Journal of Financial Crises

Volume 4 | Issue 2

2022

# United States: New York Clearing House Association,The Panic of 1907

Corey N. Runkel
*Yale Program on Financial Stability*



Recommended Citation
Runkel, Corey N. (2022) "United States: New York Clearing House Association,The Panic of 1907," *Journal of Financial Crises*: Vol. 4 : Iss. 2, 1322-1350.
Available at: https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/61

# United States: New York Clearing House Association, The Panic of 1907[1]

*Corey N. Runkel*[2]

Yale Program on Financial Stability Case Study
July 15, 2022

**Abstract**

Signs of financial panic had marked the months leading up to mid-October 1907 when depositors began to run on banks and trust companies across New York City, most notably the Knickerbocker Trust Company, then New York City's third largest, on October 22. Cash injections from the US Treasury and from leading banker J.P. Morgan failed to reassure depositors and investors. On October 26, the New York Clearinghouse (NYCH), whose membership included most banks in New York, voted to issue clearinghouse loan certificates (CLCs) to help stabilize the financial panic. CLCs were collateralized by securities and could be used among members for settlement and to free up cash for other uses. NYCH banks also limited cash payments to depositors—including out-of-state national banks—to preserve reserves, paying instead in certified checks backed by the clearinghouse. Clearinghouses in other cities quickly followed suit by issuing CLCs and limiting cash payments. Outstanding NYCH CLCs peaked at $88 million on December 16 before gold imports from Europe expanded the supply of legal tender. Cash payments resumed in January 1908 after most borrowers decided to redeem their CLCs. By the time the NYCH canceled the last remaining CLCs in March, it had issued more than twice as many CLCs than in any previous crisis. While the NYCH's actions stabilized the financial panic, some criticized the three-month limitation of payments as unnecessary. The failure of the NYCH to issue certificates sooner, and the depth of the Panic of 1907, catalyzed the movement for a federal reserve system.

**Keywords:** CLCs, clearinghouse, interbank funds market, lender of last resort, NYCH, Panic of 1907

---

[1] This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering broad-based emergency lending programs. Cases are available from the *Journal of Financial Crises* at
https://elischolar.library.yale.edu/journal-of-financial-crises/.

[2] Research Associate, YPFS, Yale School of Management. I thank Benjamin Hoffner for scanning many documents during his trip to the NYCH Archives, Jon Moen for his comments and for the ever-illuminating papers of Elmus Wicker.

## Overview

Different accounts of the Panic of 1907 identify its ultimate causes as restricted access to gold, business expansion at home or abroad, the 1906 San Francisco earthquake, or some combination (OCC 1908; Taft 1907; Tallman and Moen 2012). However, the proximate causes have been well known since 1907: a failed takeover of the copper market in October caused runs on four New York Clearinghouse (NCYH) member banks and several large trust companies on October 16 (Wicker 2000, 89). On the weekend of October 19 and 20, the NYCH, an association of banks that gathered daily to settle balances and supported each other in crises, arranged for its member banks to grant emergency loans to the member banks that were experiencing runs.

On October 21, however, it denied support to trust companies also affiliated with the copper takeover on the grounds that they were not members (US House Stanley Committee 1911, 20; Wicker 2000, 91). Their denial of support triggered a loss of confidence in trust companies and their unregulated reserves (Cannon 1910a). The next day, "hundreds of depositors in the Knickerbocker Trust Company"—then the third largest in New York—"made a run on each branch of the institution" (*New York Evening Telegram* 1907). Though six member banks drew overdrafts at the clearinghouse, the NYCH decided not to extend any more discretionary loans to its members (*New York Evening Telegram* 1907).

### Key Terms

Purpose: "to check the run on the banks and trust companies" and, possibly, to free up cash for payment to interior banks (*NYT* 1907b)

| | |
|---|---|
| Launch Dates | Announcement: October 26, 1907<br>First issue: October 26, 1907 |
| Expiration Dates | Last issue: January 30, 1908<br>Last redemption: March 28, 1908 |
| Legal Authority | The CLCs were issued under the association authority of the NYCH, not under any law |
| Peak Outstanding | $88 million on December 16, 1907 |
| Participants | NYCH member banks |
| Rate | Rate fixed by NYCH loan committee at 6% |
| Collateral | Bills receivable, stocks, bonds, commercial paper |
| Loan Duration | Not fixed |
| Notable Features | Limited cash payments at same time, largest CLC issue, US Treasury assistance |
| Outcomes | All CLCs repaid |

Throughout the week, runs and bank failures intensified across the city. On October 23, a private money pool organized by John Pierpont Morgan and other financiers rescued some trusts but denied funding to the Knickerbocker Trust Company, which failed (Wicker 2000, 91–94). On October 24, oil magnate John D. Rockefeller created an additional $10 million pool (Friedman and Schwartz [1963] 1993). On the same day, the US Treasury deposited $25 million into a handful of large New York banks to shore up their reserves; Treasury deposits would total $36 million for the month of October (Sprague 1910, 263). Also on October 24, the NYCH suspended publication of members' weekly financial statements, a move it had made in previous crises to protect banks from apprehensive depositors (*New York Evening Telegram* 1907).

On Saturday, October 26, the NYCH unanimously voted to issue clearinghouse loan certificates (CLCs) and appointed a Loan Committee to administer them (CHC 1908). A CLC represented a collateralized loan that members were required to accept as temporary payment (Cannon 1910a). The NYCH had successfully used CLCs to stem financial panics in 1873, 1884, 1890, and 1893 (see Fulmer 2022b). CLCs effectively increased the money supply before gold imports arrived in amounts large enough to back a substantial increase in legal tender. CLCs could be transferred among NYCH members and carried the name of the borrowing bank, though they were guaranteed by the whole membership (Moen and Tallman 2013). As in the crises in 1873 and 1893, NYCH banks also limited cash payments to depositors to preserve bank reserves; certified checks issued by member banks also circulated in place of cash (Andrew 1908).

CLCs issued during the Panic of 1907 carried a 6% interest rate, which was set by the Loan Committee, and were collateralized by money market securities such as bills receivable, commercial paper, as well as bonds and equities. Before issuing CLCs, the Loan Committee reviewed borrowers' collateral, which was subject to a 25% haircut (CHC 1908; Moen and Tallman 2013). CLCs carried no fixed maturity, and, "as a rule," members repaid CLCs promptly once they had enough cash (Cannon 1910a).

Outstanding CLCs rose quickly through November as 13 New York banks—including two NYCH members—failed (Wicker 2000, 86–88). The NYCH issued $101 million in CLCs between October 26 and January 30, 1908, and outstanding CLCs peaked on December 16 at $88 million (CHC 1908). Total outstanding CLCs remained high into January as NYCH banks resumed normal payments to depositors and nonmember banks; banks then began to redeem CLCs. By February, the value of outstanding CLCs had decreased to less than $10 million. The NYCH resumed publication of its members' financial statements that month and canceled the last CLCs on March 28. The NYCH suffered no losses on its CLCs (Cannon 1910a).

The connection between New York banks and those in the interior meant that action by the NYCH generally precipitated action across the country. Some 71 other clearinghouses followed the NYCH and issued CLCs or other substitutes for legal money, and clearinghouses in two-thirds of cities larger than 25,000 residents suspended cash payments (Andrew 1908). Unlike NYCH, many clearinghouses in the South and Midwest issued CLCs in small denominations to encourage their use as circulating currency.

## Summary Evaluation

The NYCH's issue of CLCs calmed the banking community and kept 51 of 53 clearinghouse members from failure, but not before several nonmember New York City institutions failed (Gorton and Tallman 2016). The Panic of 1907 may have affirmed the NYCH's commitment to coordinated action for the benefit of its members, but "[t]he NYCH failed to grasp the fact that its responsibilities for bank stability extended not only to its own members but to all banks" (Wicker 2000, 85). Until 1903, trust companies had been members of the NYCH. When the NYCH instituted reserve requirements above the legal minimum, trust companies left the NYCH to follow a business model that relied on unregulated banking. On January 13, 1908, the NYCH voted to allow trusts as members and imposed a reserve requirement of 25%, 10 percentage points higher than the legal minimum but equal to other NYCH banks' (Cannon 1910a).

Nonetheless, CLCs allowed members to supply interior banks with cash and honor their liabilities within the clearinghouse before the arrival of gold increased their reserves of legal tender. As shown in Figure 1, CLCs paid for 64% of settlements at the clearinghouse during the Panic of 1907. This freed up cash so banks could pay interior banks that depended on New York banks for reserves.

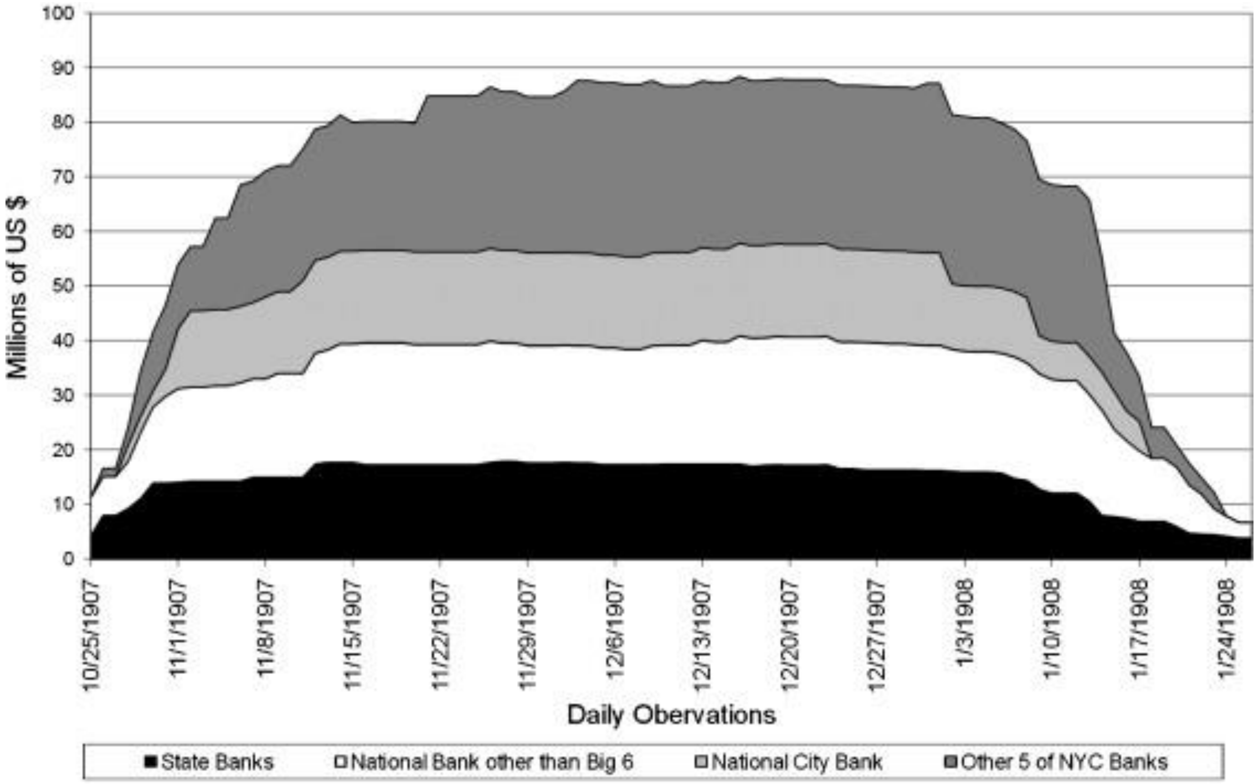
**Figure 1: CLCs Used to Pay NYCH Balances**

| | Total balances | Loan certificates paid in | Per cent. |
|---|---|---|---|
| 1907. | | | |
| October [a] | $64,648,593 | $54,460,000 | 84 |
| November | 218,702,635 | 211,475,000 | 96 |
| December | 203,340,855 | 198,200,000 | 97 |
| 1908. | | | |
| January | 337,895,293 | 64,575,000 | 19 |
| Total | 824,587,376 | 528,710,000 | 64 |

*Source: CHC 1908.*

Tallman and Moen (2012) comb through the NYCH archives to estimate the effect of CLCs on the amount of money flowing to interior banks. As the authors show in Figure 2, the six largest NYCH banks—representing half of the total assets of NYCH membership—increased their borrowing under CLCs to supply smaller country banks (Tallman and Moen 2012).

**Figure 2: Issuance of CLCs by the NYCH during 1907 Panic, by Bank Type**




Note: Tallman and Moen (2012) list the Big Six NYCH banks: National City, National Bank of Commerce, First National, National Park, Hanover, and Chase.

*Source: Tallman and Moen 2012.*

Contemporaries of the panic were split over blaming the NYCH for issuing CLCs as late as it did, but recent scholars agree that the NYCH waited too long before approving CLCs (Friedman and Schwartz [1963] 1993, 166–67; *WSJ* 1907c; Wicker 2000, 85). Suspension of payments, which lasted in New York until January 1, 1908, prolonged a recession that had already been underway (Wicker 2000, 9). Scholars have also elevated gold imports as the more significant intervention in the Panic of 1907 (Sprague 1910; Tallman and Moen 2012; Friedman and Schwartz [1963] 1993).

Importantly, politicians contemporary with the panic used the NYCH's reluctance to issue CLCs to advance the Aldrich-Vreeland Act, which passed in 1908 and established an emergency currency that would play a large role in the Panic of 1914. The act also established the National Monetary Commission, tasked with studying banking and currency reform. The landmark publication of the National Monetary Commission concluded its evaluation of the Panic of 1907 by saying, "Somewhere in the banking system of a country there should be a reserve of lending power" (Fulmer 2022c; Sprague 1910, 319).

Sprague does not argue for the creation of a central bank, but Paul Warburg (1911), a New York financier, does. He uses the Panic of 1907 to argue that banks, even at their most collegial, prioritized their own profits above the stability of the financial system. Though the largest six NYCH banks borrowed to extend money to the interior, he writes, “It is somewhat disconcerting to find that these banks, which held a reserve of USD 140,000,000 in August 1907, still held USD 110,000,000 in December, 1907” (Warburg 1911). To Warburg, so long as banks hoarded their reserves, only disruptions in payments could treat financial crises. Warburg asserts that an institution split into geographical regions and staffed with civil servants could handle financial panics as well as or better than the large NYCH banks had in 1907. He further argues for a central bank “which cannot be swayed in its policy by any prospect of gain,” prefiguring Capie et al.’s (1994, 65) definition of a lender of last resort. This model of a “United Reserve Bank” shares many similarities with the institution prescribed by the Federal Reserve Act.

| Context: NYCH 1907–1908 | |
|---|---|
| **Net deposits of NYCH membership (average of weekly data)** | $1,078.3 million in 1907<br>$1,296.1 million in 1908 |
| **Loans held by NYCH membership (average of weekly data)** | $1,097.2 million in 1907<br>$1,251.7 million in 1908 |
| **Capital and surplus of NYCH membership (average of weekly data)** | $288.9 million in 1907<br>$288.0 million in 1908 |
| **Required reserves held by NYCH membership (average of weekly data)** | $269.6 million in 1907<br>$322.4 million in 1908 |
| **Number of members in the NYCH** | 54 in 1907<br>50 in 1908 |
| **NYCH clearing transactions (annual)** | $87.2 billion in 1907<br>$79.3 billion in 1908 |
| **Number of commercial failures** | 11,725 in 1907<br>15,690 in 1908 |
| **Total liabilities of commercial failures** | $197.4 million in 1907<br>$222.3 million in 1908 |
| **Total individual deposits for the United States (excluding savings banks)** | $9,604 million in 1907<br>$9,305 million in 1908 |
| **Ratio of aggregate CLC issuance to net deposits of NYCH membership** | 9.4% |
| *Source: Andrew 1910.* | |

## Key Design Decisions

### 1. Purpose: The NYCH issued CLCs to calm the financial panic.

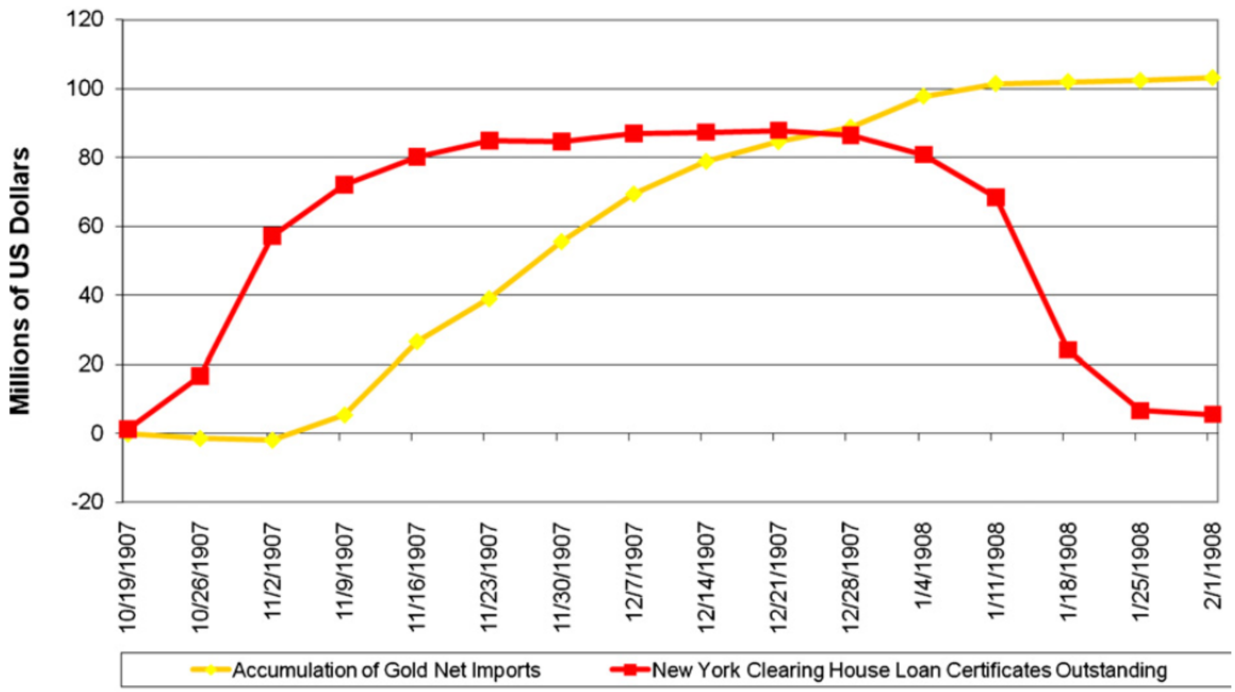
The NYCH issued CLCs to allay public fears about bank solvency and stop the bank runs. CLCs had gained a reputation that they "always proved effective at in lessening financial strain, and in this way increasing public confidence" (*NYT* 1907a). A member of the Loan Committee "felt that Clearing House certificates must be resorted to if we wished to check the run on the banks and trust companies" and cited the reputation of CLCs as a reason to issue them (*NYT* 1907b). With this success came the belief that CLCs would allow cash to flow out of NYC even though expansion in *lawful money*—a measure that included specie as well as notes and securities issued by the Treasury—was limited by the amount of gold in the banking system.

Historically, CLCs had been used to conserve banks' reserves, stop bank runs, release cash for use by interior banks, and, in 1893, to finance gold imports. Though CLCs allowed banks to funnel funds to interior banks, it is unclear how this objective ranked against other goals, specifically importing gold and stopping bank runs.

It is not clear if CLCs were issued to release funds to interior banks at a large scale, despite the belief, evident in news stories, that the point of CLCs was to allow more cash to enter the interior in spite of the limitations created by the gold standard (*NYT* 1907a; *NYT* 1907b; *WSJ* 1907g). The NYCH did not state that out-of-town depositors were the beneficiary of CLCs, and the public records of NYCH bank reserves are not conclusive. Though NYCH banks settled the vast majority of October, November, and December clearinghouse balances using CLCs, their reserves stayed above $210 million throughout the crisis (CHC 1908; *CFC* 1907). Sprague (1910, 311) writes that, while NYCH banks accommodated local depositors, they exhibited "[n]o recognition of the peculiar responsibility incurred in accepting bankers' deposits" from interior banks—a responsibility that the NYCH boasted about after the Panic of 1873. This account fits with comments by the president of the NYCH, who said that it was imperative that NYC banks run a healthy cash reserve "to provide the pay-rolls for its own industrial organizations and those numerous large corporations scattered throughout the country whose headquarters are in New York" (Gilbert 1908).

In addition to spurring confidence, CLCs could help end the crisis. Tallman and Moen (2012) write that CLCs "provided a means to import gold and eventually the money base more durably." When NYCH member banks requested gold from their London dealers or affiliates, they booked a liability to that institution, which was funded by CLCs (Sprague 1910, 191–92). We do not know how much funds were used to import gold, but news reports in 1893 say that the NYCH issued "a large amount" to fund the expenditure (*CFC* 1893). Figure 3 shows how CLC issuance plateaued as gold imports began arriving and fell as more gold arrived.

**Figure 3: Cumulative Gold Imports and Outstanding CLCs**




*Source: Tallman and Moen 2012.*

**2. Legal Authority: The NYCH was a private institution and faced no explicit legal restrictions against issuing CLCs.**

Without a central bank to administer public liquidity assistance during the National Banking Era (1863-1913), the NYCH employed CLCs as a private liquidity tool to manage financial crises (Fulmer 2022b; Gorton and Tallman 2016). CLCs occupied a tenuous legal position: While national banks could issue circulating notes if they first deposited government bonds of higher value with the Treasury (National Bank Act of 1864, vol. 13, sec. 23), the law at the time effectively banned state-chartered banks and other financial institutions from issuing their own notes by applying a steep 10% tax. The CLCs did not pay this tax. CLCs also clearly were not legal tender—the US government was not compelled to accept them as payment for debts or taxes.

However, contemporary sources and scholars tend to agree that CLCs used entirely for interbank transactions did not break this law because they did not circulate as currency. If courts had considered CLCs in circulation, the certificates could have been subject to the 10% tax; no documents indicate that NYCH, or its members, paid such a tax in any crisis (National Bank Act of 1865, vol. 13, sec. 6).

As a practical matter, the legality of NYCH CLCs was not challenged (*NYT* 1907c). CLCs issued by some other clearinghouses circulated outside their membership as currency and thus may have been subject to the tax. The NYCH, by contrast, believed "that under prosecution [it] should be able to show that [CLCs] did not come within such construction of the law as is necessary to subject them to the" 10% tax imposed on circulating notes (Warner, Brawley, and McLaurin 1893, 262). Timberlake (1984) notes that the government settled the matter by not prosecuting CLC issuers, at the urging of several current and former state officials. See Fulmer (2022b) for a more detailed discussion of the legality of CLCs.

Separate from CLCs were certified checks and pay checks. In the 1873 crisis, the NYCH announced that all checks issued by any member bank would be certified as "payable through the Clearing House." Although the NYCH may not have made similar announcements in subsequent crises in the National Banking Era, banks handed out certified checks stamped, "Payable through the Clearing House" in lieu of cash during later crises when they had partially suspended the convertibility of deposits (Gorton and Tallman 2016).

### 3. Part of a Package (A): The NYCH suppressed reporting of individual banks' balance sheet information, and member banks limited depositors' withdrawal requests with certified checks.

As in earlier crises, in issuing CLCs, the NYCH immediately suspended the weekly publication of banks' balance sheet information. Also, as in 1873 and 1893, NYCH banks limited cash payments to depositors to preserve bank reserves. Certified checks issued by member banks but marked "payable through the clearinghouse" circulated in place of cash. This also provided relief to trust companies. The press reported that trust companies agreed to pay depositors in cash up to a certain amount and give certified checks on NYCH banks for the balance (*WSJ* 1907d). Later accounts agree that banks continued to pay out cash, but much less of it, and that they prioritized New York City depositors over out-of-town depositors (Gilbert 1908; Sprague 1910, 260; Tallman and Moen 2012). Banks coordinated limits on payments through the NYCH, but there is no evidence that limiting payments was an official act of the clearinghouse (Wicker 2000, 8).

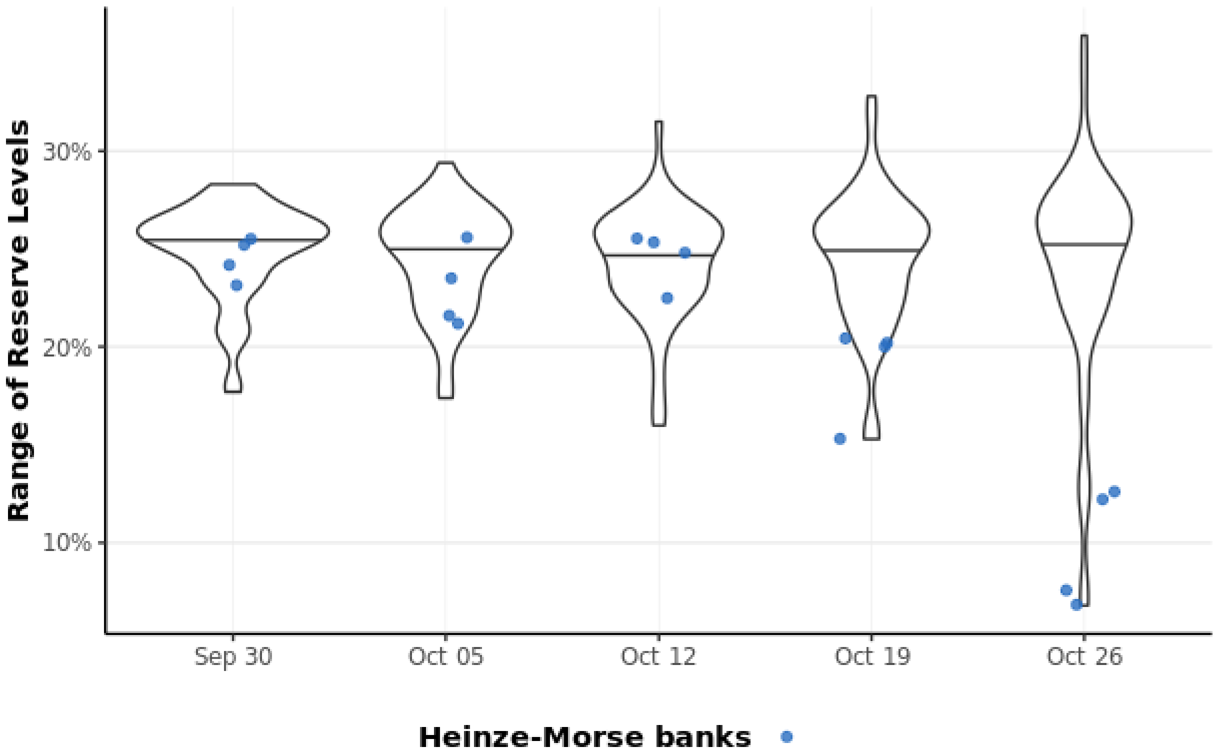
The limitation lasted through November and December before gold imports arrived, and normal payments resumed on January 1, 1908 (Wicker 2000, 9). During the suspension of payments, banks still made limited, and often slower, payments to interior banks. In fact, the suspension of payments allowed banks outside New York to continue receiving payments at the expense of smaller depositors. Large NYCH banks borrowed CLCs so that they could fund deposit demands by banks outside New York City (Tallman and Moen 2012).

NYCH banks had also limited cash withdrawals and paid depositors partly or wholly through certified checks in the crises of 1873 and 1893. In contrast, the Panic of 1907 featured immediate limits on payments, where banks in prior crises had waited several weeks. A *Wall Street Journal* (*WSJ* 1907c) article ahead of the NYCH's approval of CLCs stated, "Their issue practically amounts to a suspension of cash payments," and the president of the NYCH (in retrospect) said that the Clearinghouse Committee "knew that the issuance of Clearinghouse certificates would immediately bring about a restriction of cash payments throughout the country" (Gilbert 1908).

Sprague (1910, 261) questions the speed with which NYCH banks limited payments, arguing that most members' reserves could have compensated depositors, especially with the introduction of CLCs. Sprague focuses on the largest six NYCH banks, the subjects of Tallman and Moen (2012), and shows that their reserves barely shrank or grew throughout October 1907. Meanwhile, the *New York Times* (*NYT* 1907a) reported that NYCH banks, on the whole, found the use of cash "inconvenient," while another article said they were "sound and solvent" (*NYT* 1907b).

However, the successive reports of the NYCH throughout October 1907 showed that the worst-performing NYCH banks were bleeding reserves. Figure 4 shows the distribution of NYCH banks' reserve levels. The wider the shape, the more NYCH banks had reserves at that level during that week. On September 30, 1907, all NYCH banks held between 18% and 28% of their total deposits in specie or legal tender, with 39 of 53 banks' ratios falling within 2 percentage points of the legal requirement. By October 19, days before the Panic began, NYCH reserves had begun to diverge. A core of 29 NYCH banks held reserve ratios within 2 percentage points of the legal requirement, but the range for all banks' ratios had grown to between 15% and 33%. Treasury deposits and depositors fleeing other banks had made some of the largest NYCH banks more sound, while more banks fell below the 25% legal requirement. And, on October 26—the last public report of the NYCH—five members reported reserve levels below 15% (*CFC* 1907). In this view, the limitation of payments makes more sense as a tool to protect members than it does in Sprague's analysis. The reserve data reveal that the panic endangered more members than the four connected to the Heinze-Morse companies, which were publicly considered the weakest banks (three of which had received direct loans from the NYCH).

**Figure 4: Distribution of Reserve Levels of NYCH Banks during the Panic of 1907**




Note: Horizontal line in each distribution indicates the median bank's reserve level. The wider the shape, the more NYCH banks had reserves at that level during that week.

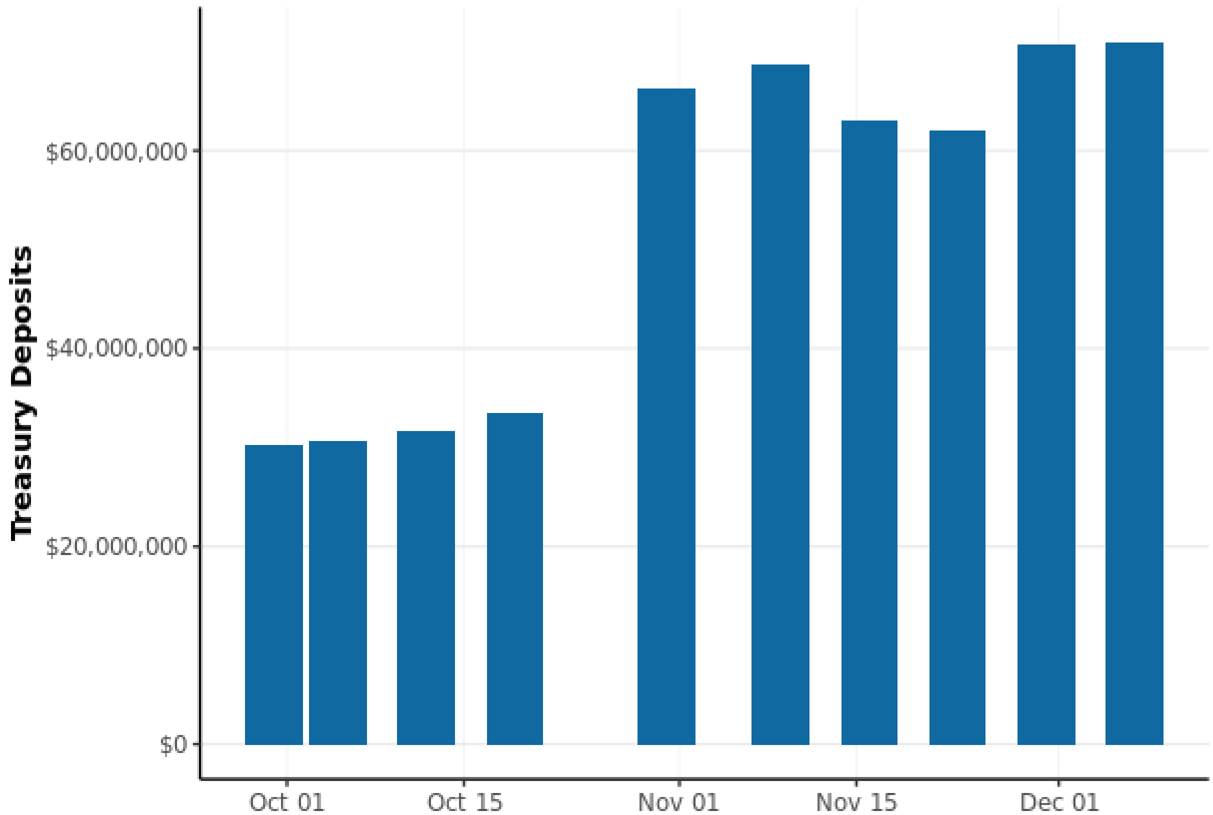
*Source: CFC 1907.*

**Part of a Package (B): Money pools organized by business magnates lent to some banks outside the NYCH, while the US Treasury placed large deposits across the city.**

Before the NYCH issued CLCs, business magnates established money pools to lend to non-NYCH financial institutions. J.P. Morgan, the country's most influential banker, assembled $25 million to support New York City trusts; this pool considered lending to the Knickerbocker, ultimately refused, but rescued the Trust Company of America (Wicker 2000, 94). Oil magnate John D. Rockefeller assembled an additional $10 million. These money pools came in addition to the direct loans provided by the NYCH to ailing member banks, discussed further in Key Design Decision No. 15, Other Options.

On October 24, the US Treasury placed $25 million in NYCH banks, with $36 million on deposit by October 31 (US Senate 1908). This increase and the Treasury's total deposits with NYCH banks are shown in Figure 5. Sprague (1910, 264) says that banks passed on this deposit to their customers but also argues that historians should credit Treasury policy—not the management of the NYCH banks or issuance of CLCs—with the release of funds.

**Figure 5: Total Deposits by the New York Sub-Treasury in NYCH Banks**




*Source: US Senate 1908.*

### 4. Management: The NYCH appointed its Clearinghouse Committee as Loan Committee to issue CLCs and an associate committee to review collateral.

The NYCH membership, Clearinghouse Committee, and Loan Committee coordinated to issue CLCs. The Clearinghouse Committee consisted of six elected officers and handled the day-to-day affairs of the clearinghouse such as setting procedural rules and maintaining the NYCH's building. They proposed resolutions for the membership, including the resolution that approved CLCs and appointed a Loan Committee, which was not a standing committee within the NYCH (CHC 1908). The membership voted on resolutions. In 1907, the membership was more divided than in previous crises about issuing CLCs. J.P. Morgan, a nonmember, urged the NYCH not to issue CLCs "to preserve New York as an international money market from" the "advertisement of panic" that CLC issuance might signal (*WSJ* 1907c). Morgan's view reflected, if not influenced, others in the NYCH. There also seemed to exist a sense of propriety whereby the NYCH did not want to help nonmembers such as the Knickerbocker Trust Company and hoped that other private actors would act as a lender of last resort (Wicker 2000, 90–91).

During the Panic of 1907, the Loan Committee's membership was identical to that of the Clearinghouse Committee, though no documents indicate that this was by rule. The Loan

Committee set the interest rate for CLCs, reviewed collateral brought to it by applicants, and ultimately decided whether and how much CLCs to issue (CHC 1908; *WSJ* 1907h). After the Panic of 1907 subsided, the Loan Committee issued a report to the membership that detailed the amount of CLCs issued and the collateral received (CHC 1908).

**5. Administration: The Loan Committee issued CLCs that could be used to settle balances with other members at the NYCH.**

New certificates were issued when a member approached the Loan Committee to request a certificate and presented sufficient collateral. Until late in the crisis, at least three members of the Loan Committee met each business day—always in the morning, frequently after noon as well—to review loan certificate requests and collateral (CHC 1908). The Loan Committee was advised by presidents of four member banks. Four vice presidents (of different member banks) helped review collateral (CHC 1908; *WSJ* 1907h). The Loan Committee met around the time that the NYCH conducted clearing, a process detailed in the Appendix. Once the certificates were issued, members could use them in the clearing process. CLCs did not circulate beyond the NYCH (Cannon 1910a).

**6. Eligible Participants: NYCH member banks were eligible for CLCs.**

CLCs were available only to members of the NYCH association. Membership in the NYCH was limited to those nominated and accepted by the current membership. In 1907, all 53 members were banks located in New York City (Cannon 1910b). Trust companies numbered among the membership until 1903, when the prospect of reserve requirements caused all member trusts to leave. Several other clearinghouses, including the Chicago Clearing House, had allowed trust companies to become members before the panic (documents surveyed did not indicate the reserves required by other clearinghouses; Moen and Tallman 2000). The NYCH considered offering loans and membership to trust companies during the Panic of 1907 but never followed through (US House Stanley Committee 1911, 20; *WSJ* 1907e). On January 13, 1908, the NYCH voted to allow trusts as members, subject to a 25% reserve requirement (Cannon 1910a). During the panic, the NYCH membership did not grow; instead it lost two banks—Oriental and Mechanics' & Traders—to failure (Gorton and Tallman 2016).

Of the 53 NYCH member banks, 32 took out CLCs (CHC 1908). Six big banks, representing half of the total assets of NYCH membership, borrowed 53% of CLCs issued (Moen and Tallman 2013). Borrowing amounts varied from $250,000 for two banks to an average of $3.1 million and to a maximum of $17 million for one member (CHC 1908; OCC 1908). For some banks, these amounts represented more than their total capital (Moen and Tallman 2013).

**7. Funding Source: CLCs were funded by accepting institutions and guaranteed by the NYCH.**

CLCs were funded by the balance sheets of accepting institutions and guaranteed by the NYCH. If borrowers defaulted on CLCs, the membership paid the holding banks in proportion to each bank's capital and surplus (Moen and Tallman 2013; NYCH 1907b).

### 8. Program Size: Demand for CLCs dictated the value of certificates issued.

Member banks approached the NYCH when they needed CLCs (Woodward 1907). This resulted in the issue of 3,548 CLCs totaling $101 million. At their peak on December 16, there were $88 million in CLCs outstanding (CHC 1908).

### 9. Individual Participation Limits: Participants did not face borrowing limits.

NYCH banks could borrow up to the value of their collateral, after the NYCH imposed haircuts.

### 10. Rate Charged: CLCs charged a market rate of 6%.

When the Loan Committee authorized CLCs, it specified that they bear 6% interest, a figure confirmed by the Loan Committee's April 1908 report (CHC 1908). Though Cannon (1910a) claims that the rate was set at 6%—high enough to be a burden—to entice banks to redeem the CLCs once they had sufficient liquidity, 6% was in line with 30-day to seven-month loan rates, though slightly above call loan rates, for September 1907 (OCC 1907).

Borrowing banks paid interest to holders through the NYCH clearing process on the 15th of each month (Moen and Tallman 2013; Woodward and Sherer 1907). If a CLC was transferred by an accepting bank to a second member bank in payment of an account, the interest payment was transferred to the second accepting bank (NYCH 1907a).

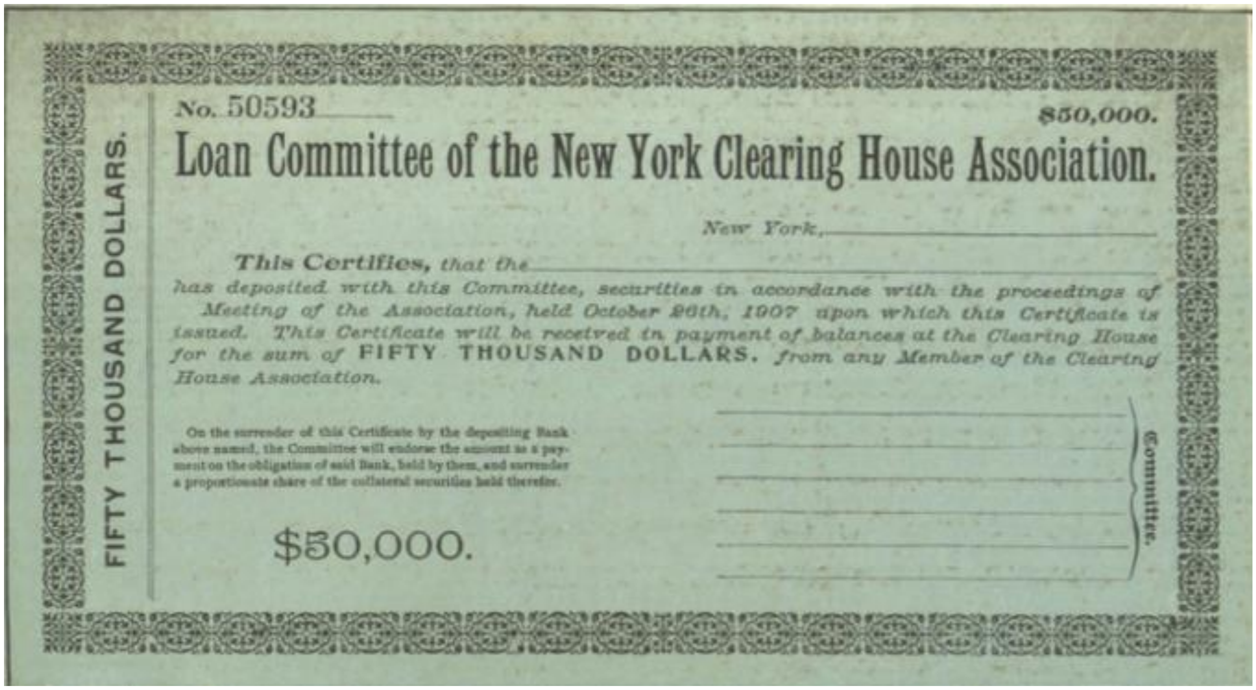
### 11. Eligible Collateral: CLCs were backed by commercial paper, stocks, and bonds, subject to haircuts of at least 25%.

The Loan Committee reported that collateral was composed of commercial paper, stocks, bonds, short-term railroad notes, and similar securities (CHC 1908). The resolution authorizing CLCs prohibited haircuts smaller than 25%. Moen and Tallman (2013), who accessed the Loan Committee's files, suggest that 25% was commonly imposed, though haircuts in other panics reached at least 31% (Fulmer 2022a). This collateral was held at the NYCH and returned to the borrower upon redemption of the certificate (Tallman and Moen 2012).

### 12. Loan Duration: CLCs were payable at any time but were facilitated by a receiver beginning in February 1908.

CLCs did not carry a maturity date. When borrowing banks wanted to redeem their CLCs, they approached the Loan Committee, which notified the membership that a series of CLCs would be redeemed and that they could receive payment on a specified day. A sample redemption notice is shown in Figure 7. The borrowing bank, once it had the requisite cash on deposit with the clearinghouse, then paid accepting banks through the daily settlement process (NYCH 1907a). After settlement, the borrowing bank received its collateral back from the clearinghouse.

**Figure 6: Unused NYCH Loan Certificate**



FIFTY THOUSAND DOLLARS.

No. 50593 $50,000.

Loan Committee of the New York Clearing House Association.

New York, ______

This Certifies, that the ______ has deposited with this Committee, securities in accordance with the proceedings of Meeting of the Association, held October 26th, 1907 upon which this Certificate is issued. This Certificate will be received in payment of balances at the Clearing House for the sum of FIFTY THOUSAND DOLLARS. from any Member of the Clearing House Association.

On the surrender of this Certificate by the depositing Bank above named, the Committee will endorse the amount as a payment on the obligation of said Bank, held by them, and surrender a proportionate share of the collateral securities held therefor.

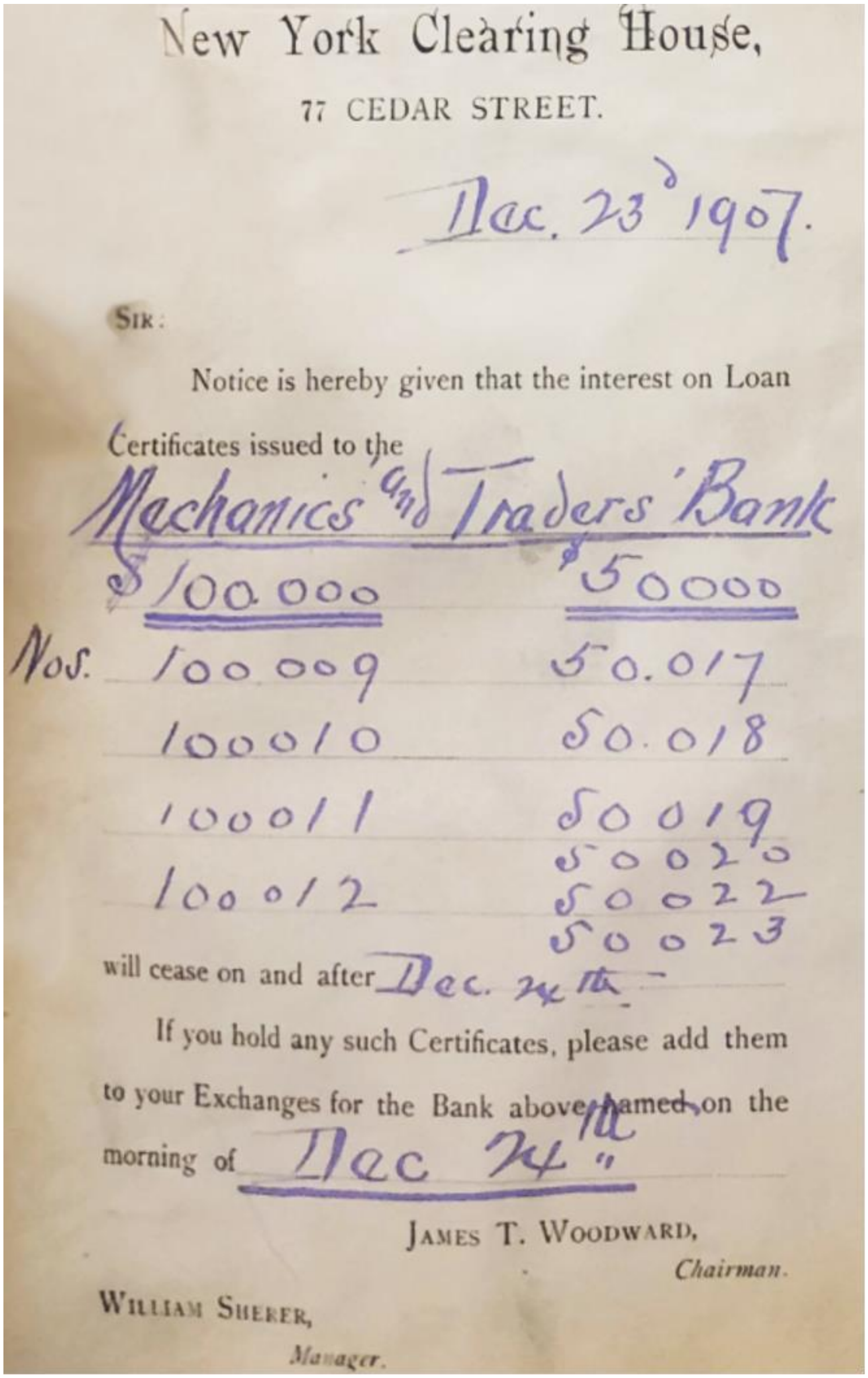
$50,000.

Committee.

*Source: Cannon 1910b.*

As shown in Figure 2, most CLCs were redeemed in early January, after imported gold arrived from Europe (Tallman and Moen 2012). The Loan Committee announced in February that full bank statements would resume publication and developed a plan to collect the $5.6 million in outstanding CLCs. By this time, only four bank balances remained. The NYCH appointed some of the members who examined collateral for the Loan Committee to supervise the collection of these debts; the National Bank of North America paid the final balance of $250,000 to a receiver on March 28 (*NYT* 1908b; *NYT* 1908d). See Figure 7 for a sample redemption notice.

**Figure 7: Sample Redemption Notice**



New York Clearing House,

77 CEDAR STREET.

Dec. 23d 1907.

SIR:

Notice is hereby given that the interest on Loan Certificates issued to the Mechanics and Traders' Bank

| | |
|---|---|
| $100 000 | $50000 |
| Nos. 100 009 | 50.017 |
| 100010 | 50.018 |
| 100011 | 50019 |
| 100012 | 50020 |
| | 50022 |
| | 50023 |

will cease on and after Dec. 24th

If you hold any such Certificates, please add them to your Exchanges for the Bank above ~~named~~ on the morning of Dec 24th

JAMES T. WOODWARD, *Chairman.*

WILLIAM SHERER, *Manager.*

*Source: NYCH 1907a.*

## 13. Other Conditions: Member banks were required to accept NYCH CLCs as payment.

A condition of membership in NYCH was accepting CLCs as payment for settlement balances (Cannon 1910b; *NYT* 1873).

**14. Impact on Monetary Policy Transmission: Monetary policy was not a factor because CLCs were not currency.**

The NYCH did not consider questions of monetary policy, let alone how to counteract the effects of CLCs on medium-term rates.

**15. Other Options: The NYCH lent to three distressed members to address the panic before issuing CLCs.**

Between October 14 and 20, the NYCH considered emergency loan applications from three member banks and two nonmember trusts. The membership rejected the applications of the nonmember Trust Company of America and Knickerbocker Trust Company but accepted applications from member banks Mercantile National Bank, New Amsterdam National Bank, and National Bank of North America (US House Stanley Committee 1911, 20; Wicker 2000, 89–91). These banks were associated with the failed cornering of the copper market and were among the weakest NYCH members (Sprague 1910, 262; Wicker 2000, 89). NYCH member banks extended loans to Mercantile National Bank and New Amsterdam National Bank that week; the Bank of North America was able to raise funds from other sources (Wicker 2000, 90). The loans stabilized these banks, but sources do not note that the loans had any effect on the broader financial panic. The NYCH did not publicize loan terms.

**16. Similar Programs in Other Countries: Clearinghouses in other US cities followed the NYCH and issued their own CLCs.**

More cities' clearinghouses used CLCs in the Panic of 1907 than in any previous crisis. The Panic of 1907 also resulted in more CLCs being issued than in any prior crisis and, in smaller cities, significant circulation of small-denomination CLCs among the general public outside clearinghouses. Of clearinghouses in the 145 largest metropolitan areas, 71 issued CLCs or other substitutes for legal money; an additional 20 clearinghouses used CLCs only for large transactions, and preserved cash payments for small transactions. Many of these clearinghouses voted to issue CLCs on the same day that the NYCH announced its decision, October 26. That these clearinghouses followed so quickly reflected the reserve status of many New York banks in relation to other cities[3] and the NYCH's status as the nation's first and largest clearinghouse, responsible in 1907 for 62% of the $154 billion in nationwide clearings (Andrew 1908; OCC 1908).

**17. Communication: There does not appear to have been a concerted communications effort on the part of the NYCH with respect to the issuance of the CLCs.**

The press interviewed NYCH members frequently but did not publish its official statements as some newspapers had done in previous crises (*NYT* 1907a). Newspapers were also rife

[3] National banks around the country were required to keep reserves in banks located in select cities; in turn, banks in these cities were required to keep reserves in New York City banks (National Bank Act of 1864, vol. 13, sec. 31). As a result, all national banks were no more than one step removed from New York City banks, many of which were members of the NYCH.

with editorials and opinion pieces arguing about the appropriateness and efficiency of CLCs in arresting the financial panic (*WSJ* 1907a; *WSJ* 1907b; *WSJ* 1907c; *WSJ* 1907i).

**18. Disclosure: The NYCH disclosed the amount of CLCs it issued after the panic had subsided.**

The NYCH did not disclose daily CLC issuance. It only responded to requests by newspapers, or the Office of the Comptroller of the Currency notified the public of CLC usage until the crisis subsided (*NYT* 1907d; *WSJ* 1907f). In April 1908, the Loan Committee issued a report summarizing the usage of CLCs. This followed reports in previous crises and seems to have been a feature of NYCH loan committees (*NYT* 1893). Data regarding loan certificate issuance was kept internally by the NYCH, preserved in its archives, but was not used here.

**19. Stigma Strategy: The NYCH did not release bank financial statements during the Panic of 1907.**

As in previous crises, the NYCH suspended the publication, normally released each Saturday, of detailed bank statements for its members and certain nonmembers (*NYT* 1907d). Publication was suspended October 26 and resumed on February 8, 1908 (*New York Evening Telegram* 1907; *NYT* 1908c). These measures addressed stigma that individual banks might face should outside actors learn of their financial condition.

The NYCH itself also faced stigma in issuing CLCs and did not disclose daily CLC issuance (*WSJ* 1907f). Before the membership approved CLCs, some voices—including nonmember financier J.P. Morgan—said that issuing CLCs threatened New York City's reputation as an international financial center, which delayed passage of the resolution (*WSJ* 1907c).

**20. Exit Strategy: The NYCH stopped issuing CLCs after substantial gold imports arrived to expand the supply of legal tender.**

The NYCH issued its last CLCs on January 30, 1908. It had signaled a week before that it would do so, citing the unanimous opinion of the Clearinghouse Committee that normal liquidity conditions had returned, making emergency currency unnecessary (*NYT* 1908a). However, as of January 30, 1908, four member banks had not yet redeemed their CLCs. The NYCH appointed some of the members who examined collateral for the Loan Committee to supervise the collection of these debts (*NYT* 1908b). Eventually, these banks paid their debts, though Oriental Bank failed in the course of doing so (Gorton and Tallman 2016).

# References and Key Program Documents

Documents cited in the text are introduced with a parenthetical author-date citation. Documents that are relevant to this case but have not been cited in text do not include this parenthetical reference.


**Program Summaries**

(Wicker 2000) Wicker, Elmus. 2000. *Banking Panics of the Gilded Age*. Cambridge: Cambridge University Press.
*A study of the banking panics during the National Banking Era, with specific focus on bank closures and causes*.
https://ypfs.som.yale.edu/library/document/banking-panics-gilded-age

**Implementation Documents**

(NYCH 1907a) New York Clearing House (NYCH). 1907a. "Sample Redemption Notice." Box 149. New York Clearing House Association records, 1853–2006.
*Notice to NYCH membership to return particular CLCs for payment*.
https://ypfs.som.yale.edu/library/sample-redemption-notice

(NYCH 1907b) New York Clearing House (NYCH). 1907b. "Unsigned Guaranty Resolution." Box 149. New York Clearing House Association records, 1853–2006.
*Agreement by NYCH members to jointly guarantee issued CLCs*.
https://ypfs.som.yale.edu/library/unsigned-guaranty-resolution

(Woodward 1907) Woodward, James T. 1907. "Unfilled Application for CLCs." New York Clearing House. Box 149. October 29, 1907. New York Clearing House Association records, 1853–2006.
*Letter directing member banks to apply for CLCs before 11am and transfer collateral between 10am and 12pm*.
https://ypfs.som.yale.edu/library/unfilled-application-clcs

(Woodward and Sherer 1907) Woodward, James T., and William Sherer. 1907. "Preface to Weekly Statement Form." New York Clearing House. Box 149. November 6, 1907. New York Clearing House Association records, 1853–2006.
*Letter informing bank presidents that interest would be collected and paid on CLCs on the 15th of each month*.
https://ypfs.som.yale.edu/library/preface-weekly-statement-form

**Legal/Regulatory Guidance**

(National Bank Act of 1864) *An Act to Provide a National Currency, Secured by a Pledge of United States Bonds, and to Provide for the Circulation and Redemption Thereof (National Bank Act)*. 1864. 13 Stat. 99. 1st session, Congress 38–106.
*Law creating the system of national banks and defining (broadly) lawful money and the*

*clearinghouses' role in managing both*.
https://ypfs.som.yale.edu/library/document/national-bank-act

(National Bank Act of 1865) *An Act to Amend an Act Entitled "An Act to Provide Internal Revenue to Support the Government, to Pay Interest on the Public Debt, and for Other Purposes," Approved June Thirtieth, Eighteen Hundred and Sixty-Four*. 1865. 13 Stat 484 §6. 2nd session, Congress 38–78.
*Law taxing circulating private notes at 10%*.
https://ypfs.som.yale.edu/node/20293

**Media Stories**

(*CFC* 1893) Commercial and Financial Chronicle (*CFC*). 1893. "The Financial Situation." New York, sec. State and City, August 5, 1893.
*Article describing gold imports in the Panic of 1893*.
https://ypfs.som.yale.edu/node/20292

(*New York Evening Telegram* 1907) *New York Evening Telegram*. 1907. "Developments in Bank Situation." In *The Roosevelt Panic of 1907*, by Adolph Edwards, 2nd ed., 80–86. New York: Anitrock Publishing Company.
*On-the-ground account of the progress of the Panic of 1907*.
https://ypfs.som.yale.edu/library/developments-bank-situation

(*NYT* 1873) *New York Times* (*NYT*). 1873. "The Crisis." September 25, 1873.
*Article about the continuing crisis on Wall Street*.
https://ypfs.som.yale.edu/library/document/crisis-september-25-1873

(*NYT* 1893) *New York Times* (*NYT*). 1893. "Loan Committee's Work Done," November 3, 1893.
*Article discussing the final clearinghouse loan certificate issues of the New York Clearing House's Loan Committee in the Panic of 1893*.
https://ypfs.som.yale.edu/node/20203

(*NYT* 1907a) *New York Times* (*NYT*). 1907a. "Clearing House Certificates Used," October 27, 1907.
*Article describing the approval vote for CLCs*.
https://ypfs.som.yale.edu/node/20269

(*NYT* 1907b) *New York Times* (*NYT*). 1907b. "Bankers Confident of Situation To-Day," October 28, 1907.
*Article describing the situation at the NYCH just after the first issuance of CLCs*.
https://ypfs.som.yale.edu/node/20270

(*NYT* 1907c) *New York Times* (*NYT*). 1907c. "Legality of Certificates.," November 13, 1907.
*Article considering the legal status of CLCs and the beliefs that they were illegal*.
https://ypfs.som.yale.edu/node/20268

(*NYT* 1907d) *New York Times* (*NYT*). 1907d. "$33,750,000 in Certificates.," December 10, 1907.
*Article describing how many certificates had been issued*.
https://ypfs.som.yale.edu/node/20271

(*NYT* 1908a) *New York Times* (*NYT*). 1908a. "Two Banks Closed by Withdrawals," January 30, 1908.
*Article describing casualties of the Panic of 1907*.
https://ypfs.som.yale.edu/node/20266

(*NYT* 1908b) *New York Times* (*NYT*). 1908b. "All Certificates to Go This Week," February 2, 1908.
*Article describing the wind-down of CLCs and the suspension of banks in default*.
https://ypfs.som.yale.edu/node/20272

(*NYT* 1908c) *New York Times* (*NYT*). 1908c. "Plans Laid for Full Weekly Statement," February 3, 1908.
*Article describing an announcement by the NYCH that the association would resume weekly financial statement publications*.
https://ypfs.som.yale.edu/node/20265

(*NYT* 1908d) *New York Times* (*NYT*). 1908d. "Stocks Sell off at Close—Banks Report Substantial Surplus Increase," March 29, 1908, sec. Financial Markets.
*Article describing the last payments of CLC obligations by the National Bank of North America to a debt collector*.
https://ypfs.som.yale.edu/node/20267

(*WSJ* 1907a) *Wall Street Journal* (*WSJ*). 1907a. "The Clearing House and the Government," October 22, 1907, sec. Review and Outlook.
*Article arguing for NYCH governance over public control of banking regulation*.
https://ypfs.som.yale.edu/node/20280

(*WSJ* 1907b) *Wall Street Journal* (*WSJ*). 1907b. "Federal Clearing House," October 25, 1907, sec. Review/Outlook.
*Article commending the NYCH on its efforts before the issuance of CLCs*.
https://ypfs.som.yale.edu/node/20281

(*WSJ* 1907c) *Wall Street Journal* (*WSJ*). 1907c. "Loan Certificates," October 26, 1907.
*Article praising the NYCH and JP Morgan for their actions before the issuance of CLCs*.
https://ypfs.som.yale.edu/node/20282

(*WSJ* 1907d) *Wall Street Journal* (*WSJ*). 1907d. "Clearing House Decides to Issue Loan Certificates: Immediate Issue Determined Upon at Meeting of Clearing House Association Held Saturday. Financial Situation Decidedly Improved—Only One Small Suspension Announced—National City Bank Will Import $3,500,000 Gold—More Will Probably Be Secured in London Open Market to-Day—Thanks to Cortelyou," October 28, 1907.

*WSJ article describing the practices of savings banks limiting convertibility of deposits*.
https://ypfs.som.yale.edu/node/20283

(*WSJ* 1907e) *Wall Street Journal* (*WSJ*). 1907e. "Trust Companies Apply for Membership," October 28, 1907.
*Article describing the fact that trust companies were not NYCH members*.
https://ypfs.som.yale.edu/node/20284

(*WSJ* 1907f) *Wall Street Journal*. 1907f. "Fifteen Millions Gold Engaged for Import and More Coming: The Situation Greatly Improved Thereby, as Well as by Restrictions to Stop Hoarding Cash. Gold Imports Will Not Be Aided by Special U.S. Deposits Against Engagements—This the Great European Banks Disliked Last Year—but U.S. Deposits Will Be Continued Upon Security of Savings Bank Bonds from Day to Day as May Be Needed," October 29, 1907, sec. The Banking Situation.
*WSJ article describing the use of loan certificates to import gold*.
https://ypfs.som.yale.edu/node/20285

(*WSJ* 1907g) *Wall Street Journal* (*WSJ*). 1907g. "Money: Engagements of Gold for Import Should Increase Confidence. How the Use of Clearing House Certificates Will Release About Fifteen Million Dollars Cash Daily That Can Be Used for Other Purposes—Foreign Exchange Very Weak and Quotations Nominal—Call Money Opened at 12%," October 29, 1907. ProQuest Historical Newspapers.
*Article describing the use of CLCs to import gold from London*.
https://ypfs.som.yale.edu/node/20286

(*WSJ* 1907h) *Wall Street Journal* (*WSJ*). 1907h. "On Guard," October 29, 1907.
*Article describing NYCH officials and their organization during the crisis*.
https://ypfs.som.yale.edu/node/20287

(*WSJ* 1907i) *Wall Street Journal* (*WSJ*). 1907i. "The Loan Certificates," October 30, 1907.
*Article arguing in favor of a system of a nationalized, elastic currency*.
https://ypfs.som.yale.edu/node/20288

**Press Releases/Announcements**

(*CFC* 1907) *Commercial and Financial Chronicle (CFC)*. 1907. "Statements of the New York City Clearing-House Banks," New York, October 5, 1907.
*Collected statements of the NYCH as published in the Commercial & Financial Chronicle*.
https://ypfs.som.yale.edu/node/20251

(Gilbert 1908) Gilbert, Alexander. 1908. "Vital Issues." Speech delivered at the 34th Annual American Bankers' Association Convention, Denver, October 1, 1908. In *Commercial and Financial Chronicle*, October 10, 1908.
*Speech by the NYCH president justifying the suspension of payments and loans to Wall Street stock market investors*.
https://ypfs.som.yale.edu/node/20248

(Taft 1907) Taft, William Howard. 1907. "The Panic of 1907; Its Causes, Its Probable Effects and the Relation to It of the Policies of the National Administration." Address presented at the Banquet of the Merchants' and Manufacturers' Association, Boston, December 30.
*Speech by President Taft about the causes of the Panic of 1907*.
https://ypfs.som.yale.edu/library/document/panic-1907-its-causes-its-probable-effects-and-relation-it-policies-national

(US House Stanley Committee 1911) US House of Representatives Committee on Investigation of United States Steel Corporation (US House Stanley Committee). 1911 "Hearings Before the Committee on Investigation of United States Steel Corporation." May 27, 1911.
*Committee hearings considering the copper market corner and Heinze-Morse banks*.
https://ypfs.som.yale.edu/node/20274

(US Senate 1908) US Senate, 60th Congress, 1st Session. 1908. "Response of the Secretary of the Treasury to Senate Resolution No. 33 of December 12, 1907, Calling for Certain Information in Regard to Treasury Operations, United States Depositaries, the Condition of National Banks, Etc." In Senate Documents, 8:1–232. US Congressional Serial Set No. 5241. Washington: US Government Printing Office.
*Information describing Treasury deposits in NYCH (and other NYC) banks during the Panic of 1907*.
https://ypfs.som.yale.edu/library/response-secretary-treasury-senate-resolution-no-33-december-12-1907-calling-certain

(Warner, Brawley, and McLaurin 1893) Warner, John De Witt, William H. Brawley, and John L. McLaurin. 1893. *Hearings before the House Committee on Banking and Currency*, October 25, 1893. House Committee on Banking and Currency. Washington, D.C.: U.S. Government Printing Office.
*Testimony and questions about CLCs in the Panic of 1893*.
https://ypfs.som.yale.edu/node/20202

**Reports/Assessments**

(CHC 1908) Clearing House Committee (CHC). 1908. "Report of the New York Clearing-House Committee, Acting as a Loan Committee in 1907." New York: New York Clearing House. Box 149. April 7, 1908. New York Clearing House Association records, 1853–2006.
*Internal report of the Loan Committee written after the Panic of 1907, and later made public, detailing the shape of CLC issuance*.
https://ypfs.som.yale.edu/node/20250

(OCC 1907) Office of the Comptroller of the Currency (OCC). 1907. Annual Report of the Comptroller of the Currency. December 2, 1907.
*Report by the OCC containing information on the Panic of 1907, as well as data on the previous NYCH interventions*.
https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1907

(OCC 1908) Office of the Comptroller of the Currency (OCC). 1908. Annual Report of the Comptroller of the Currency. December 7, 1908.
*Report by the OCC containing information on the Panic of 1907, as well as data on the previous NYCH interventions*.
https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1908

**Key Academic Papers**

(Andrew 1908) Andrew, A. Piatt. 1908. "Substitutes for Cash in the Panic of 1907." *Quarterly Journal of Economics* 22, no. 4 (August): 497–516.
*Article describing CLC issuance and payment limitations around the US*.
https://ypfs.som.yale.edu/node/20012

(Cannon 1910a) Cannon, James Graham. 1910a. "Clearing House Methods and Practices." 61st Senate Doc. 491. Publications of the National Monetary Commission. Washington, D.C.: Government Printing Office.
*Report for the National Monetary Commission by an individual connected to the clearinghouses that provides detail on their operations and structure*.
https://ypfs.som.yale.edu/library/document/clearing-house-methods-and-practices

(Cannon 1910b) Cannon, James Graham. 1910b. "Clearing House Loan Certificates and Substitutes for Money Used During the Panic of 1907: With Suggestions for an Emergency Currency Based upon Such Loan Certificates." Speech presented at the Finance Forum, New York, March 30, 1910.
*Speech surveying CLC features around the US*.
https://ypfs.som.yale.edu/node/20249

(Capie et al. 1994) Capie, Forrest, Stanley Fischer, Charles Goodhart, and Norbert Schnadt. 1994. *The Future of Central Banking: The Tercentenary Symposium of the Bank of England*. Cambridge, UK: Cambridge University Press.
*Influential historical survey describing the evolution of central banks and lenders of last resort*.
https://ypfs.som.yale.edu/node/20273

(Friedman and Schwartz [1963] 1993) Friedman, Milton, and Anna Jacobson Schwartz. [1963] 1993. *A Monetary History of the United States 1867–1960*. 9th printing. National Bureau of Economic Research Studies in Business Cycles 12. Princeton: Princeton University Press.
*Book describing money after the National Banking Acts*.
https://ypfs.som.yale.edu/node/18179

(Fulmer 2022a) Fulmer, Sean. 2022a. "United States: New York Clearing House Association The Crisis of 1914." *Journal of Financial Crises* 4, no. 2.
*Case study of the New York Clearing House Association's response to the outbreak of World War I through the issuance of clearinghouse loan certificates*.
https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/57

(Fulmer 2022b) Fulmer, Sean. 2022b. "New York Clearing House Association: Overview." *Journal of Financial Crises* 4, no. 2.
*Overview document that details the New York Clearing House Association*.
https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/32

(Fulmer 2022c) Fulmer, Sean. 2022c. "United States: Aldrich-Vreeland Emergency Currency during the Crisis of 1914." *Journal of Financial Crises* 4, no. 2.
*Case study on the Treasury Department's role in issuing emergency currency during the Crisis of 1914*.
https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/53

(Gorton and Tallman 2016) Gorton, Gary, and Ellis W. Tallman. 2016. "How Did Pre-Fed Banking Panics End?" NBER Working Paper 22036.
*Working paper on the actions committed by the NYCH in response to banking panics in the absence of a central bank*.
https://ypfs.som.yale.edu/library/how-did-pre-fed-banking-panics-end

(Moen and Tallman 2000) Moen, Jon R., and Ellis W. Tallman. 2000. "Clearinghouse Membership and Deposit Contraction during the Panic of 1907." *Journal of Economic History* 60, no. 1 (March): 145–63.
*Article providing information on NYCH membership during the panic of 1907*.
https://ypfs.som.yale.edu/node/20252

(Moen and Tallman 2013) Moen, Jon R., and Ellis W. Tallman. 2013. "Close but Not a Central Bank: The New York Clearing House and Issues of Clearing House Loan Certificates." Federal Reserve Bank of Cleveland Working Paper, no. 13-08.
*Paper that closely examines the issuance of CLCs by the NYCH during the National Banking Era*.
https://ypfs.som.yale.edu/library/close-not-central-bank-new-york-clearing-house-and-issues-clearing-house-loan-certificates

(Sprague 1910) Sprague, Oliver Mitchell Wentworth. 1910. *History of Crises under the National Banking System*. National Monetary Commission. 2nd 61st Congress: 538. Washington, D.C.: US Government Printing Office.
*Definitive account of the NYCH crises, leading to the creation of the Federal Reserve*.
https://ypfs.som.yale.edu/library/document/history-crises-under-national-banking-system

(Tallman and Moen 2012) Tallman, Ellis W., and Jon R. Moen. 2012. "Liquidity Creation without a Central Bank: Clearing House Loan Certificates in the Banking Panic of 1907." *Journal of Financial Stability* 8, no. 4 (December): 277–91.
*Article analyzing the use of CLCs in 1907 and the importance of gold imports during that crisis*.
https://ypfs.som.yale.edu/node/20291

(Timberlake 1984) Timberlake, Richard H. 1984. "The Central Banking Role of Clearinghouse Associations." *Journal of Money, Credit and Banking* 16, no. 1: 1–15.

*Journal article on the role of the NYCH as a private lender of last resort without a central bank in existence*.
https://ypfs.som.yale.edu/library/document/central-banking-role-clearinghouse-associations

(Warburg 1911) Warburg, Paul M. 1911. "A United Reserve Bank of the United States." *Proceedings of the Academy of Political Science in the City of New York* 1, no. 2: 302–42. *Article blueprinting the Federal Reserve*.
https://ypfs.som.yale.edu/node/20289

# Appendix: NYCH Clearing Process

### An excerpt from Chapter XIV, "Daily Routine of the New York Clearing House," in *Clearing House Methods and Practices* by James Graham Cannon (1910a)

Each business day, at 10 o'clock, the exchanges take place between the banks. About fifteen minutes before the hour designated the clerks begin to arrive. Formerly it was the custom for each member to send only two clerks, but so numerous and cumbersome have become the exchanges of many of the banks that it is now necessary to send one and sometimes two extra clerks to assist in transporting the items to and from the clearinghouse and in delivering the packages. The two essential representatives of each bank are the "delivery clerk" and the "settling clerk." The former delivers the packages brought, and the latter receives the return packages from the messengers of the other banks.

Each member sends its items for the other banks made out separately and inclosed in envelopes, with the amounts listed on the "exchange slip" attached to the exterior. On their arrival at the house the settling clerks furnish the proof clerk, sitting at his desk in the manager's gallery, with the "first ticket," upon which is entered the "amount brought" or "credit exchange," and which the latter transcribes on the clearinghouse proof under the head of "Banks Cr." The total of the amounts thus brought by the several clerks constitutes the right-hand main column of that sheet. If each messenger has a package for each of the other banks, there are 2,500 in all to be delivered.

As a fact, in all other respects than the quantity of packages, this is the number of transactions between the clerks, for it is found in practice better to use a blank slip than to omit a slip merely because there is no amount to put upon it. This plan saves doubt and unnecessary searching when looking after the proof. The stationery used by each of the several banks is put up in sets in numerical order, and this is a reason why it is easier to use all the slips than to discard those which happen to have no items. Accordingly, as the delivery clerks pass the desks, as is described farther on, it is the rule to deposit the "small ticket" with the receiving clerk in each case, whether there is a package corresponding to it or not. When the settling clerks come to make their summing up, first checking back by the small tickets, they find that the blank spaces in their sheets are justified by the blank tickets of corresponding numbers and are in this respect assured of the correctness of their work.

When the hand of the clock points to a few minutes before 10 o'clock the manager appears in his gallery, usually surrounded by a group of visitors. At one minute before 10 he sounds a gong as a signal for each of the clerks to station himself in his proper place. The settling clerks occupy their separate desks on the inside of the counter, while the delivery clerks form on the outside with their exchanges either on the left arm or carried in a box or case of some light material. The delivery clerks arrange themselves in the consecutive desk order and stand ready for delivery as they pass along the counter. They carry "delivery clerks' receipts" containing the amounts for each bank arranged in order, upon which the several settling clerks, or their assistants, give receipts for the package delivered.

All are now in position for the exchange. The manager calls "ready," and promptly at 10 o'clock he sounds the gong again and the delivery of the packages begins. He looks down upon four columns of young men moving simultaneously like a military company in step. At the start each advances to the desk in front where his first delivery is to be made. He deposits the package of items and also the receipt slip on which the assistant of the settling clerk (or, in the case of small banks, the settling clerk himself) writes his initials opposite the amount of the package delivered in the blank space provided for that purpose. At the same time, in an opening in the desk provided for that purpose, he deposits a "small ticket" containing the amount of the package. If correct, it must agree with the amount listed on the "ex-change slip." This process is repeated at the desk of all the banks, each clerk making the complete circuit in ten minutes to the point from which he started. Being now at liberty, each delivery clerk takes back to his bank the exchanges deposited by the other messengers, while the settling clerks remain until the proof is made.

*Source: Cannon 1910a.*