

Journal of Financial Crises

Volume 4 | Issue 2

2022

New York Clearing House Association: Overview

Sean Fulmer

Yale School of Management

Follow this and additional works at: <https://elischolar.library.yale.edu/journal-of-financial-crises>



Part of the [Economic Policy Commons](#), [Finance and Financial Management Commons](#), [Macroeconomics Commons](#), [Policy Design, Analysis, and Evaluation Commons](#), [Policy History, Theory, and Methods Commons](#), and the [Public Administration Commons](#)

Recommended Citation

Fulmer, Sean (2022) "New York Clearing House Association: Overview," *Journal of Financial Crises*: Vol. 4 : Iss. 2, 694-707.

Available at: <https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/32>

This Case Study is brought to you for free and open access by the Journal of Financial Crises and EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact journalfinancialcrises@yale.edu.

New York Clearing House Association: Overview¹

Sean Fulmer^{2, 3}

Yale Program on Financial Stability Case Study

June 15, 2022

Abstract

Between the creation of nationally chartered banks in 1863 and the launch of the Federal Reserve System in 1914, an organization of most New York City banks—originally formed to simplify settling clearing balances—joined together during banking panics to reallocate liquidity and restore market confidence. In the absence of a central bank, this organization, the New York Clearing House Association (NYCH), issued clearinghouse loan certificates (CLCs) that association members could use as temporary cash substitutes for settling clearing balances between banks. CLCs allowed borrowing banks to maintain their cash reserves without costly asset liquidations. The NYCH used CLCs in six crises across this period: 1873, 1884, 1890, 1893, 1907, and 1914. Other major cities had comparable organizations that often took similar measures during crises. This document serves as an overview to the NYCH structure, while the six cases deal with the individual crises and responses.

Keywords: clearinghouse loan certificates, National Banking Era, New York Clearing House Association, private lender of last resort

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.

³ Benjamin Hoffner contributed research to this overview.

Overview

In the latter half of the 19th century, clearinghouses functioned as an integral part of the infrastructure of the financial system. They provided a centralized location at which banks in American cities could settle their accounts and make or receive payment for daily balances between one another, without the additional cost of sending clerks to each individual bank. In structure, clearinghouses were a single organization, comprising many private member banks (Gorton and Tallman 2018).

New York City, even more than today, functioned as a central financial hub for the United States. For instance, by 1873, seven banks in the city accounted for more than 70% of the nation's bank deposits (Gorton and Tallman 2016; Sprague 1910). In 1853, 52 New York City banks (including all but a half-dozen small institutions) formed the New York Clearing House Association (NYCH). The guiding purpose for creating the NYCH was to make the banking payments system more efficient. However, banking panics led the NYCH to expand beyond this simple administrative role.

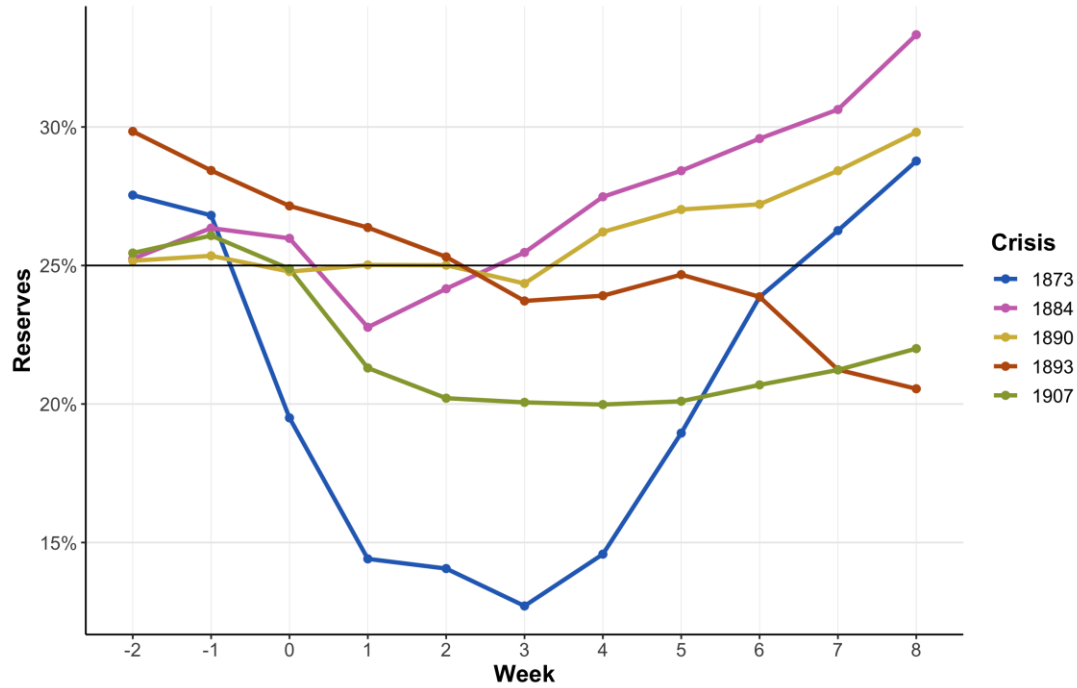
At the time, the United States had no central bank. The Federal Reserve System would not be created until 1913 and was not operational until late 1914. In its place, the NYCH stepped in during banking panics to provide liquidity to its members, and thus the financial system indirectly, acting as a private lender of last resort (Gorton and Tallman 2018). This assumed role in the absence of a central bank resembled the private-lender-of-last-resort function the Bank of England performed in the 19th century (Fulmer 2022a; Fulmer 2022b). Comparable organizations in cities across the United States took similar measures.

During the National Banking Era (1863–1913), banking panics typically intensified after the widespread diffusion of information regarding failed businesses, which caused depositors to worry about the backing of their deposits (Gorton and Tallman 2018). Banks in this era frequently turned to an illegal, but rarely penalized, measure to protect themselves from runs: suspension of convertibility. Banks would refuse to honor their contracts with demand depositors by not exchanging bank debt for cash on demand. Although individual banks repeatedly did this, the NYCH never announced a universal suspension (Gorton and Tallman 2018, 39).

If the NYCH had not reallocated liquidity across its membership, banks facing runs on their deposits would have been forced to liquidate assets to cover clearing obligations and withdrawal requests. Those liquidations likely would have fallen heavily on call loans, which were short-term loans to brokers collateralized by stocks or bonds, similar to today's repurchase agreements (repos). The call loan market functioned as the most significant liquidity provider for the stock market at the time (Anderson, Hachem, and Zhang 2021). Therefore, a sudden increase in member banks liquidating call loan assets would have had serious consequences for the overall volatility of the financial system. Additionally, in times of crisis, liquidation of these assets could have resulted in significant losses, if the stock market even remained open (Anderson, Hachem, and Zhang 2021). See Figures 1 and 2 for depictions of NYCH reserve ratios and net deposits during crises as a demonstration of

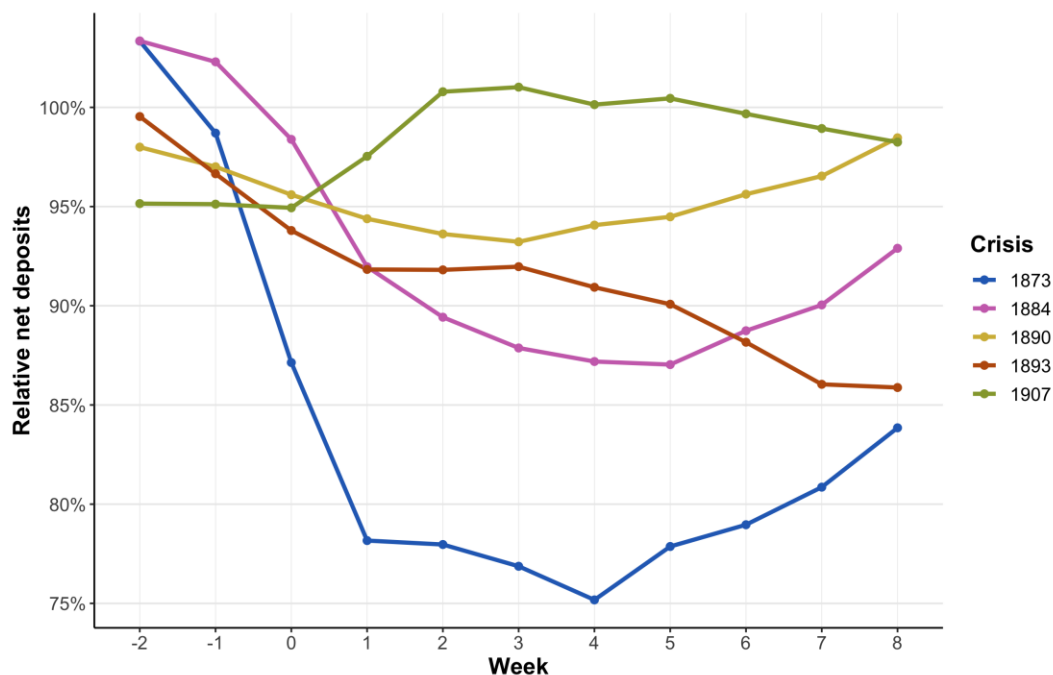
funding pressures on banks in these periods. The crisis of 1914 is not included as the data source used in these graphics was published in 1910.

Figure 1: NYCH Reserve Ratios during Crises (%)



Sources: Author's creation (Andrew 1910).

Figure 2: Weekly Net Deposits of NYCH Banks during Crises, Relative to Annual Average



Sources: Author's creation (Andrew 1910).

Once the NYCH determined a panic was occurring, it typically utilized several policy tools: (1) anonymous temporary lending via clearinghouse loan certificates (CLCs), (2) suppression of balance sheet reporting requirements for individual banks, (3) special examinations of problem banks similar to modern stress tests, (4) banks' suspension of payments, and (5) depositor bailouts of member banks (Gorton and Tallman 2018). Although the first policy tool is the focus of the Broad-Based Emergency Liquidity case series, the other tools are important measures that intersect with and complement emergency lending. Gorton and Tallman (2018) provide a detailed discussion of the other clearinghouse tools. Additionally, the NYCH sometimes issued certified checks "payable through the Clearing House" as a form of quasi-currency to expand banks' reserves (Timberlake 1984).

The NYCH's interventions in crises also coexisted with separate actions of private banks and the US Treasury designed to address the liquidity constraints. In at least two of the six crises, private bankers joined together to form loan syndicates, which lent to distressed NYCH member banks (Wicker 2000, 45, 90). In the majority of the banking crises, the Treasury also provided liquidity through large bond redemptions and deposit placements at member banks (Cannon 1910; Sprague 1910; Wicker 2000, 44).

Administration

CLCs were collateralized loans extended to NYCH member banks and used solely for the purpose of temporarily settling payments with other members (Gorton and Tallman 2016). During banking crises, the NYCH's governing body (the Clearing House Committee) created the Clearing House *Loan* Committee, a temporary administration activated in times of distress to facilitate CLC issuance. The decision to issue CLCs, and the volume the association would issue, required the approval of 75% of NYCH members (Cannon 1910; Sprague 1910). The Loan Committee issued CLCs, which were the liabilities of the individual borrowing banks, but their repayment was guaranteed by the joint membership.

Member banks deposited collateral at the NYCH, subject to at least a 25% haircut, and received CLCs, which could be used only as temporary substitutes for legal tender when settling balances between member banks (Gorton and Tallman 2016). Instead of a single loan between two banks, CLCs functioned as a transferrable liability (Moen and Tallman 2013). Member banks could not refuse CLCs as a substitute for cash reserves in the settlement of daily balances; doing so would have resulted in their being expelled from the association (Moen and Tallman 2013). By receiving and using CLCs to settle their daily balances, borrowing members could continue their lending to the call loan market. While not directly expanding the supply of cash, the issuance of CLCs allowed the member banks of the NYCH greater freedom to utilize their supplies of cash (Moen and Tallman 2013).

All members in the NYCH guaranteed payment of the CLCs or risked expulsion (Gorton and Tallman 2016). Membership in the NYCH was integral for many member banks' operations at the time, so they would not risk this possibility. If, upon loan termination, the borrowing bank could not repay, the NYCH would charge all member banks relative to their share of capital to the entire membership. This shared loss responsibility further enforced the transferability of CLCs. The bank that accepted the CLCs received interest from the borrowing bank at rates close to the market rates for commercial paper, although the cost to borrowing banks was higher because of the 25% haircut (Gorton and Tallman 2016).

The NYCH utilized an additional tool before the National Banking Era, and in 1873 for the last time: the pooling of member banks' reserves into one collective pool (Anderson, Hachem, and Zhang 2021). Reserve pooling went beyond joint guarantees of repayment to virtually transform the members of the NYCH into a single institution, a proto-central bank. Under this arrangement, the NYCH could shift reserves among member banks, depending on the stability of individual banks. After 1873, the NYCH membership preferred issuing CLCs to reserve pooling. Reserve pooling offered no clear incentives to participating banks, while accepting CLCs guaranteed they would receive interest (Moen and Tallman 2013). Moreover, quantitative research by Anderson, Hachem, and Zhang (2021) shows that CLCs achieved the same result as reserve pooling, thus making reserve pooling a costly and redundant option.

Collateral

Members applying for CLCs had to present collateral to the Loan Committee. The range of eligible collateral generally consisted of "bills receivable, stocks, bonds, and other securities"

(OCC 1907). In a sense, the CLC system resembled a modern triparty repurchase agreement, in which the NYCH managed the deposited collateral assets (Moen and Tallman 2013). However, CLC transactions did not include the transfer of ownership of the underlying collateral. Member banks mostly used commercial paper and commercial loans as collateral for CLCs, subject to the minimum 25% haircut, although they had some discretion in enforcing this haircut. Member banks could post high-quality US government bonds or gold certificates as collateral at par value without a haircut (OCC 1873). The NYCH could request additional collateral from borrowing banks if the initial collateral lost value or matured (Gorton and Tallman 2016).

If the borrower could not repay the CLCs, the NYCH had full recourse to the collateral and could liquidate it to recoup payment. This happened occasionally during the National Banking Era. In 1884, the Loan Committee held the collateral of a failed borrowing bank for more than a year as it waited for market prices to stabilize and ensure a liquidation at a higher value (Moen and Tallman 2013).

Legality

Over the years, the legality of the NYCH's and other clearinghouses' issuance of CLCs during panics has been controversial (Timberlake 1984). Regulators did not weigh in on the topic, although they also saw CLC issuance as essential to ending banking panics. The only contemporary court case we located supports the legality of CLC issuance.

According to the National Bank Act of 1865, any currency not issued by a nationally chartered bank was subject to a 10% tax, priced extremely high to end the issuance of notes by state-chartered banks and private banks (US Congress 1865). CLCs effectively functioned as substitutes for legal tender and could have been considered illegal under that law. However, contemporary sources and later scholars tend to agree that CLCs used entirely for interbank transactions—such as those issued in 1873, 1884, and 1890—did not break the law because they did not circulate as currency. The National Bank Act of 1864 sanctioned clearinghouse certificates that circulated only between banks: “clearing-house certificates, representing specie or lawful money specifically deposited for the purpose of any clearing-house association, shall be deemed to be lawful money” (US Congress 1864). A former NYCH chairman, James Cannon, wrote in 1910 that the term “clearing-house certificates” used in the act could refer both to the certificates that clearinghouses issued in normal times, which were backed by specie or legal tender, and to clearinghouse *loan* certificates that they issued in crises, which were backed by securities (Cannon 1910). He conceded there was a “popular misconception” that CLCs violated the act but argued in response that only a subset of clearinghouses outside New York created CLCs that circulated as money (Cannon 1910). Along those lines, Timberlake cites several authors who in later decades argue that those small-denomination CLCs issued outside New York were clearly illegal (Timberlake 1984).

In 1895, the Pennsylvania Supreme Court ruled on the legitimacy of the Philadelphia Clearing House Association and the loan certificates it issued during the Panic of 1890, which were similar to the CLCs issued by the NYCH. The case seemed to support the legality of CLCs

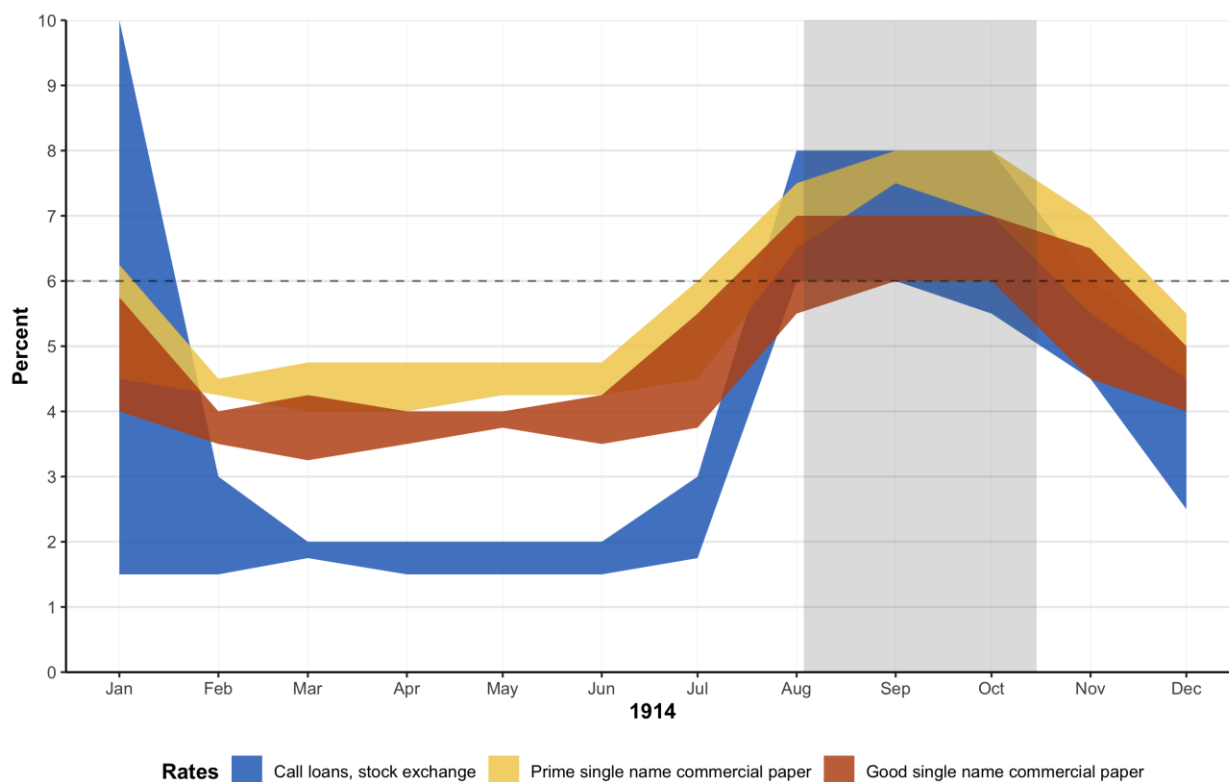
generally (Philler et al. v. Patterson 1895, 482). According to the opinion by Justice Henry W. Williams in Philler et al. v. Patterson:

We are unable therefore to see in what respect these banks have violated the statutes of the United States relating to national banks or have transcended the limits which these statutes have drawn about the business of banking. . . This same method or one identical in general outline has been adopted by the banks in every great city in the United States and by many in other lands; and as far as I am aware, it has nowhere been held that the method is illegal. (Philler et al. v. Patterson 1895, 482)

Whether CLCs violated note issuance laws, banking regulators offered tacit approval of their use by not prosecuting or taxing such operations. Moreover, authorities recognized the value of CLCs in restoring banking stability during a time in which clear legal alternatives did not exist (Andrew 1908).

Rate

Throughout the National Banking Era, borrowing banks faced an interest rate of 6%–7% on CLCs, payable to the accepting bank (Gorton and Tallman 2016). As noted, this interest rate essentially matched the rates on commercial paper; however, the haircut applied to CLC collateral in total made CLCs more costly. Therefore, although subject to interest distinctly above market rates during noncrisis times, in times of stress in markets, CLCs became a viable option and served as an attractive source of a temporary substitute for cash. Further, normalizing market conditions quickly incentivized borrowing banks to retire their CLC holdings (Gorton and Tallman 2016). See Figure 3 for a depiction of how market rates compared with the rate set by the NYCH on CLCs in 1914.

Figure 3: Market Rates during the Crisis of 1914

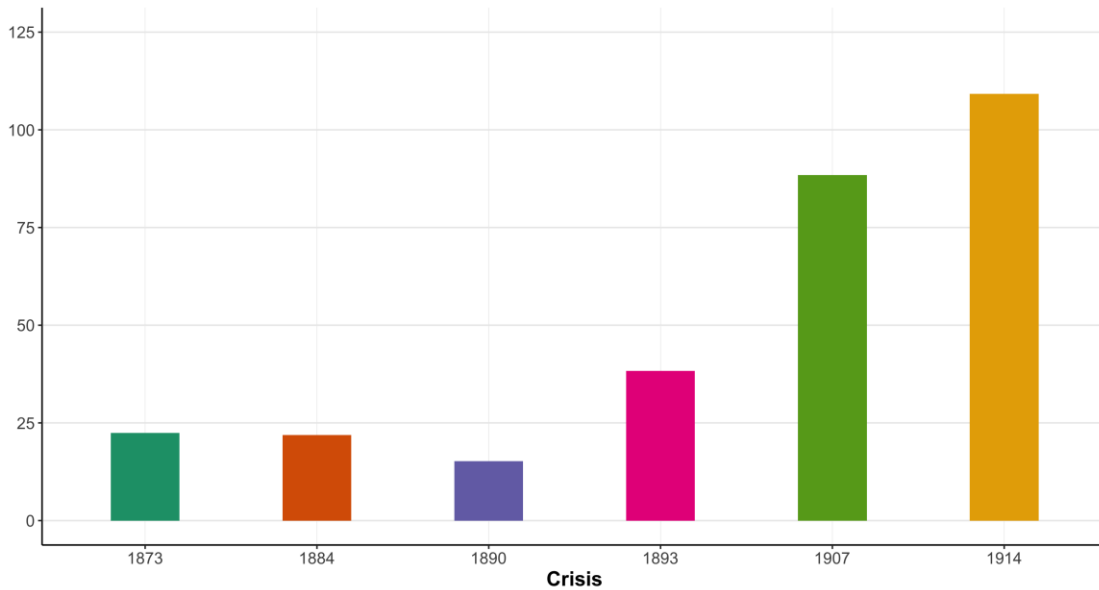
Note: Dotted line at 6% represents the interest rate on CLCs. The grey box represents the period during which the NYCH issued CLCs.

Sources: Author's creation (OCC 1914, 51; OCC 1915, 106).

Usage

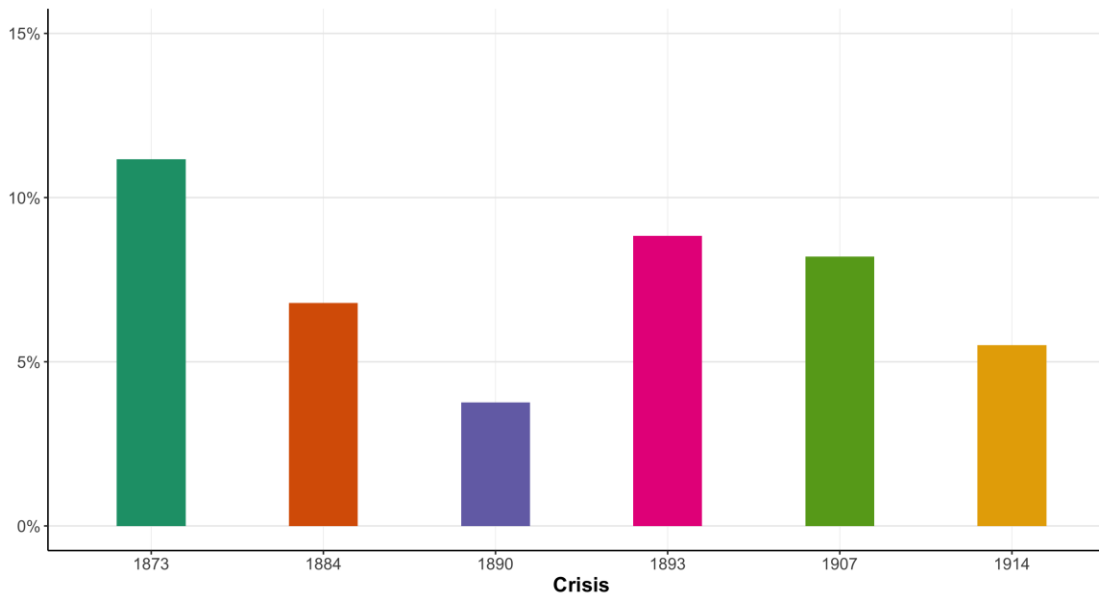
See Figures 4 and 5 for an overview of CLC issuance during the panics covered in this era. As Figure 5 shows, the Panic of 1873 saw the highest usage of CLCs as a percent of average NYCH net deposits, which dovetails with Figures 1 and 2 that show the significant drops in reserves and deposits during that crisis. The relatively lower usage of CLCs in 1914 compared to most earlier crises was in part a result of a novel government intervention, which Fulmer (2022c) covers in a separate case study. Briefly, in 1914, the Treasury Department used its authority under the Aldrich-Vreeland Act of 1908 to issue emergency currency for the first and only time (Jacobson and Tallman 2015). Its emergency currency worked in conjunction with CLCs as a substitute for cash, functioning like national bank notes but backed by securities other than United States bonds. Banks could use emergency currency notes to satisfy depositor withdrawals, unlike CLCs, but could not count them as legal reserves.

Figure 4: NYCH Peak Outstanding CLC Issuance (USD Millions)



Sources: Author's creation (Andrew 1910).

Figure 5: NYCH Peak Outstanding CLC Issuance, as a Percent of Average Net NYCH Deposits



Sources: Author's creation (Andrew 1910).

Imperfections

As a private organization, the NYCH could not fully act as a lender of last resort. It could take care of individual banks in need of liquidity, by requiring other member banks to step up and

assist their fellow members (Moen and Tallman 2013). However, it could not proactively inject liquidity into the financial system beyond the needs of borrowing banks—for example, it could not compel banks to borrow by issuing loan certificates. According to Moen and Tallman (2013), “[T]he severity of the panics suggested that the aggregate liquidity provision through clearing house loan certificates was insufficient.” They suggest that a central bank might have supplied a greater amount of liquidity during the panics of the National Banking Era. Although use of CLCs freed up member’s cash to be deployed against market accounts, their use did not directly provide liquidity to the market, where the crisis typically began. The NYCH was focused on fixing clearing imbalances between members and circulated CLCs only amongst member banks. This relatively narrow focus suggests a flaw of private lenders of last resort. A central bank might have focused on overall market liquidity needs.

Furthermore, the NYCH’s bank-based membership may have made the association less effective over time, as nonbank financial institutions grew in both size and systemic importance. For example, trust companies, which were not members of the NYCH, drove the instability seen in the Panic of 1907. The NYCH could not address these systemic risks directly through CLCs because the certificates could not circulate outside the membership. This restriction reveals another significant flaw in private lender-of-last-resort operations; the assistance cannot typically expand beyond the reaches of the membership (Moen and Tallman 2000).

The NYCH was also constrained by geography, as the Panic of 1893 demonstrated. Failures in the railroad industry led to bank runs in the interior of the United States, not initially affecting New York City or the NYCH (Wicker 2000, 52–55). This crisis eventually affected New York City banks and their reserve balances (Sprague 1910). As a result, the NYCH issued CLCs to prevent widespread bank runs from sweeping the city (OCC 1893). But the NYCH’s authorization of CLCs could not alleviate the stress on non–New York City banks due to the membership aspect of the private lender-of-last-resort structure. In New York City, banks’ total lending during the crisis marginally increased compared to pre-crisis levels, while in Chicago, where no CLCs were issued, loans dropped 15% (Noyes 1894). This divergence reflects Chicago lenders’ need to liquidate assets such as loans to alleviate the panic-induced stress on the banking community, while in New York City, CLCs significantly decreased the demand for such costly measures (Noyes 1894).

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>

Legal/Regulatory Guidance

(Philler et al. v. Patterson 1895) Philler et al. v. Patterson 1895. Pennsylvania State Reports Vol. 168. New York and Albany: Banks & Brothers, Law Publishers.
State reports containing cases decided by the Supreme Court of Pennsylvania, including Philler et al v Patterson.
<https://ypfs.som.yale.edu/library/pennsylvania-state-reports-vol-168>

(US Congress 1864) US Congress. 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)*. 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>

(US Congress 1865) US Congress. 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*. 13 Stat. 484 § 6. 2nd session, Congress 38–78.
Law taxing circulating private notes at 10%.
<https://ypfs.som.yale.edu/node/20293>

Reports/Assessments

(Andrew 1910) Andrew, A. Piatt. 1910. "Statistics for the United States 1867-1909." National Monetary Commission.
Article containing summary statistics for the banking sector in New York City used in the context box.
<https://ypfs.som.yale.edu/node/20294>

(OCC 1873) Office of the Comptroller of the Currency (OCC). 1873. Eleventh Annual Report of the Comptroller of the Currency for the Year 1873. November 28, 1873.

Report from the OCC on the Panic of 1873 and the response by the NYCH.

<https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1873>

(OCC 1893) Office of the Comptroller of the Currency (OCC). 1893. Annual Report of the Comptroller of the Currency. December 4, 1893.

1893 OCC annual report.

<https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1893>

(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 1914) Office of the Comptroller of the Currency (OCC). 1914. Annual Report of the Comptroller of the Currency. December 7, 1914.

Annual report of the OCC, which details CLCs and emergency currency.

<https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1914>

(OCC 1915) Office of the Comptroller of the Currency (OCC). 1915. Annual Report of the Comptroller of the Currency. December 6, 1915.

Annual report of the OCC, which details CLCs and emergency currency.

<https://ypfs.som.yale.edu/library/document/annual-report-comptroller-currency-1915>

Key Academic Papers

(Anderson, Hachem, and Zhang 2021) Anderson, Haelim, Kinda Cheryl Hachem, and Simpson Zhang. 2021. "Reallocating Liquidity to Resolve a Crisis: Evidence from the Panic of 1873." Working Paper 28870. Working Paper Series. National Bureau of Economic Research.

Article that uses a novel dataset of archival records to analyze the NYCH's response to the Panic of 1873.

<https://ypfs.som.yale.edu/library/document/reallocating-liquidity-resolve-crisis-evidence-panic-1873>

(Andrew 1908) Andrew, A. Piatt. 1908. "Substitutes for Cash in the Panic of 1907."

Quarterly Journal of Economics 22, no. 4: 497–516.

Article describing CLC issuance and payment limitations around the US.

<https://ypfs.som.yale.edu/node/20012>

(Cannon 1910) Cannon, James Graham. 1910. "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>

(Fulmer 2022a) Fulmer, Sean. 2022a. "United Kingdom: Bank of England Lending during the Panic of 1825." *Journal of Financial Crises* 4, no. 2.
Case study on the Bank of England's private lender-of-last-resort activities during the Panic of 1825.

<https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/51>

(Fulmer 2022b) Fulmer, Sean. 2022b. "United Kingdom: Bank of England Lending during the Panic of 1866." *Journal of Financial Crises* 4, no. 2.
Case study on the Bank of England's private lender-of-last-resort activities during the Panic of 1866.

<https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/52>

(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*.
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/document/how-did-pre-fed-banking-panics-end>

(Gorton and Tallman 2018) Gorton, Gary, and Ellis Tallman. 2018. *Fighting Financial Crises: Learning from the Past. Fighting Financial Crises*. Chicago: University of Chicago Press.
Book documenting how the New York Clearing House Association responded to several banking panics in the National Banking Era.

<https://ypfs.som.yale.edu/library/document/fighting-financial-crises-learning-past>

(Jacobson and Tallman 2015) Jacobson, Margaret, and Ellis W. Tallman. 2015. "Liquidity Provision during the Crisis of 1914: Private and Public Sources." *Journal of Financial Stability* 17: 22–34.

Article that compares the structure and usage of CLCs and emergency currency during the Crisis of 1914.

<https://ypfs.som.yale.edu/library/liquidity-provision-during-crisis-1914-private-and-public-sources>

(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: 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." Working Paper 1308. Federal Reserve Bank of Cleveland.

Paper that closely examines the issuance of CLCs by the NYCH during the National Banking Era.

<https://ypfs.som.yale.edu/library/document/close-not-central-bank-new-york-clearing-house-and-issues-clearing-house-loan>

(Noyes 1894) Noyes, Alexander D. 1894. "The Banks and the Panic of 1893." *Political Science Quarterly* 9, no. 1: 12–30.

Article surveying the NY banks and the 1893 crisis.

<https://ypfs.som.yale.edu/node/20200>

(Sprague 1910) Sprague, Oliver Mitchell Wentworth. 1910. *History of Crises under the National Banking System*. Publications of the National Monetary Commission, 61st Congress, 2nd Session, Senate Doc. No. 538. Washington, DC: 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>

(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>

Copyright 2022 © Yale University. All rights reserved. To order copies of this material or to receive permission to reprint any or all of this document, please contact the Yale Program on Financial Stability at ypfs@yale.edu .
