Act of 1863 and the National Banking Act of 1864 were still setting the framework for America's banking system.

The "national banking" system arose out of the fiscal strains of the Civil War. An immediate casualty of war was the gold standard, whose suspension made room for a massive issue of unbacked government currency known as greenbacks. Another casualty was the state bank note, taxed out of existence in order to make room for the national bank note backed initially by collateral of a special limited issue of 2 percent government bonds. The intention was to support the market for government bonds issued to finance the war effort, but the long-run consequence was to fix the supply of note currency. Even after redemption of the greenback issue and successful return to the gold standard in 1879, the quantitative constraint on national bank note issue remained. It is because of this fixed note supply that the national banking

system can be said to have been founded on the “currency principle,” which understands bank note currency as analogous to government-issued fiat currency, in the sense that it is supposed to retain its value only because it is kept scarce.

Not only was the quantity of bank notes fixed, but rigid reserve requirements also limited the elasticity that could be achieved from expansion and contraction of bank deposit money. What limited elasticity there was in the system came from pyramiding of reserves, by means of which country banks could count deposits in New York as reserves. It was this precarious pyramid structure, combined with the inelasticity of the underlying reserves, that impressed observers as the fundamental weakness of the system. “Like an inverted pyramid upon its apex, the whole structure of bank credit in the United States rested upon the cash reserves of the New York national banks” (Young, 1924, p. 302).

The problem was not just inadequate reserves in times of stress, a problem that bankers found ways to mitigate by issuing various forms of temporary emergency currency,<sup>2</sup> but also excess reserves in times of slack. The most acute observers understood the flow of excess reserves to the New York money market, where it became available as call loans to speculators in capital markets, as the upside counterpart of the downside potential for crisis. Indeed, the fact that deposits on New York banks could be counted as reserves created a perverse elasticity in the system. A fixed quantity of reserves could support a greater expansion of bank credit in times of slack when cash reserves were in New York than in times of stress. The problem of inelasticity was exacerbated by the unusual seasonality of payment flows in the U.S. context, which meant that the vulnerabilities of the system were regularly tested by large clearing imbalances. In the late nineteenth and early twentieth century, the U.S. economy was still substantially agricultural and so experienced large payment flows at harvest time. The seasonal shortage of reserves was

reflected in a seasonal spike in interest rates in New York, a pattern caused by banks gathering needed reserves in the face of payment outflows. Given the inelasticity of domestic monetary reserves, the effort to attract reserves quite regularly involved gold inflows from the more elastic international money market. In this way, the regular stresses and periodic crises within the United States aroused concern abroad as well.

Given all this, it might well be asked, why was reform so long in coming? The reason is that the system had two politically attractive features that remained compelling for a long time. It was both decentralized and apparently self-regulating (if somewhat violently so). Suspicion of central banking has deep roots in the traditional American suspicion of concentrated power, and in this respect, the concentrated political power of government in Washington was not much less suspect than the concentrated financial power of Wall Street in New York. To small Western bankers and their clients, the seasonal spike in interest rates, just when credit was most needed to move the crops, was evidence enough that Wall Street's power was already excessive. One could only imagine what it would do if ever it got its hands on a truly central bank!

Given the daunting political obstacles, it might well be asked, how was reform finally possible? It almost wasn't. The first reform plan, carefully developed by the National Monetary Commission under the leadership of Republican Senator Nelson Aldrich and then embodied in the Aldrich Bill, failed to pass in 1912 largely because it was seen as a creature of Wall Street. And yet, when Democratic Representative Carter Glass took the lead, working with the economist H. Parker Willis, the Federal Reserve Act was written and passed within a year. One reason was President Woodrow Wilson's insistence on placing the politically appointed Federal Reserve Board above the presumptively banker-dominated Reserve Banks. Another reason was the rhetorical success of the "real bills doctrine," introduced into the bill by Willis, in signaling

to the country that the new Federal Reserve System would stand for business interests against both big government in Washington and big finance in New York. This is what Willis (1914, p. 18) meant to signal when he retrospectively described the act as “in fact and in the best sense of the term a ‘business man’s measure.’”

#### The Economists’ Debate: Laughlin

The most prominent economist advocate of the real bills doctrine, J. Laurence Laughlin, professor at the University of Chicago and teacher of H. Parker Willis, was also the most prominent economist spokesman for the business interests that opposed centralization and active money management. A long-time defender of the gold standard, Laughlin had opposed William Jennings Bryan’s populist attempt, in his famous “Cross of Gold” speech to the 1896 Democratic National Convention, to address the perceived problem of currency shortage by monetizing silver. Laughlin’s own preferred approach to the problem, which he began to develop in his report to the 1898 Indianapolis Monetary Commission (Laughlin, 1900), focused not on the money standard but rather on the inelasticity of bank reserves, which he proposed to overcome by adopting a version of the real bills doctrine.

The traditional real bills doctrine held that the monetary liabilities of the banking system should ideally be backed by holdings of short-term self-liquidating commercial bills. The idea was to ensure a regular flow of funds back to the banks in repayment of maturing bills, which inflow would be available to pay out bank deposits as needed, so ensuring that the bank could meet its obligations. The key assertion by advocates of the real bills doctrine was that a banking system built on commercial bills would be able to adjust elastically to the changing credit needs of the economy without any need for central active management. In this respect, the real bills

doctrine was supposed to be an alternative to central banking. It was also supposed to be an operational form of the “banking principle” that understands bank note currency as analogous to bank deposits, in the sense that currency retains its value not by virtue of its scarcity, but rather by virtue of ultimate convertibility into gold. As such, the real bills doctrine was an alternative to the “currency principle” that underlay the fixed currency issue of the national banking system.

In Laughlin’s hands, the traditional real bills doctrine provided an argument for privileging private commercial credit over all other forms of credit, including both government credit and “speculative” credit to Wall Street. The national banking system had been established to privilege government credit and seemed in practice to privilege speculative credit because of Wall Street control over bank reserves. Laughlin’s idea was to change all this by establishing, as a matter of law, that certain types of business credit could always be converted into bank reserves at a local reserve bank. In this way, small bankers and their business clients would never again have to worry about the availability of credit, and never again have to rely on the whim of some faraway Wall Street banker. Even if a bank had inadequate reserves to support additional lending, it could go ahead and make the loan with the assurance that the loan itself could be used to obtain all the reserves needed.

In banking lingo, the idea was that a local bank could “discount” the business credit -- in effect, borrow reserves from the local reserve bank at the “discount rate” of interest and lend them on to the borrower at the market-determined rate of interest. The reserve bank could guarantee discount at a fixed rate because of its ability to create new reserves from thin air, an alchemy made possible by the fact that bank reserves were nothing more than its own liability. Under the national banking system, reserves were monetized government credit. Under the reformed system, bank reserves could also be monetized private business credit. Instead of

being rigidly fixed by the quantity of eligible outstanding government bonds, the quantity of bank reserves would fluctuate with the fluctuations of business credit, the better to meet “the needs of trade.”

In the context of his times, the problem that faced a reformer like Laughlin was how to provide more elastic reserves without losing the politically attractive decentralized and self-regulatory character of the old system. In effect, Laughlin hoped that the real bills doctrine would do for the new elastic system organized around the banking principle what the fixed note issue had done for the old system organized around the currency principle. It would keep the politics out of money.

The Economists’ Debate: Fisher

Within the emerging profession of academic economics, Irving Fisher came forward as the most prominent opponent of Laughlin.<sup>3</sup> Even before the 1907 financial crisis put banking reform on the realistic political agenda, Fisher had begun reviving the quantity theory of money from the ignominy of Bryan’s populist advocacy, and this brought him directly in opposition to Laughlin. At a panel at the American Economic Association meetings of 1904, the two men met to discuss Laughlin’s 1903 book Principles of Money. This initial encounter set the intellectual frame within which American economists understood monetary issues and subsequently also the frame within which they understood the issue of the founding of the Fed (Fisher, 1905, 1911b; Laughlin, 1905, 1911). Whereas Laughlin discarded the currency principle but held on to the idea of monetary self-regulation, Fisher held on to the currency principle and embraced instead the idea of active management by a central bank.

In Fisher's mind, the problem with the national banking system was not that the quantity of money was fixed exogenously (inelastic), but that it was fixed without reference to the state of the economy. In this respect, Fisher proposed that the quantity equation  $MV + M'V' = PT$ , where  $M$  is currency,  $M'$  bank deposits,  $V$  and  $V'$  velocity multipliers -- could be used to direct exogenous changes in the quantity of money to achieve desired policy goals. The policy goal he consistently advocated was price stabilization. His Purchasing Power of Money (1911a) can be understood as an attempt to put forward his own statistical and theoretical basis--index numbers and the quantity theory of money--in the aid of his own preferred policy goal, even before the Federal Reserve was established.

Because Fisher's work presumed the existence of a central bank, it had little influence on the debate over the founding of the Fed. Even more, because his favored policy of domestic price stabilization was potentially inconsistent with the gold standard, adherence to which was an article of faith even for those (like Laughlin) who opposed a central bank, Fisher's views were politically out of bounds from the start. The real importance of Fisher was the prospect, which he seemed to exemplify, that a central bank might conceivably be operated on a scientific basis, using the most advanced statistical and theoretical tools to guide its intervention. In Fisher's hands, economic science offered the prospect of keeping the politics out of money even while embracing centralization and active management. He showed the way forward. It would be up to later authors to inquire whether Fisher's version of the quantity theory, and his "dance of the dollar" theory of business fluctuations, was science enough.

The Founding of the Fed: Warburg



Both Laughlin and Fisher took the national banking system as given and looked for reforms that could be grafted onto that system to make it work better, where “better” meant more elastic provision of business credit and more reliable stabilization of prices, respectively. By comparison, the reform proposal that emerged from Wall Street itself, a proposal to construct a central bank on the European model, was much more radical. Paul Warburg, arrived from Germany as partner at Kuhn, Loeb and Company, was the chief spokesman for this point of view, and the most important intellectual force behind the proposals put forward in the failed Aldrich bill of 1912.

For a Wall Street banker, and a European, the essential feature of the Federal Reserve was the centralization and mobilization of international (gold) bank reserves to give the central bank the capacity to contain domestic credit fluctuation, the better to prevent spillover into international markets of the regular stresses and periodic crises of the American banking system. Toward that end, Warburg envisioned the creation of an active national bill market, with the idea that bank bill holdings could serve as a secondary reserve, salable in times of stringency to move reserves where they were most needed. He further envisioned supporting the bill market by giving bills privileged access to the discount window. Control of the discount rate would then be the primary instrument through which the central bank would intervene to influence the market rate of interest.

At first glance, Warburg’s proposal does not readily fit into the intellectual frame of the economists’ debate between Laughlin and Fisher. Like Laughlin, Warburg’s proposal can be understood as an operationalization of the banking principle, but without the passive accommodation of the real bills doctrine. Like Fisher, Warburg’s proposal was for central banking and active management, but without Fisher’s commitment to price stabilization by

control of the money supply. Yet, although Warburg's radical proposal deviated farther from the national banking system than either Laughlin or Fisher dared, it was also a framework within which the concerns of both men could be met, at least potentially. Warburg's bill market could provide the elastic provision of business credit that Laughlin wanted, and Warburg's discount rate control could be used to stabilize prices as Fisher wanted. Seen in this light, Warburg's radical proposal looks like a potentially winning compromise, and so it proved to be once the politics got sorted out and once Fed operations began.

Laughlin won the argument over the language of the Federal Reserve Act which committed the system to the goal of "accommodating commerce and business" by passively providing reserve credit for "agricultural, industrial, or commercial purposes." He won also the argument that there should be decentralization into twelve regional Reserve Banks, on the view that local bankers were the best judges of the legitimate credit needs of their clients (see also Sprague, 1909). Nevertheless, and notwithstanding the language of the act, over time the Fed became de facto committed to Warburg's goal of active and central money management, with the New York bank playing the leading role under the leadership of Benjamin Strong (1930; Chandler, 1958).

#### Evolution in the Early Years: Strong

The Federal Reserve was established in 1913 for the explicit and narrow purpose of smoothing seasonal fluctuations, but it was called upon almost immediately to improvise mechanisms of war finance.<sup>4</sup> Throughout the war, monetary policy was subsumed to the goal of supporting the market for government debt (Harding, 1925), thus abrogating the real bills principles on which the Fed had been founded (Wicker, 1966, chapters 1 and 2). Peace brought

more improvisation, first directed toward stabilization of domestic cyclical credit fluctuation and then directed toward reestablishing the international gold standard. In all of these improvisations, the Fed was clearly exceeding its legislated mandate, but circumstances seemed to require it, and the Fed evolved to meet the changing circumstances.

The shift toward active and central management is easy to miss in the language of official documents, which necessarily continue to profess allegiance to the letter of the law. We see this, for example, in the careful language of the famous Tenth Annual Report (Federal Reserve Board, 1923), which clearly means to assert the case for activist open market operations, but finds it necessary to do so using the Laughlin-Willis-Glass language of providing for the legitimate credit needs of the nation. In a stroke of rhetorical genius, the report presents open market operations not as an activist policy intervention but merely as a way of testing the legitimacy of credit needs by altering the need for discounts.<sup>5</sup> Even so, a reader who is sensitive to the political minefields being avoided cannot miss the intent of words such as these (p. 277): “The objective in Federal reserve discount policy is the constant exercise of a steadying influence on credit conditions.” Benjamin Strong of the New York Federal Reserve bank clearly used his position as head of the Open Market Investment Committee (established in spring 1923) to conduct activist open market operations throughout the 1920s, notwithstanding the opposition he sometimes faced from real bills advocates in Washington.

The shift toward active stabilization did not mean acceptance of Irving Fisher’s framing of the stabilization problem. After the passage of the Federal Reserve Act, with language that appeared to endorse Laughlin’s conception of a limited role for the Fed, Fisher continued to push for active management and price stabilization. But his decision to push for legislation that would require the Fed to stabilize prices meant that it was impossible for Fed insiders to make common

cause with him.<sup>6</sup> They did not think the Fed was able to control the price level as readily as the quantity equation seemed to suggest, and anyway, they worried that a narrow focus on stabilizing prices would prevent the Fed from pursuing other desirable stabilization goals for which it was arguably better equipped. Nonetheless, Fisher's influence continued to be felt. More than anyone else, he put the issue of cyclical stabilization on the table, and his statistical and theoretical work set the pace for those who would pursue different policy goals using different instruments.

Where Fisher at Yale set himself up in public opposition to the Fed, Allyn Young at Harvard worked in private cooperation with the Fed's own attempt to develop a proper statistical and theoretical basis for its intervention.<sup>7</sup> Like Benjamin Strong, Young started with the British economist Ralph Hawtrey, whose writings emphasize the ability of the Bank of England to influence the domestic economy by influencing the rate of interest in the national (and international) bill market. Inspired by Hawtrey, Young's detailed and comprehensive Analysis of Bank Statistics for the United States (1928) can be understood as an attempt to develop the empirical basis for an alternative to Fisher's simple version of the quantity theory. The Fed also had its own statistical team, most prominently Walter Stewart at the Board in Washington and Carl Snyder (1927) at the New York Fed. Young (1927) wrote in opposition to Fisher's public campaign: "What the Federal Reserve Banks need most, therefore, is not more power or less power, or doctrinaire formulations of what their policy ought to be, but merely the opportunity to develop a sound tradition, and to establish it firmly." That's exactly what was happening inside the Fed during the 1920s.

The main practical problem in applying Hawtrey to the U.S. case was the failure of an active national bill market to develop even in the face of privileged discount treatment.<sup>8</sup> A

solution was found by operation in the government securities market instead, using open market operations, a technique not foreseen in the original legislation for the simple reason that World War I, with its attendant flood of government security issues, was also not foreseen.<sup>9</sup> The technique was different, but the basic idea remained the same, to use the Fed's control of bank reserves to influence the expansion of bank credit (Phillips, 1920). Here is Strong (1922, p. 263): "I think one should look upon the credit structure of the country as an inverted pyramid at the base of which is a foundation of bricks of gold which enjoy the peculiar power of sustaining each its own proportion of the entire inverted pyramid. Those bricks of gold are the bank reserves held by the Reserve Bank."

Strong's idea was to control (bank) credit by controlling (reserve) money. Significantly, this was supposed to be done by controlling the cost (discount rate) of reserves, not their quantity (Strong, 1922). Here we see the traditional central banker's emphasis on controlling the price of refinance, which can be understood as a way of operationalizing both the banking principle with its emphasis on elasticity and the currency principle with its emphasis on discipline. The central bank would discount freely, but at a rate that the central bank itself not only determined, but also could enforce in the market by open market operations. It's not the quantity theory, but neither is it real bills.

Even more, under Strong, the New York Bank operated not only de facto as a central bank concerned with stabilizing domestic credit fluctuation, but also increasingly de facto as a world central bank concerned with managing the transition back to an international gold standard. This further evolution in Fed function went even farther beyond the express intent of the original legislation and so required even more careful linguistic footwork. Even today, no Fed chairman would be comfortable explaining to Congress that the domestic interest rate has to

be changed for reasons of international monetary stability! How much more difficult was Strong's position as he found himself working with Montagu Norman at the Bank of England, convinced that international stability was ultimately in the best domestic interest but unable to say so out loud. Difficult as it already was to explain the extension of domestic credit to Wall Street, it was even harder to explain extension of credit to other sovereign nations, but that did not stop Strong from going ahead anyway.

## Conclusion

Among various contemporary accounts of the founding of the Fed, that of Laughlin (1933) and that of Warburg (1930) can be singled out as being of most interest for economists.<sup>10</sup> What is most remarkable is that despite their disagreements, even on the most fundamental issue whether or not the Federal Reserve Act of 1913 established a central bank or only a collection of semiautonomous reserve banks, both men vigorously claim personal responsibility for the act while diminishing the responsibility of the other! In retrospect, we can only bow our heads in awe at the political process that allowed both men to claim the outcome.

Moreover, as we have seen, both claims have merit. Following Laughlin, the language of the act envisioned the Fed as essentially passive and accommodating, confined to discounting eligible paper brought to it by others, reliant on qualitative eligibility rules to stabilize credit fluctuation, suspicious of long-term investments and speculative capital markets. But history shows that the language also left room for evolution of Fed practice in the direction envisioned by Warburg, which is to say in more or less the direction that Strong was taking the Fed in the years leading up to his premature death in 1928. Ironically, history also shows that the

evolution toward activism made room for Fisher and the currency principle tradition finally to enter the debate over practical policy, where they have remained ever since.

Take a moment to ponder Figure 1, which lays out in schematic form the main lines of intellectual cleavage during those years, lines that arguably still shape the way economists think about monetary problems. On the vertical axis, we see the fundamental theoretical cleavage between those (the banking school) who conceive of money as the highest form of credit, and those (the currency school) who conceive of money as paper gold. On the horizontal axis, we see the fundamental political cleavage between those who conceive of the monetary system as self-regulating and those who see the need for a visible guiding hand. The figure makes clear that Laughlin and Fisher were largely talking past one another, and also past the real economic forces that were shaping what actually happened. Note again, both men rejected not only the existing national banking system but also the Warburg-style central bank that eventually emerged! Such was the ambivalent relationship of economists with the Fed from the very beginning.

The figure makes clear the enormous evolution of thinking that took place in a very short time to meet changing circumstances that no one had anticipated when the Fed was founded. In the event, of course, it wasn't evolution enough. The Fed was ultimately not able to develop its own traditions, much less to establish them firmly, before worldwide Depression swept them all away.

## Figure 1

### Economists and the Fed

	<b>Self-Regulation</b>	<b>Active Management</b>
	<b>Decentralization</b>	<b>Centralization</b>
<b>Banking Principle</b>	<b>Real Bills</b>	<b>Central Banking</b>
<b>Private Credit Money</b>	J. Laurence Laughlin	Paul Warburg
	H. Parker Willis	Benjamin Strong
		Allyn Young
<b>Currency Principle</b>	<b>National Banking System</b>	<b>Quantity Theory</b>
<b>Public Outside Money</b>		Irving Fisher



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## Notes

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<sup>2</sup> Sprague (1910) recounts the various crises of 1873, 1884, 1893, and 1907. Typically emergency currency was issued by a bankers' clearinghouse against private debt collateral, such as commercial paper, not government bonds. The Aldrich-Vreeland Act of 1908 created for the first time a legal framework for this procedure.

<sup>3</sup>For more on Fisher, see Mehrling (2001) and the references therein.

<sup>4</sup>Wicker (1966) provides the best general history of this period, though he is usefully supplemented by Clark (1935), whom Wicker appears not to have consulted. See also Chandler (1958), Friedman and Schwartz (1963, chapters 5 and 6), D'Arista (1971), Yohe (1990), Wheelock (1991) and Timberlake (1995, pp. 254–73). Contemporary sympathetic critics include Reed (1930), Spahr (1931), Hardy (1932) and Harris (1933). Riefler (1930) and Burgess (1927) provide the views of contemporary Fed insiders.

<sup>5</sup> This is the so-called “scissors effect,” whereby a sale of government bonds that decreases available reserves tends to cause a more or less offsetting increase in discounts that increases reserves.

<sup>6</sup>Fisher (1934) provides a thorough but partisan history of the price stabilization movement. More balanced is Joseph Dorfman (1959, volume 4, chapters 11 and 12).

<sup>7</sup>On Young's monetary views and their relation to Hawtrey, see Laidler (1993) and Mehrling (1995, 1997, chapters 1–4). These are usefully supplemented by the newly discovered text of

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Young (1924). Unfortunately, Young's untimely death in 1929 prevented full development of his views.

<sup>8</sup> Hardy (1932) suggests that one reason for the failure was a holdover of attitudes from the national banking era. Discounts showed up on bank balance sheets as borrowing, and banks feared that borrowing might be seen as a sign of weakness (p. 247). Also, American firms were more accustomed to using book credit or direct bank borrowing to finance trade, and larger firms had access to direct borrowing in the commercial paper market (p. 244).

<sup>9</sup> It is of course ironic that the Fed found itself relying on operations in "speculative" security markets to influence conditions in "productive" business credit markets, and this despite continuing need to pledge public allegiance to the real bills principle of denying Federal Reserve credit for speculative purposes. Since a particular target of the real bills language had been the seasonal fluctuation of call loans, it is significant to note the revival of the call loan market in the 1920s (Reed, 1930; Clark, 1935). The fact that the New York Fed had in practice to conduct its operations in the security market meant that it had in practice to tolerate the institutions that supported the liquidity of that market, including call loans.

<sup>10</sup> West (1977) provides the best general history of the origins of the Federal Reserve. Owen (1919), Willis (1923), Glass (1927) and Stephenson's (1930) biography of Nelson Aldrich provide the perspective of Washington political insiders. Vanderlip (1935) provides the perspective of a Wall Street insider that reveals how correct were those who saw the Aldrich Plan of 1912 as a creature of Wall Street.