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Commentary

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Let me say straight off that Gilbert (1998) is a fine article. It is a clear and comprehensive study of both the issues and institutions of the payments system in the early twentieth century. Gilbert covers so much ground that my remarks necessarily address only a few of his topics. Other important topics, such as whether universal par clearance is a good thing, I must ignore here.

Virtually all early twentieth century writers on U.S. banking and the system of payments condemned the system of check clearing and collection that existed under the national banking system that was built on correspondent bank relationships. Jones (1931, p. 131), for example, grumbled, "Circuitous routing, pyramiding and decentralization of reserves, inelasticity of our currency and excessive collection and exchange charges, characteristic of the correspondent system, placed unbearable burdens upon business." Walter Spahr, author of the most comprehensive tome on the subject (1926, pp. 101, 103), referred to the "great defects" and "evils" associated with the old (correspondent) system of clearing and collection, as did many others.

More recent students of the American banking system have been kinder to the correspondent banking system. Although it was not without its problems, due in large part to the lack of a lender of last resort, the correspondent banking system is now recognized as a quite efficient mobilizer and allocator of funds across industries and regions (Sylla 1975). White (1983, p. 66) writes, "In spite of contemporary criticism, the correspondent banking system and the clearinghouses served the financial needs of the nation well." In view of the more

kindly light in which we see the system of interregional transfers and concentration of reserves under the correspondent banking system in the pre-Federal Reserve period, we might ask whether the pre-Federal Reserve system of payments was really as inefficient as its early twentieth-century critics claimed.

A check was defined as a bill of exchange drawn on a bank payable on demand. But, by common law, payment in full or at par was required only if the check was presented for payment at the bank against which it was drawn (the drawee bank). In-town checks posed no problem: They could be sent to a clearinghouse or presented directly by messenger. The difficulty came with out-of-town collections. As Gilbert describes, checks presented through indirect means, such as through the mail, did not have to be paid at par. Rather, an exchange charge could be deducted from the face value, reflecting in principle the cost of shipping cash to the collecting banks. The correspondent banking system played a fundamental role in the system of out-of-town collections. To avoid such exchange charges, out-of-town checks were usually collected through the correspondent system.¹ Watkins (1929, p. 105) notes that the use of correspondent channels for collection was "adopted whenever possible." An item for collection from an out-of-town bank would have been sent to the receiving bank's in-town correspondent who in turn would pass on the check to another bank in its correspondent network in the vicinity of the drawee bank. This bank might pass it on to another bank until ultimately the check would be presented to the drawee bank for payment. In return, the first bank would collect for other banks in the correspondent network.

This method for collecting out-of-town checks involved a lot of paperwork. In his report to the National Monetary Commission (1910, pp. 64-70), James G. Cannon details the *straightforward* collec-

¹ These "excessive" exchange charges did not seem all that high compared with potential handling costs. In the controversy about nonpar clearing after the Federal Reserve began its clearing and collection operations, several states passed laws explicitly allowing banks to make exchange charges. Maximum rates were fixed at 1/8 or 1/10 of 1 percent of the face value of the check (Jessup 1967, p. 11). Kniffin (1928, p. 310) quotes somewhat higher charges—1/20 to 1/4 of 1 percent. A later (1917) study put average exchange costs at \$1 per \$1,000—1/10 of 1 percent (Jones 1931, p. 177).

tion of a check drawn on an Ohio country bank and remitted to New York City through a Cleveland correspondent. To do it, “two checks had to be drawn, four letters had to be written, 8 cents in postage stamps were used, and seventy-five or more handlings of the check were involved by a score or so of clerks, in five different banks, located in three different cities.” Moreover, the check might travel a circuitous route from the depository bank to the paying bank. One of the more celebrated checks in banking history was one for \$43.56, drawn by Woodward Brothers of Sag Harbor, NY, and paid to Berry, Lohman, & Rasch of Hoboken. Cannon (1910, pp. 70-72) describes the check’s route from its depository bank in Hoboken to correspondents in Manhattan, Boston, Tonawanda, Albany, Port Jefferson, Far Rockaway, Manhattan, Riverhead, Brooklyn, and finally to the paying bank in Sag Harbor. Critics of the correspondent bank system of clearings and collections cited this example time and time again. Given the paucity of other examples, one might be suspicious of this example’s general applicability.

In any case, there does not seem to be a way to measure directly the alleged inefficiencies of the pre-Federal Reserve system of clearing and collection in terms of “unnecessary” administrative costs and long delays in collection. It’s difficult therefore to get any quantitative notion of how bad the correspondent check-clearing and collection system was.² However, even if we take the indictments by contemporary critics as having merit (one might prefer to remain a bit agnostic here), it does not follow, I believe, that any payments systems based on correspondent banking networks would have been grossly inefficient.

Consider the earlier system of making out-of-town remittances: This system was based on bank drafts, which personal checks began to displace toward the end of the nineteenth century. Within this system the process of settlement was quite simple. Maintaining accounts with correspondents in financial centers, such as New York City, allowed interior banks to sell drafts on New York funds to their cus-

tomers. If the receiving bank had an account with the same New York correspondent, payment could simply be accomplished through a book transfer. If the receiving bank had an account with a different bank, settlement between the two New York banks could simply be done through the clearinghouse. The links among financial centers and interior banks were quite extensive under the correspondent banking system, so virtually all banks had access to funds in major financial centers. An 1890 Comptroller of the Currency Report survey found that, of the 3,329 responding national banks, 3,147 banks had drawn drafts on New York City during the previous year. A 1925 survey found that 600 of 655 Georgia banks had New York correspondents, and 1,146 of 1,600 Texas banks had them as well. Only 832 of 1,896 Illinois banks had a direct New York City link, but 1,705 had Chicago correspondents (Watkins 1929, p. 141). Most interior banks had New York City correspondents, or at least ones in other regional financial centers.

The price of New York City funds was reflected in domestic exchange rates (quoted regularly in newspapers) and in commercial and financial periodicals. Sprague nevertheless observed, “There is no part of our banking machinery which has received so little elucidation as that of the domestic exchanges. Even for normal times the subject is obscure” (1910, pp. 2 and 3). This statement is still, by and large, true today.³ Similar to foreign exchange rates, domestic exchange rates fluctuated with changes in supply and demand within the bands set by the cost of shipping currency to and from New York plus lost interest on the currency in transit. If the New York City balances of a New Orleans bank began to rise because of collections there, it might sell exchange to other New Orleans banks whose New York accounts were running low. The quoted rates therefore appear to have applied to business between banks rather than being the direct charge to customers.

Based on 1859 estimates for domestic exchange, the 1890 Comptroller’s Report claimed the average exchange rate had

² Indeed, the circuitous routing of checks for collection may not have been inefficient at all. Weinberg (1997, p. 39) argues that the pattern of correspondent relationships was determined by the normal pattern of commerce. Circuitous check routings then simply indicated that there were exceptions now and then to the usual flows. In view of the existing structure, it was efficient to send these occasional items along with routine shipments even if they were not going by the most direct route.

Exchange charges might have reinforced network efficiency here by reducing incentives for depository banks to bypass the network.

³ Only two papers, of which I know, have recently examined this market: Garbade and Silber (1979), and Phillips and Swamy (1997).

decreased more than elevenfold by 1890 (p. 21). This dramatic fall was attributed to the retirement of state banknotes and the substitution of national banknotes circulating at par throughout the country. Garbade and Silber (1979, pp. 14-15) also add the fall in railroad freight rates in the early postbellum period. In 1890, the average cost of domestic exchange in the United States was calculated at 85 cents per \$1,000.00 (1/12 of 1 percent); however, the rates ranged as high as \$2.10 in Texas and \$2.00 in Arkansas, Nevada, and Arizona.

To examine more closely domestic exchange rates in the period before the Fed was founded, I've collected some figures from *Bradstreet's*, which reported them weekly from the early 1880s. I stop in 1917, when the Fed opened its wire system for reserve transfers, and domestic exchange rates essentially remained at par. Domestic exchange rates fluctuated over the course of the year with the "needs of trade," so to look at longer trends I sample the same period every year—the first week of June. Figure 1 shows the deviations from par for \$1,000 in New York City funds in various cities over time. Positive values indicate times when New York funds were at a premium locally. Negative values denote times when New York funds sold at a discount. The straight line in each graph is the trend line over the period.

First, note the levels. During the first week of June, New York exchange was generally at a premium, and on average that premium seemed to increase with distance from New York. But the interesting thing here is generally how low the premiums were: in St. Paul and Kansas City, for example, more or less around 50 cents (or .05 percent), in St. Louis about half that.

Second, notice the predominant downward trend in the exchange rates. There was no trend in Boston to be sure, where the rate fluctuated very close to par. But in Cincinnati, Cleveland, Chicago, St. Louis, Kansas City, New Orleans, Memphis, Atlanta, and spectacularly so in San Francisco, there was a downward trend. Indeed, in several cities—Boston, Cincinnati, Cleveland, St. Louis, New Orleans,

Memphis, Atlanta—the June premium seems to have settled at zero by the time the Federal Reserve was established. On the other hand, it should be noted that in a few other cities—Minneapolis, St. Paul, Omaha, Charleston, Portland—there was no distinct downward trend in June exchange rates. Their stability is a bit of puzzle, but Sprague (1910, p. 297) observed, "The quoted rates of exchange were often without much significance. The ordinary course of dealings was so completely disorganized in many places that the rates were purely nominal, representing little or no actual transactions."⁴

The data in Figure 1 are nominal values. If one adjusts for changes in the price level (using the Warren-Pearson wholesale price index), the convergence toward par is even more pronounced. This convergence in domestic exchange rates was moreover not just a June phenomenon. Figure 2 shows the price of New York exchange over time in Chicago, St. Louis, New Orleans, and San Francisco for the first weeks of February, June, October, and December. The range of exchange rates in each city decreased markedly. At the times when New York funds sold at a discount (as in Chicago, St. Louis, and New Orleans), that discount decreased during the period; similarly, at the other times of the year, the premiums decreased as well.⁵

The factors that might have caused this diminution (in absolute value terms) in domestic exchange rates over the period are not obvious. It could have been simply long-term changes in the seasonal demands for New York City funds and/or increases in the supplies of New York correspondent balances. But this seems unlikely since both premiums and discounts were decreasing over time in several cities. The less-than-universal character of the decline would argue against a general fall in shipping costs (if one takes the nondeclining observations as legitimate).⁶ Garbade and Silber (1979, pp. 4, 15) attribute the decline in the variability of domestic exchange over the course of the year in this period to correspondent banks' increasing role as market makers in exchange. This may have also had some

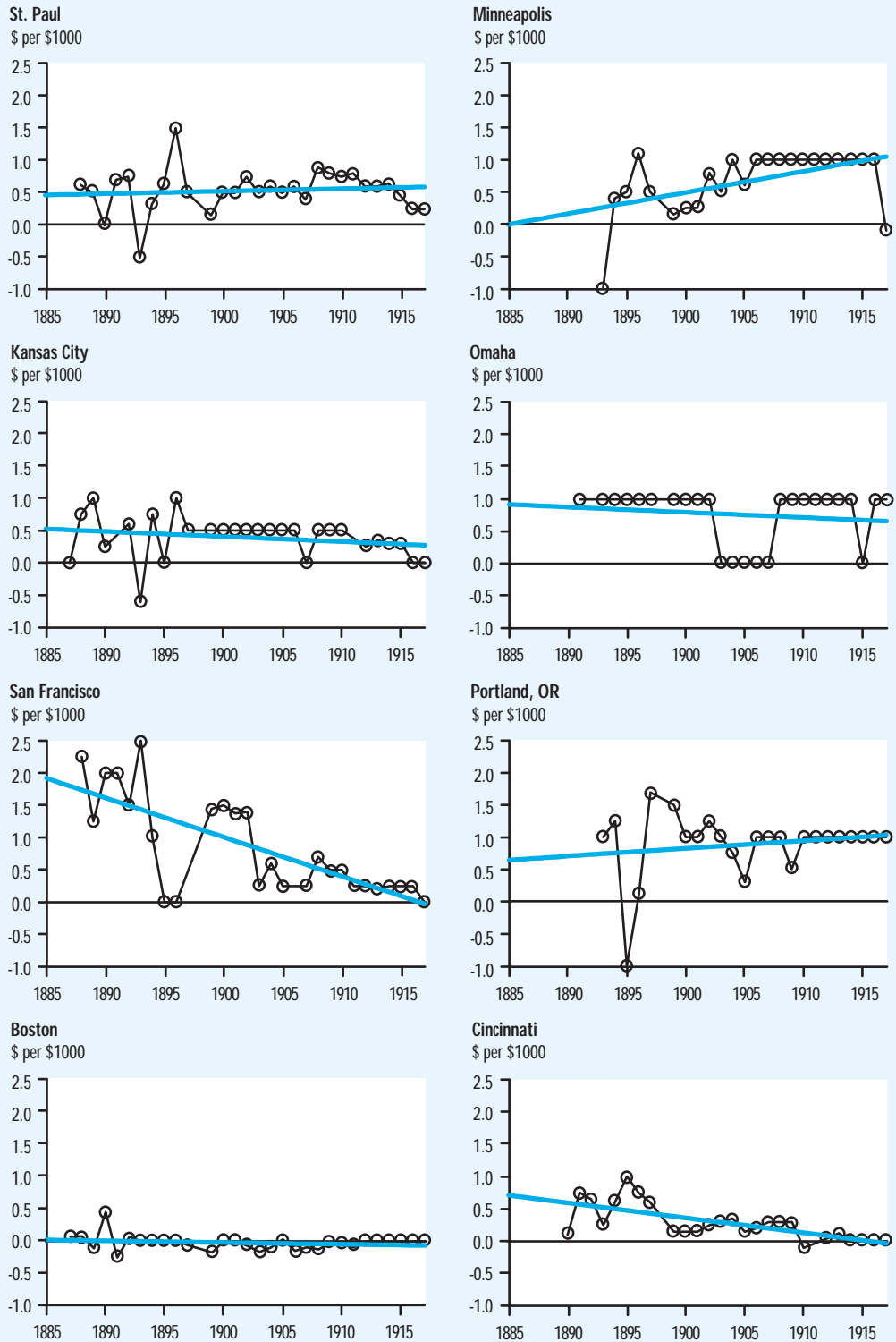
⁴ Also, rates in locations such as Minneapolis and St. Paul were quite different during a number of years. These apparently unexploited arbitrage possibilities might lead one to suspect that not all these series are completely reliable. Some local correspondents may not have been very assiduous in gathering information (see James 1978, pp. 255-62).

⁵ In addition, the violations of the currency shipping points declined dramatically over time. Use the 1910 figures that Gilbert quoted on the cost of shipping \$1,000 in currency between New York and Chicago (\$.50), and St. Louis (\$.60), and New Orleans (\$.75), and San Francisco (\$1.50), and the claim by Garbade and Silber (1979, p. 15) that real currency shipping costs stabilized after the early 1880s. We see then in all four cities in the first decade numerous, indeed regular, violations of the currency bands, but in the last decade only a few (St. Louis and New Orleans) other than in the Panic of 1907.

⁶ As noted above, Garbade and Silber (1979) argue that currency shipping costs barely declined after the early 1880s, but this is just on the basis of New York-Chicago freight rates. If differing degrees of railroad monopoly power between different city pairs existed, perhaps such a disperse pattern would have been possible.

Figure 1

June Domestic Exchange Rates*

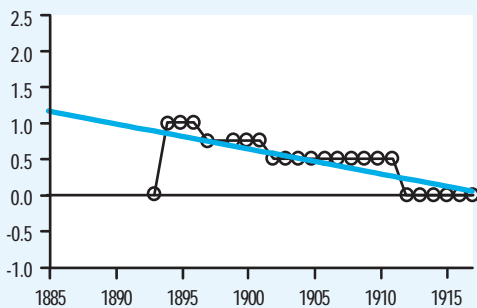


*Straight line is trend line.

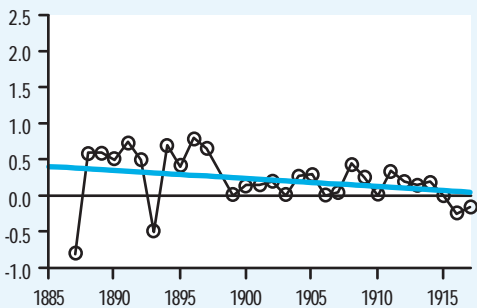
REVIEW

MAY/JUNE 1998

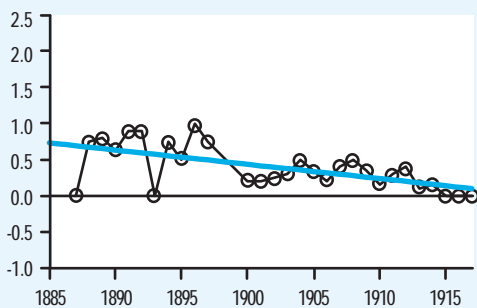
Cleveland
\$ per \$1000



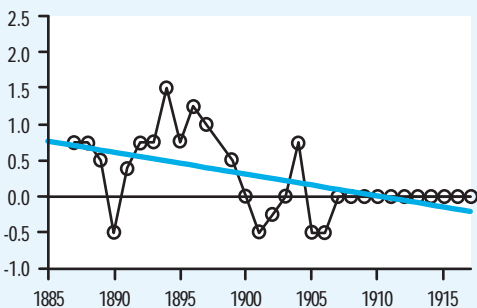
Chicago
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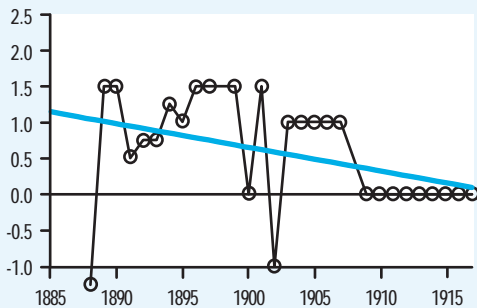
St. Louis
\$ per \$1000



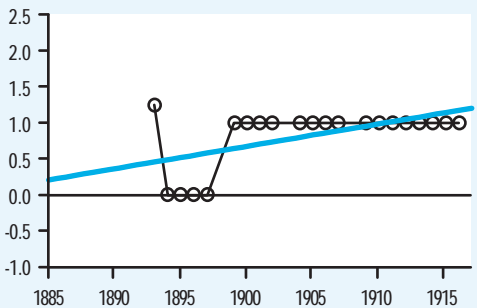
New Orleans
\$ per \$1000



Memphis
\$ per \$1000



Charleston
\$ per \$1000



Atlanta
\$ per \$1000

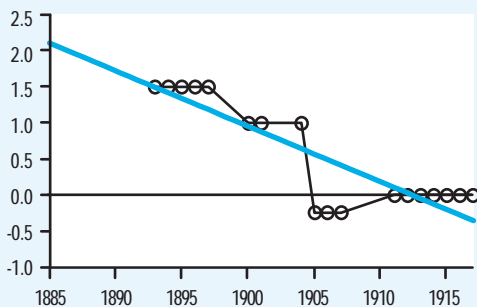
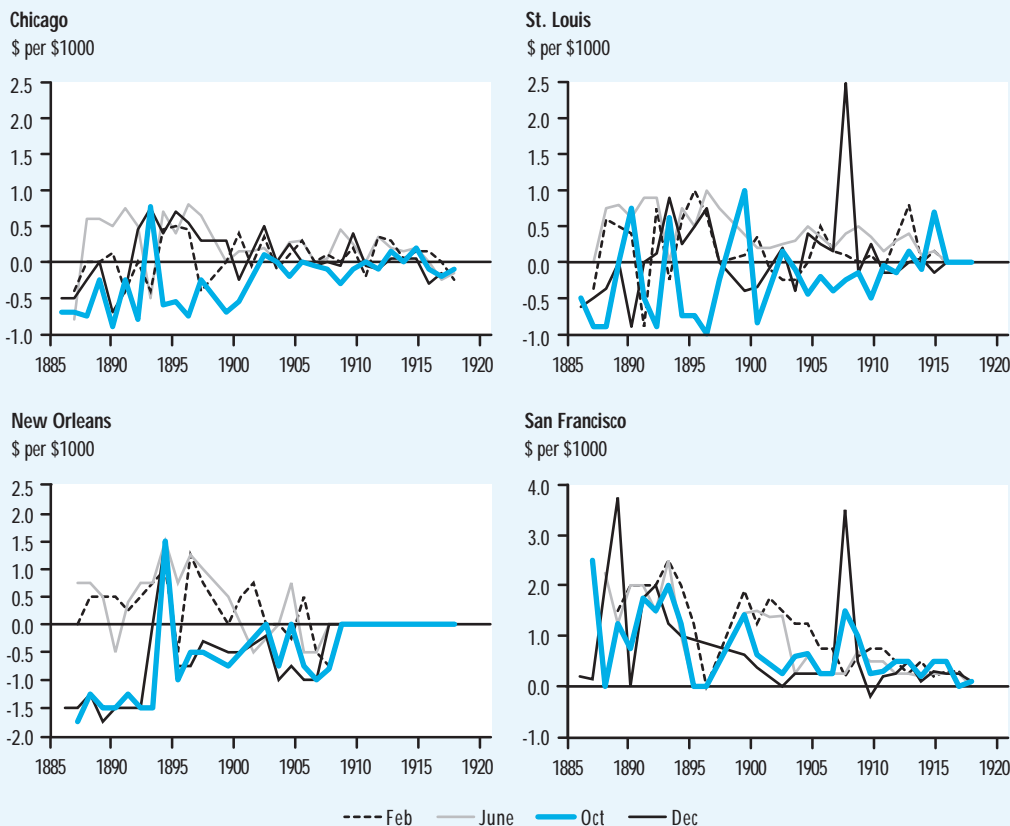


Figure 2

Domestic Exchange Rates



impact on the exchange-rate levels. In any case, domestic exchange rates in general were not high, and they fell dramatically in the decades before the Fed's establishment, in several cases settling down to zero.

In contrast to checks, which were necessarily payable at par only when presented physically to the issuing bank, the use of drafts payable in New York City or other financial centers greatly simplified the process of clearing and collecting out-of-town payments. Draft usage took advantage of the often-reviled centralization of reserves promoted by the correspondent and national banking systems to, in effect, create a nationally centralized clearing system. Administrative costs were small and, as we have seen, the costs of New York funds were not that great. Little shipping of currency around the country would have been required to settle

remittances. (However, perhaps critics of the old system may have exaggerated the amount of currency transferred in settling checks, since checks were often settled by issuing a bank draft.) Interior banks had to maintain correspondent accounts on which they generally earned 2 percent interest. If, instead, they held excess reserves at home to settle demands for payments of checks, they would have earned nothing. Gilbert agrees that collection costs "borne by the payee would be smaller with a draft drawn upon a bank in a financial center than with a check drawn upon the deposit account of the payor."

If the payments system based on drafts was really more efficient than the one based on checks, why did the latter begin to displace the former in the late nineteenth century? The advantages of checks to the payor were clear: It was simple to write

out a check; obtaining a draft required a trip to the bank. Paying by draft involved an immediate debit to one's account, while paying by check allowed the issuer to draw interest on the funds in his or her account until the check was presented for payment. In turn, banks often absorbed check collection costs rather than pass them on to the payee. (We know that banks in this period generally had some monopoly power and were earning profits.) It seems, then, that the increased convenience of checks must have outweighed any increased inefficiencies of collection.

Now let me turn to the question of whether the founding of the Federal Reserve improved check-clearing and collection efficiency in the United States. Although the indictments of the old check-clearing and collection system were essentially anecdotal, I agree with Gilbert's reasoning that the Federal Reserve most probably did improve the efficiency of the payments system. Although the Federal Reserve Banks did not devise a new technology for check collection, legal changes did solve the principal-agent problem that discouraged banks from using the most direct and efficient method of check presentation—the mail. The use of regionally centralized clearings may have reduced the necessary physical transfer of cash, but the magnitude of this effect is not clear, since checks were often settled by drafts on financial centers anyway. Shorter collection times, compared with alleged wandering checks of the earlier era, would have reduced the risk that the paying bank might default on or dishonor a check.

Although the Federal Reserve system of check clearing and collection appears superior to the old regime as it is described in the literature, empirical tests or supporting evidence are difficult to come by. Cost data for a direct test are alas not available. Gilbert's examination of cash holdings of state-chartered banks in states that did not reduce their reserve requirements is quite ingenious. Banks conserving on cash holdings did seem to represent a social benefit as well as a private one since, other things equal, a banking system with lower cash

holdings could engage in more intermediary activity. Gilbert finds that cash ratios of state-chartered banks declined 5 to 6 percentage points during the growth period of the Fed's check-clearing services and remained at that lower level through the 1920s.

The problem, of course, with using such straightforward time-series evidence is that other things could have been going on at the same time. Suppose the establishment of the Federal Reserve System led banks and the public to believe that panics were now a thing of the past. Even if state banks did not have direct access to the Fed's rediscount facilities, this general feeling of confidence could have led state banks to reduce their cash ratios permanently. On the other hand, Gilbert's sample included state banks engaged in nonpar clearings.⁷ Since it was quite possible that an agent of the Federal Reserve might appear at their banks with a large bundle of checks for collection any day, such banks might have held more cash than they had previously. In that case, the observed trend in cash holdings would understate the efficiency-enhancing effects of the Fed's clearing system. I have no idea which of these conflicting influences might dominate, so perhaps the data in Gilbert's Figure 3 are in fact a pretty good picture of what was going on.

If, however, one compares the efficiency of the Federal Reserve's clearing and collection with the earlier system (based on bank drafts), the differences narrow considerably. Both offered centralized clearing and collection: Drafts did so nationally (in New York City), and the Federal Reserve Banks did so regionally. Therefore, not much cash would have to move around the country. As we have seen, the costs of New York exchange generally were low and declining, stabilizing at par during the 1910s in several cities. Both systems reduced collection times and float over the pre-Federal Reserve check collection system, in which items in the process of collection were usually counted as reserves as soon as they were sent off for collection. In view of the sometimes leisurely process of collection, a single

⁷ Jessup (1967, p. 105) lists 7,499 nonmember banks in 35 states not on the par list as of August 31, 1919. Of the 25 states that did not lower reserve requirements, 15 had nonpar banks.

check might have served double, triple, or more duty as legal reserves. The size of this float in the early twentieth century was estimated at between one-third and one-half of deposited reserves (Jones 1931, p. 163). Giving immediate credit to banks in turn allowed customers to draw checks against uncollected funds (Preston 1920, p. 567). In contrast, credit to a bank's account at the Federal Reserve was deferred from one to eight days, depending on a schedule based on the average mail time required for the item to reach the paying bank and for the remittance to be made to the Federal Reserve Bank. Under the draft system, customers' accounts were debited as soon as the drafts were purchased, and there seemed little risk of the payments' being dishonored. The draft system solved the principal-agent problem by having the city correspondent do the clearing and collection.

As Gilbert notes, clearing and collection would also have been more efficient with nationwide branch banking than under the pre-Federal Reserve system. Such an institutional arrangement was, however, not legal in the early twentieth century. At least the draft system was a legally feasible alternative to the then-existing system. But the question of efficiency and the underlying Berger, Hancock, and Marquardt framework that Gilbert uses may be too narrow. One might ask instead whether having the Federal Reserve play a role in check clearing and collection facilitated the meeting of its primary objectives as spelled out in the Federal Reserve Act. I would think the answer here would be yes. The reduction in float, for example, allowed a more precise measurement of bank resources and cash on hand at a point in time, even if there had been no improvement in payments efficiency. Similarly, Gilbert quotes Stevens' argument that "the collection system was the glue that tied banks to the Fed," allowing it to become a more effective central banker. Subsidizing collection charges was one way in which to make up to member banks the loss of interest on legal reserves. So even if the Federal Reserve's takeover of clearing and collections would not have dramatically improved the efficiency of the payments system relative to

alternatives (such as drafts), it still would have been, on the whole, a good thing.

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