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The Panic of 1907*

Ellis W. Tallman

This paper summarizes the academic literature on the Panic of 1907 in the United States. Despite over 100 years of separation, research by financial economic historians continues to uncover important data and underexploited connections between institutions to improve present day understanding of a watershed economic event—one that preceded the successful movement to establish a central bank in the United States in 1913.

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The Banking Panic of 1907 was the final banking panic that took place during the National Banking Era (1863-1913); the most severe of these panics occurred in 1873, 1893 and 1907, whereas the episodes of financial distress in 1884 and 1890 were considered minor in comparison. A central difference between the Panic of 1907 and all the earlier panics of the National Banking Era was the type of financial intermediaries that were struck with panic-related withdrawals. During the prior panics, national banks were more notably affected by widespread withdrawal of deposits. In 1907, widespread withdrawals centered on New York City trust companies, which were state-chartered intermediaries. The aggregate assets of the trust companies were small during prior panics, but had grown rapidly in the decade prior to 1907. By that time, trust companies were second only to national banks in aggregate assets and aggregate net deposits among depository institutions within the New York City financial market. The central role of trust companies in the panic was well-recognized by contemporaries of the event as well as by present day scholars, although recent work draws stronger conclusions about how problems with the trust companies affected subsequent reforms. With specific reference to monetary reform, the Panic of 1907 holds historical distinction as the proximate catalyst for the successful political movement toward the establishment of a central bank in the form of the Federal Reserve System, which has contributed to a surge in interest surrounding the Panic of 1907.

This chapter highlights the key distinguishing factors of the financial crisis, examines its influence on subsequent financial and monetary regulation, and places the Panic of 1907 in historical context relative to the size of the associated business cycle. In addition, the chapter describes how the Panic of 1907 bears some resemblance to the Financial Crisis of 2007-2009 in the United States. Among the similarities, both crises arose among New York City financial intermediaries that were perceived as indirectly connected to the payments system – trust companies in the case of 1907 and investment banks in 2007-2009. Further, these intermediaries lacked direct access to the relevant sources of liquidity – the New York Clearing House in 1907 and the Federal Reserve System in 2007-2009.

Characteristics of Nineteenth-Century Financial Crises and Banking Panics

Economists contemporary to the panics, most notably Sprague (1910), Kemmerer (1910), and Laughlin (1912), attributed financial crises and banking panics to the rigid structure of the National Banking System. The modern reader may find that perspective reasonable because the structure of that monetary system seems awkward and limited. The system lacked a central banking institution that could quickly adjust the stock of high-powered money (legal tender and specie) by the sale or purchase of marketable short-term assets, that is, the system lacked a reliable institution to manage aggregate liquidity provision. The independent Treasury system tried to perform such a role when its fiscal position allowed such actions and when the Treasury Secretary was so inclined, but was not capable of performing the role consistently. As a result, the aggregate supply of liquidity was subject to shocks that were external (and largely exogenous) to the domestic monetary system.

Separately, the existing financial system had no explicit lender of last resort to whom a bank could turn for emergency loans if it was suffering widespread withdrawal of its deposits. In the role of lender or liquidity provider, the New York Clearing House (as well as the clearing houses in other important banking cities) attempted to perform the role, but again, the institution(s) lacked crucial powers to ensure success. To address liquidity demands of individual banks during crisis episodes, the clearing houses employed clearing house loan certificates as a way to increase the credit available to individual member banks during a panic. A clearing house loan certificate was a temporary debt contract (a transaction liability) that was exchangeable at par value between clearing house members and was transferable between clearing house members. The clearing house loan certificate served as an adequate substitute for legal tender and specie for the termination of a payments transaction so that clearing house loan certificates settled debit balances between member banks at the New York Clearing House. However, these certificates

could not pass to intermediaries beyond clearing house members or to the general public, so they were an imperfect substitute for an increase in legal tender or specie. Still, clearing house loan certificates provided temporary credit during credit crises so membership in a clearing house was an important characteristic of any bank that was subject to rapid changes in depositor liquidity demands.

The large, national banks in New York City were the largest correspondent banks in the country, and were the most influential members of the New York Clearing House Association. These banks (referred to as the “Big Six” by Sprague 1910) were: National City, National Park, National Bank of Commerce, First National, Hanover, and Chase National. All national banks in New York City were members of the clearing house, as were many of the state banks. The member banks were associated with the clearing house because their business included a large volume of bank check clearing.

Trust companies were notably absent from the membership of the New York Clearing House. As state-chartered institutions, trust company charters were vague and allowed trusts to engage in activities that were prohibited to a number of other intermediaries. For example, trusts were able to invest in real estate and in stock equity investments directly, which were two activities specifically prohibited for national banks. Trusts competed effectively for retail deposits with national banks in New York City. Yet trusts were not considered part of the high-volume check-clearing part of the payments system, because deposits at trust companies did not turn over at rates similar to national banks. As a result, trust companies did not seek membership in the New York Clearing House when membership was offered in 1903. Trust companies eschewed membership largely because the costs of membership (primarily the 10 percent cash reserve requirement [as a share of deposits]) were perceived to be too high relative to the benefits of

more efficient check clearing. Note that the cash reserve requirement requested by the New York Clearing House was less than half what was required of member national banks.

In contrast to all previous National Banking Era panics, the U.S. was officially on the gold standard during the Panic of 1907.¹ The gold standard put constraints on the financial interventions of the U.S. Treasury to affect the stock of high-powered money, credit availability, or financial conditions more generally. Specifically, the U.S. Treasury was limited by its gold reserve balances and its surplus balances. During the Panic of 1907, the U.S. Treasury added over \$40 million to the stock of high-powered money, but its ability to respond was effectively exhausted by October 25, 1907, limited by the available budget surplus.

Regulatory reserve requirements of the system – lower among country banks and higher in more populous areas – encouraged a pyramid structure of reserve holdings among the national banks. Banks lower down on the pyramid could claim as reserves their deposits in reserve city banks and central reserve city banks further up on the pyramid. For example, an interior, country bank would hold deposits in a New York City national bank and those deposits would count toward the reserve requirement of the interior bank.

The correspondent banking structure contributed toward a concentration of funds in New York City in the large, clearing house member national banks. The funds arising from interior banker balances in New York City national banks were largely used to finance call money loans on the New York Stock Exchange. Call loans on stock market equity provided the “buffer” liquidity for the New York City national banks. During normal financial markets, the correspondent national banks could accommodate idiosyncratic fluctuations in banker balances and liquidity demands

¹ Although the U.S. followed the gold standard since 1879, the commitment to gold was often in doubt until the Gold Standard Act of 1900.

by liquidating (or extending) call loans because there were typically lenders (or liquidators) who would take the opposite transaction. The call market failed miserably, however, during financial crises when banks in aggregate demanded repayment of call loans. During crises, stock equity values were typically falling precipitously, thereby making the liquidation of call loan collateral both unprofitable and of uncertain value. Also, the signaling value of collateral as a “commitment to repay” declined along with the nominal value.

During the National Banking Era, the “usual suspect” as the cause of a financial panic was the banking system’s lack of a reliable mechanism to expand quickly the base money supply in response to increased (seasonal) demand for cash or credit by interior banks. The proximate trigger of a banking panic was often the failure of a major financial intermediary, and the first sign of widespread financial crisis was a steep upward spike in the call loan interest rate and sharp declines in stock equity values. All these characteristics were present in 1907 and they were interrelated. For example, as stock equity values fell, banks and trust companies extended less credit to the stock market while demand for credit may not have contracted, so call money interest rates increased to exorbitant rates.

Goodhart (1969) describes how the structure of the U.S. banking system led to a fragile balance of payments between interior firms, interior banks, New York City banks, and foreign purchasers of U.S. goods. The equilibrium could be altered notably by shocks within the links of the arrangement. In related research, Miron (1986) investigates the period using this conventional description of the financial flows in which the cash demands of the interior banks drain cash balances held in New York City banks in order to finance shipments of grain during harvest season. The typical cash drain would lead to a seasonal rise in the interest rates in New York City during fall, which attracted some of the cash that flowed to the interior back toward New

York City. In a panic, those flows toward New York City do not occur and in fact the flows were clearly reversed.

The Panic of 1907 followed closely a failed attempt to corner a copper stock (see Table 1).

O.M.W. Sprague (1910) claims that the financial market could normally withstand such a financial market shock without much issue. Other unfavorable conditions in the fall of 1907 made the U.S. financial market vulnerable to financial stresses in addition to the perceived flaws in the U.S. banking structure in the National Banking Era described above.

Among the unfortunate circumstances in 1907, the Bank of England imposed unwritten but effective barriers to the free flow of capital to the United States by restricting the issuance of American finance bills issued in London. These bills were typically issued in anticipation of the arrival of U.S. agricultural shipments, and their issuance would thereby smooth gold flows (see Goodhart 1969: 112-17). The restrictions on American finance bills were in response to gold outflows from England to the U.S. in 1906 in part prompted by Treasury Secretary Leslie Shaw's actions to subsidize gold imports to the U.S. from abroad. The subsequent gold outflows from England exacerbated an already significant gold drain from England to the U.S. as a result of insurance payments to San Francisco policy holders by Lloyds of London (see Odell and Weidenmier 2004). The 1906 drain of gold from England nearly caused a panic in London.

During the Panic 1907, net cash flows to New York City and interest rates in New York City deviated substantially from the seasonal patterns of net cash flows and interest rates observed over the period 1890-1908. In Figure 1, the substantial net flow of cash out of New York City in October and November in 1907 plummeted sharply away from the seasonal average. Figure 2 shows how the call money interest rate in New York City spiked upward during several weeks in

October and November of 1907. In comparison to the seasonal averages, the precipitous decline in cash inflows to New York City banks – indicating a large and unusual cash outflow – accords with the sharp upward spike in the call money interest rate; both series clearly display aberrant yet mutually consistent deviations from the seasonal norms.

Banking crises can exacerbate an economic contraction. Banking (or financial) panic is defined here as the widespread withdrawal of deposits from intermediaries (a run on deposits) observed along with an increase in perceived risk across a broad array of assets. But it is unlike a bank run that focuses on specific institutions. In a bank run, a depositor may redeposit his or her funds in another bank that is perceived to be stable and solvent. In contrast, a run on deposits is a withdrawal of deposits from the banking system marked by a sudden shift in the components of the money supply. In a banking panic, the public holds a larger proportion of the money supply in cash instead of in the form of intermediated deposits. In a fractional reserve banking system such as the national banking system, runs on deposits force contractions in bank balance sheets, which may involve contracting the volume of loans outstanding. Reductions in credit outstanding can impose real costs on the economy by forcing the premature termination of profitable, positive net present value loans. During financial panics, banks would try to preserve the credit extension (e.g., loans) when the loans were viable but illiquid (that is, hard to sell without taking a large percentage capital loss). The New York Clearing House used several methods to combat the panic that were direct attempts to prevent a contraction in credit. Hoarding cash – removing cash from the banking system – forced a contraction in the money supply. However, the closure of banks and trust companies during the National Banking Era financial panics also led to a (temporary in some cases) contraction in the money supply because the deposits of failed banks are unavailable to depositors. There were fewer than 75 bank suspensions as a result of the Panic

of 1907, and there were 13 suspensions among New York City intermediaries (Wicker 2000: 4-5). In contrast, there were over 500 bank failures in 1893 and only three among New York City financial institutions.

The New York City nexus of the Panic of 1907 is notable particularly because nation-wide problems – like, for example, the imposition of partial restrictions on cash withdrawals from banks – arose from the initial depositor withdrawals from New York City trust companies; four of the thirteen institutions that failed in New York City were trust companies. The failure of just one trust company – the Knickerbocker Trust – reduced New York City deposits by over 2 percent (\$48.8 million in deposits over \$2116.5 million in the aggregate of national, state and trust company deposits in New York City, August 22, 1907). More importantly, the failure of Knickerbocker signaled that trust companies – intermediaries that accounted for nearly one third of deposits in New York City – were at risk in ways distinct from other New York City intermediaries – that they appeared isolated from the New York Clearing House and its liquidity resources. And yet, the other New York City banks were subject to ramifications of the trust companies' problems. The perceived increase in the risk of the New York City financial market led interior banks to withdraw deposits from their correspondent New York City national banks in unusually large amounts (see Sprague (1910: 264) and Figure 1).

The increase in perceived risk across assets would be reflected in sharp declines in stock market values, increases in interest rates and related declines in long-term bond values, and, as already noted, a sharp increase in holding cash relative to risk bearing liabilities (intermediated deposits).

The Proximate Cause of the 1907 Banking Crisis

Table 1 provides a summary time line for the events of the Panic of 1907. Trouble at the Heinze-Morse-Thomas banks was not a key factor in the panic, although the financial disarray of a failed corner attempt and related bank runs provided an essential catalyst for several subsequent events. Of the banks associated with these individuals, several were members of the New York Clearing House (Mercantile National, National Bank of North America, Mechanics and Traders, Fourteenth Street Bank, and New Amsterdam National). The Heinze-Morse-Thomas banks experienced bank runs, but there were no notable or widespread disruptions to banking activities in New York City during the days immediately following the corner failure. The lack of widespread panic-related activity was not surprising because of the relationship of these banks to the New York Clearing House. The aggregate of the Heinze-Morse-Thomas banking interests totaled \$71 million in deposits, of which \$56 million were deposits in the five clearing house member banks, and the New York Clearing House had existing policies aimed to rectify situations that threatened local banking conditions.

To prevent the bank runs from spreading, the New York Clearing House provided loans to those member institutions but also, as a condition of the aid, forced Heinze and Morse to resign from their banking interests and replaced the management of those banks. The New York Clearing House settled the financial situation by cooperation among its member institutions and shrewd decision-making by its executive committee. Those decisions required accurate and timely information about the financial condition of its struggling member institutions, and clearing house representatives made detailed examinations at those institutions prior to the executive decisions to aid the member banks.

Until the completion of the examinations, there was still uncertainty about the outcome for the Mercantile National. The New York Clearing House initially made equivocal public statements

regarding Mercantile National. For example, a clearing house representative expressed publicly that the clearing house would not pay off the depositors of the Mercantile National Bank, and that the aid that was offered by the New York Clearing House was temporary. The equivocation, noted in Bruner and Carr (2008: 61), is rarely acknowledged in academic treatments of the panic because on the following day, October 21, 1907, the New York Clearing House made a public statement announcing that the member banks had been examined in detail and that the New York Clearing House Association deemed them to be solvent.

Trusts and the Panic

The run on Knickerbocker Trust had reportedly begun as early as Friday, October 18, and the National Bank of Commerce had been extending credit to Knickerbocker Trust to cover those withdrawals. Wicker (2000: 90) describes how the vice president of the National Bank of Commerce along with the third vice president of Knickerbocker Trust asked the New York Clearing House for a loan to Knickerbocker. The loan request was denied and justified effectively because the New York Clearing House was preserving its resources for its members.²

The run on Knickerbocker Trust took a spectacular turn for the worse when on October 21, 1907 the National Bank of Commerce announced that it would no longer be the clearing agent for the Knickerbocker Trust. The debit balance of the National Bank of Commerce at the New York Clearing House on October 22, 1907 was \$7 million, and was largely assumed to reflect its dealings for Knickerbocker (*New York Tribune*, October 23, 1907: 1) because as clearing agent National Bank of Commerce held large correspondent balances for Knickerbocker. Legal

² Wicker (2000) considers the failure of Knickerbocker Trust a mistake that was the likely cause for the severity of the resulting panic. It is likely that, had the trust been a member of the New York Clearing House, the institution would have been assisted; that view is also expressed by Sprague (1910: 252). Alternatively, trust companies in New York City could have created an apparatus akin to the New York Clearing House, which could have provided support among trust companies subject to runs, but such arrangements typically take time.

considerations arising from the clearing agent relationship had financial ramifications for the National Bank of Commerce that provided a compelling incentive to limit its exposure to Knickerbocker's possible suspension. As the clearing agent for Knickerbocker, the National Bank of Commerce would have no priority as a claimant to Knickerbocker Trust assets if the trust suspended, and its assets went into receivership.³ As Knickerbocker's clearing agent, the National Bank of Commerce would have to wait in line for its payment as an ordinary depositor. Analogously, Mercantile National Bank was clearing for Hamilton Bank, which was on the verge of failure. In that case, the New York Clearing House ordered the Mercantile National Bank to stop clearing for Hamilton Bank, a bank related to E.R. Thomas, to avoid potential losses from the possible suspension of Hamilton Bank. The Hamilton Bank failed on October 24, 1907.

On October 22, 1907, the Knickerbocker Trust Company was forced to suspend, and after that point, many other New York City trust companies were struck with widespread withdrawal of deposits. The runs at the Trust Company of America and the Lincoln Trust have gained the highest profile, however data on trust company balance sheets in 1907 show that the contraction in deposits was widespread across institutions.

Widespread depositor withdrawals from the Knickerbocker Trust forced its closure, yet there is no unambiguous evidence to conclude that it was either insolvent or that it was involved in the Heinze-Morse-Thomas scheme. Reasonable explanations for the run emphasize that the President of Knickerbocker Trust, Charles T. Barney, was associated with Charles Morse, a member of the Heinze group. Barney was on the Board of Directors of the National Bank of

³ Hansen (2011) provides a comprehensive discussion of the change in banking law that motivated National Bank of Commerce to relinquish its clearing agent responsibilities for Knickerbocker Trust.

North America and the Mercantile National Bank (see Bruner and Carr 2008). His direct involvement in the Heinze-Morse stock corner activities has not been proven. The *New York Sun* (October 23, 1907: 2) reported that Knickerbocker Trust had extensive investments in real estate, although no further evidence uncovered so far can verify that claim.

Depositor withdrawals from Mercantile National Bank were unlike withdrawals from the Knickerbocker Trust Company because these intermediaries had clearly different relationships to the New York Clearing House. The New York Clearing House was effectively the lender of last resort in the New York City financial market. The Mercantile National Bank was a member of the New York Clearing House, and the Knickerbocker Trust Company was not a member. At the beginning of the crisis, the membership issue was front and center.

Newspaper reports were specific about how the New York Clearing House was aiding its members, and claimed that aid to members was for the sake of the general financial market. Clearing house representatives stated that the solution to the trust company runs would require the cooperation of trust companies to come up with their own solution to their problems.

Tallman and Moen (1990), Bruner and Carr (2008), Strouse (1999) and Wicker (2000) discuss the actions of J.P. Morgan and the New York Clearing House on October 24, 1907 to keep the stock market open and call loan funding available. Indirect evidence and secondary reports suggest that the national banks increased their loans on the call loan market to take over trust company loans and prevent the widespread liquidation of call loans. The national banks, however, were constrained by a reserve requirement on deposits that was higher than the reserve requirement for trusts. In addition, the large, correspondent banks in the New York Clearing House were also facing large-scale liquidation demands from their interior correspondents.

However, the formation of “money pools” to address specific incidents like the shortage of credit for call loans on the stock market was inefficient and clumsy. Wicker (2000) argues that issuing clearing house loan certificates during a crisis was standard practice and would have provided the liquidity necessary for such instances. Sprague (1910: 257) argues that the delay in the issuance of clearing house loan certificates was the most serious error by the New York Clearing House during the Panic of 1907.

The large, New York City national banks were likely most sensitive to the widespread liquidation of call loans by trust companies. These banks held the largest proportion of correspondent bank balances, and invested those funds in the short-term call loan market on the New York Stock Exchange.

Figure 3 displays the daily (maximum) call loan interest rate for October 1, 1907 through February 19, 1908. The first sharp increase in this rate follows the failure of Knickerbocker Trust Company on October 22, 1907. The prevailing call rate for the next week hovered around 50 percent, although the effective rate likely would have been higher, because often there were no trades taking place even at these high interest rates.

On October 26, 1907, the New York Clearing House membership agreed to restrict the convertibility of deposits into cash and to permit the issuance of clearing house loan certificates to improve the liquidity of the New York financial market.

Clearing house loan certificates were an expedient method to economize on legal tender and specie as a mechanism for payment finality. It was a liability that had limited transferability – that is, it was transferrable to other clearing house members only. The economics of clearing house loan certificates is somewhat complex; the certificates were requested by banks, issued by

the New York Clearing House, and effectively guaranteed by the entire membership of the clearing house association. Further, acceptance of clearing house loan certificates as final payment was a requirement of all members of the clearing house. Interest on the clearing house loan certificate was paid to holders of the clearing house loan certificate. In this case, the clearing house played the role of intermediary – the collateral was held by the clearing house and the clearing house administered the payment of interest. Borrowers could request additional issues of clearing house loan certificates and the New York Clearing House could require additional collateral or the replacement of collateral. Repayment was typically rapid because of the high interest rate (6 percent) associated with their issue.

Clearing house loan certificate issues allowed the New York Clearing House banks to deliver cash to their interior depositors as well as continue to issue loans during the panic despite being short of cash reserves. In this instance, the main borrowers were: 1) Heinze banks and other banks subject to runs, and 2) large, correspondent banks. Tallman and Moen (forthcoming) show that banker balances and clearing house loan certificate requests were highly correlated. Figure 4 displays the level of banker balances and the level of clearing house loan certificates among New York Clearing House banks. The larger a bank's role in the correspondent banking system, the larger the likely request for clearing house loan certificates from the New York Clearing House, and both of these characteristics were correlated with bank size.

The actions of national banks in the New York Clearing House have spurred investigation. Work by Donaldson (1993) examines the strategic incentives of New York Clearing House member banks to exploit their power over the stock of high-powered money during the panic. The transactions taken during the panic resulted in a reallocation of credit and deposits away from trust companies and toward national banks, clearly altering the trend within the financial

industry, which had previously encouraged the growth of less heavily regulated intermediaries like trusts.

Trusts, the Call Loan Market, and Clearing House Certificates

The run on trust companies in New York City provided a catalyst for transmitting the panic throughout the financial system. The interconnections between trust companies and banks – through banker balances, the call loan market, and through the railroad bond market – made the panic at trusts a financial crisis that still threatened commercial banks and the payments system. Even though trust companies were not part of the New York Clearing House, there was no “firewall” that allowed national banks to ignore the problems at trust companies. This characteristic of the Panic of 1907 highlighted the structural deficiencies of the “dual banking system” in the United States and the inability to insulate the payment system from capital and financial market shocks.

Table 2 displays the deposits of New York City trust companies, state banks and national banks on four separate call dates. The level of national bank deposits was clearly larger than deposit balances at trust companies alone, but was about the same as the combined deposit accounts of state banks and trusts. The level of deposits at New York City trust companies contracted by over 36 percent from August 22, 1907 to December 19, 1907, and totaled a contraction of over \$200 million in deposits. In contrast, the deposits of New York City national banks rose by nearly \$70 million, an increase of over 6 percent according to the call report data for December 3, 1907. State bank deposits also contracted by over 10 percent, but that accounted for a decline of less than \$40 million in deposits. The data highlight the substantial contraction in deposits that took place among trust companies during the Panic of 1907. Evidence from the final call date,

November 27, 1908, shows that national bank deposits grew rapidly relative to their level in August 1907 (nearly 50 percent), whereas the deposits of trust companies were only 5 percent above the level in August 1907. The trust companies never fully recovered from the contraction in deposits arising from the panic (see Moen and Tallman 1992). Hansen (2011) shows further that “uptown” trust companies – those that competed with national banks for retail depositors – lost a relatively larger share of the deposit market to national banks.

New York City trust companies sparked the Panic of 1907 as runs on their deposits forced liquidation of assets and depletion of cash (and cash-like) reserves. In that first line of cash reserves, trusts held about \$100 million in deposits in approved reserve depositories, mainly New York City national banks. From August 22 to December 19, 1907, trust companies reduced their deposits at banks by over \$30 million (Hagen 1936). In addition, trusts reportedly took actions in key markets that triggered financial distress in the call money market and in the stock and bond markets. Cleveland and Huertas (1985) suggest that trusts began calling in large numbers of loans on October 24, 1907. Further, it is notable that New York Clearing House banks engaged in restrictions of the convertibility of deposits into cash, and yet trust companies did not restrict their payment to depositors throughout the panic. That said, repayments to depositors were through certified checks expressly “payable through the clearing house” (Sprague 1910: 258).

The liquidation of assets at trust companies during the Panic of 1907 took various forms. Deposit accounts at national banks were the first cash line after vault cash, and the sale of high quality railroad bonds (which legally could be counted as reserves for trust companies in New York) likely took on an important role of raising cash. Evidence in Tallman and Moen (2011) and Rodgers and Wilson (2010) suggests that the liquidation of railroad bonds during the panic was unusual. Rodgers and Wilson (2010) argue that the unexplained gold inflows may have reflected

an unusual increase in the purchases of U.S. financial assets (specifically, railroad bonds) by foreign investors engaged in arbitrage because the railroad bonds sold both on the New York and London exchanges. The panic apparently artificially lowered prices in New York.

How 1907 Differed from 1873 and 1893

Although the panic withdrawals focused on trust companies, national banks in New York City still bore a significant burden of panic-related withdrawals by their correspondent banks. The New York Clearing House banks faced these demands as well in 1873 and 1893, but there were observable differences in the time-series behavior of the New York Clearing House aggregate bank balance sheets across these three panics. Figure 5 displays the loans, deposits and cash reserves of the New York Clearing House banks in 1873, 1893, and 1907. In the prior panics, loans, deposits and reserves fell during the related panic, whereas only in 1907 did the aggregate cash reserve balance among the New York Clearing House member banks fall while deposits remained fairly flat and loans increased.

In 1907, national banks in New York City were largely able to avoid widespread depositor withdrawals. Also, the New York Clearing House banks suspended convertibility of deposits into cash early in the crisis (the Knickerbocker Trust closed on October 22, 1907 and the New York Clearing House declared suspension of convertibility on October 26, 1907). Yet, it also indicates that there were transactions in which trust depositors moved to national banks, and trust loans were acquired by national banks. The analysis of national banking data alone will not indicate panic conditions in 1907 (see Smith 1984). Therefore it has been important to emphasize the inclusion of New York City trust company aggregates in any assessment of the financial ramifications of the 1907 banking crisis (see Moen and Tallman 1992).

The Central Banking Movement

The Panic of 1907 struck mainly the trust companies and demonstrated that the New York Clearing House faced risks that arose from beyond their membership. Essentially, given the state of financial intermediation, the New York Clearing House banks could not control as well as in the previous panics the risks that they faced. Moen and Tallman (2007) argue that the growth of trusts and the risks indicated by the Panic of 1907 influenced the next generation of New York City bankers to support a central bank.

Wicker (2005) credits Nelson Aldrich for the creation of a central bank in the United States, and suggests that the lack of financial crises in Europe influenced Aldrich to investigate a European model of a central bank as the basis for the central bank ideal for the United States. Broz (1999) suggests that New York bankers were interested in establishing a central banking institution in order to become competitive in the international markets. All the arguments listed above are feasible, and none of the arguments is exclusive of the others.

With the perspective of nearly 100 years of economic history, the Panic of 1907 provides no compelling evidence for the need to create a central bank in order to prevent financial panics. Friedman and Schwartz (1963) made what was a controversial suggestion that the Emergency Currency provisions of the Aldrich-Vreeland Act of 1908 (given the later amendment that such emergency currency would satisfy reserve requirements) was apparently successful in preventing a financial panic in 1914. Wicker (2000) proposes that the New York Clearing House and the large, correspondent national bank members had sufficient power to quell financial panics and that the observation of financial panics was an institutional failure. Further, given that runs on trust companies in New York City sparked the panic, requiring membership of trust companies

in the New York Clearing House may have been sufficient to remove trusts from among the potential sources of panics. Moen and Tallman (2000) suggest that trust company membership in the Chicago Clearing House kept those institutions relatively stable through the panic in contrast to New York City trust companies which were outside the New York Clearing House.

Measures of the Associated Real Economic Contraction

The real economic contraction associated with the financial panic in 1907 was among the deepest and sharpest contractions in the post-bellum US experience. Figure 6 illustrates the annual percent change in the industrial production index compiled by Joseph Davis (2004) over the period 1863 to 1915. The contraction associated with the 1907 crisis is measured as a nearly 17 percent decline from 1907 to 1908. The two year contraction in 1893 and 1894 of 9 percent and 7.5 percent, respectively, is roughly comparable as a panic-related output contraction, consistent with the widely held perception that the 1893 and 1907 financial crises were associated with the most severe real output contractions during the National Banking Era.

Balke and Gordon (1986) provide quarterly estimates of real GNP that extend back to 1875 covering a large subset of the National Banking Era, which allows a comparison of the time series profile of 1893 and 1907. Figure 7 compares the time series path of real GNP during the contraction relative to the relevant business cycle peak level of real GNP for three separate contractions during the period. In the figure, all the lines start at 1.0 and fall thereafter. For both 1893 and 1907, the measures contract by about 12 percent. The 1907 panic is associated with an economic downturn that is slightly steeper, but effectively both lines display a contraction of about the same magnitude. For comparison, the contraction of 1896 – associated with the fear that the U.S. would abandon the gold standard – displays a contraction of about 7 percent, a

substantial but more moderate contraction, and a contraction not associated with a banking crisis. These facts are consistent with observations made in Reinhart and Rogoff (2008) and empirical evidence produced by Bordo and Haubrich (2010) and Jalil (2010) that real economic contractions associated with banking and financial crises are more severe than otherwise.

Recent work by Jorda, Schularick, and Taylor (2011) indicates that 1907 was one of four pre-World War II “worldwide” financial crises, along with 1890, 1921, and 1930-31. Thus, the benefit of hindsight (along with more data and more powerful econometric tools) has increased the perceived severity of the financial and real economic contraction in 1907. Also, it is well-recognized that the panic arose from problems in the United States’ financial system and economy (see Goodhart 1969 and Rich 1988).

Conclusion

The Panic of 1907 was an important financial and economic event in the evolution of the financial structure of the United States and as a signal of its growing worldwide economic influence. The economic contraction associated with the panic was severe and sharp, and comparable to the severe recession of 1893. The repercussions of the panic contributed momentum toward a successful political effort to establish a central banking institution (the Federal Reserve System) as well as attempts to reduce variation in the degrees of regulation across financial intermediaries.

Two distinct features of the 1907 crisis – its New York-centric character and the focus on an intermediary (the trust companies) that was not central to the payments system – have analogues in the recent 2007-2009 financial crisis. The investment banks, being a part of the so-called “shadow banking system,” were effectively outside the regulatory oversight of the Federal

Reserve System, and they did not have regular access to the Federal Reserve discount window. On a cursory level, the isolation of the investment banks from the lender of last resort appears comparable to the situation of trust companies in 1907. Future research and analysis can determine the relevance of the comparison for modern regulatory decisions. Regardless of the 100 years of separation, the shared characteristics in the two crises signify that historical episodes remain important sources for understanding modern financial crises.

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Table 1: Time line of Major Events during Panic of 1907

Wednesday, Oct 16	Failure of the Heinze attempt to corner stock in United Copper sparks concerns. Bank runs begin on banks associated with Heinze forces.
Friday, Oct 18	New York Clearing House agrees to support Mercantile National Bank, the bank that Heinze controlled directly, upon resignation of its Board (including Heinze). Run on Knickerbocker Trust begins, apparently the result of rumored association of Charles Barney, President of Knickerbocker Trust, with Charles Morse.
Saturday, Oct 19	Morse (Heinze's associate) banks are struck with runs, and requests aid from the New York Clearing House Association. Newspapers infer an equivocal response on the part of the New York Clearing House.
Sunday, Oct 20	New York Clearing House agrees to support Heinze-Morse banks but requires that Heinze and Morse relinquish all banking interests in New York City.
Monday, Oct 21	Run on Knickerbocker Trust accelerates. Request by National Bank of Commerce for aid from the New York Clearing House on behalf of Knickerbocker Trust was denied. J.P. Morgan denies aid to Knickerbocker Trust as well.
Tuesday, Oct 22	Run on Knickerbocker Trust forces its closure with cash withdrawals of \$8 million in one day. Run spreads to Trust Company of America, Lincoln Trust and other trust companies in New York City.
Wednesday, Oct 23	J.P. Morgan agrees to aid Trust Company of America and coordinates the provision of cash from New York Clearing House member banks to trust companies.
Thursday, Oct 24	U.S. Treasury deposits \$25 million in New York Clearing House member national banks. J.P. Morgan organizes provision of cash (money pools) to the New York Stock Exchange to maintain the provision of call money loans on the stock market floor.
Saturday, Oct 26	New York Clearing House Committee meets and agrees to establish a Clearing House Loan Committee to issue certificates. Also the Committee agreed to impose restrictions payment of cash.
Monday, Nov 4	Trust companies provide \$25 million to support other trust companies that endured large-scale depositor withdrawals.

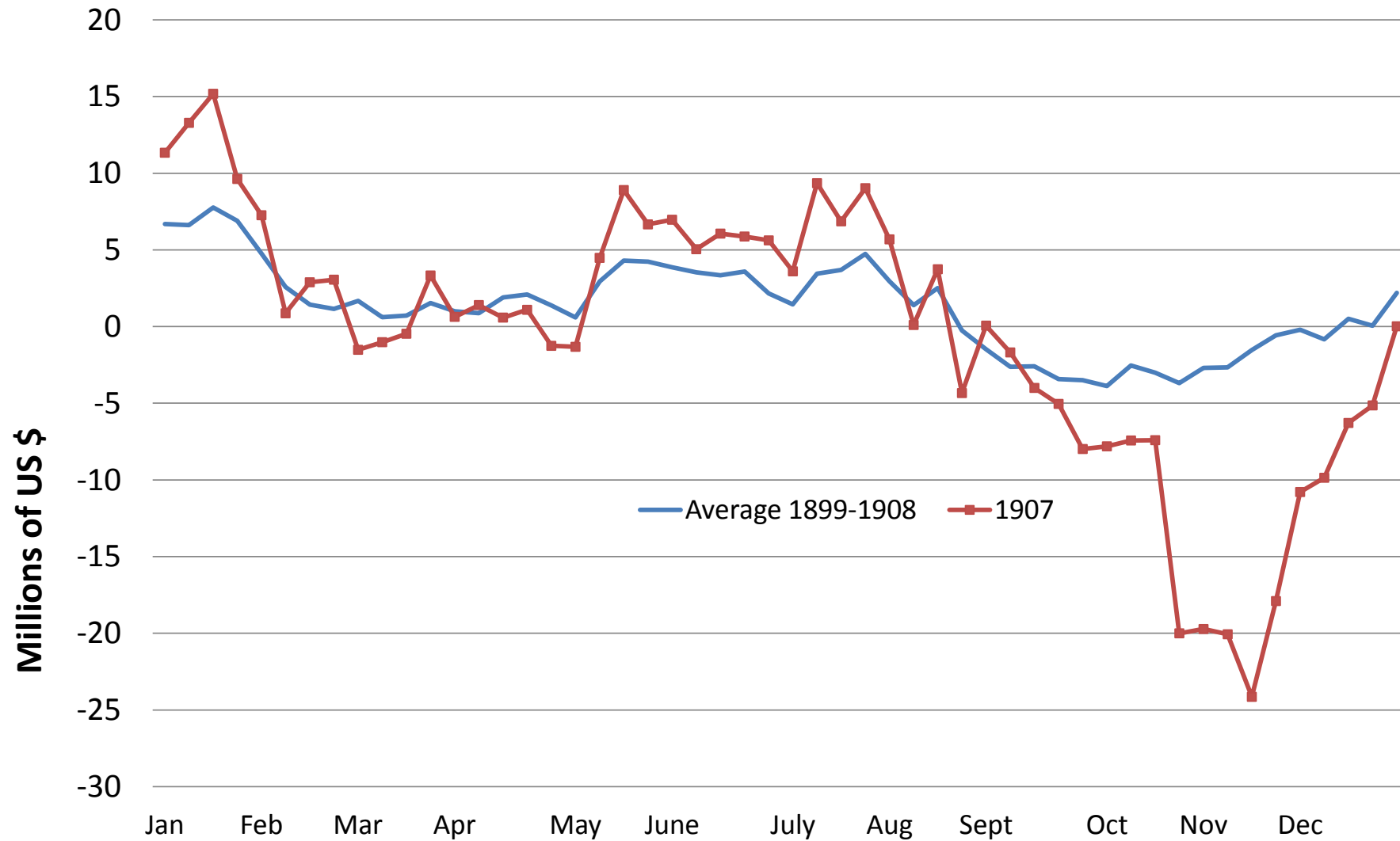
Table 2: Deposits in New York City Intermediaries

Call Report Date	National	State	Trusts	Sum of State and Trusts	Aggregate Deposits
<i>Thursday, August 22, 1907</i>	1051.74	371.99	692.74	1064.74	2116.47
<i>Tuesday, December 03, 1907</i>	1120.62 6.55 *				
<i>Thursday, December 19, 1907</i>		333.46 -10.36 *	437.73 -36.81 *	771.19 -27.57 *	1891.81 -10.61 *
<i>Friday, November 27, 1908</i>	1546.37 47.03 *	437.25 17.54 *	724.03 4.52 *	1161.28 9.07 *	2707.65 27.93 *

* denotes percentage change from August 22, 1907 level

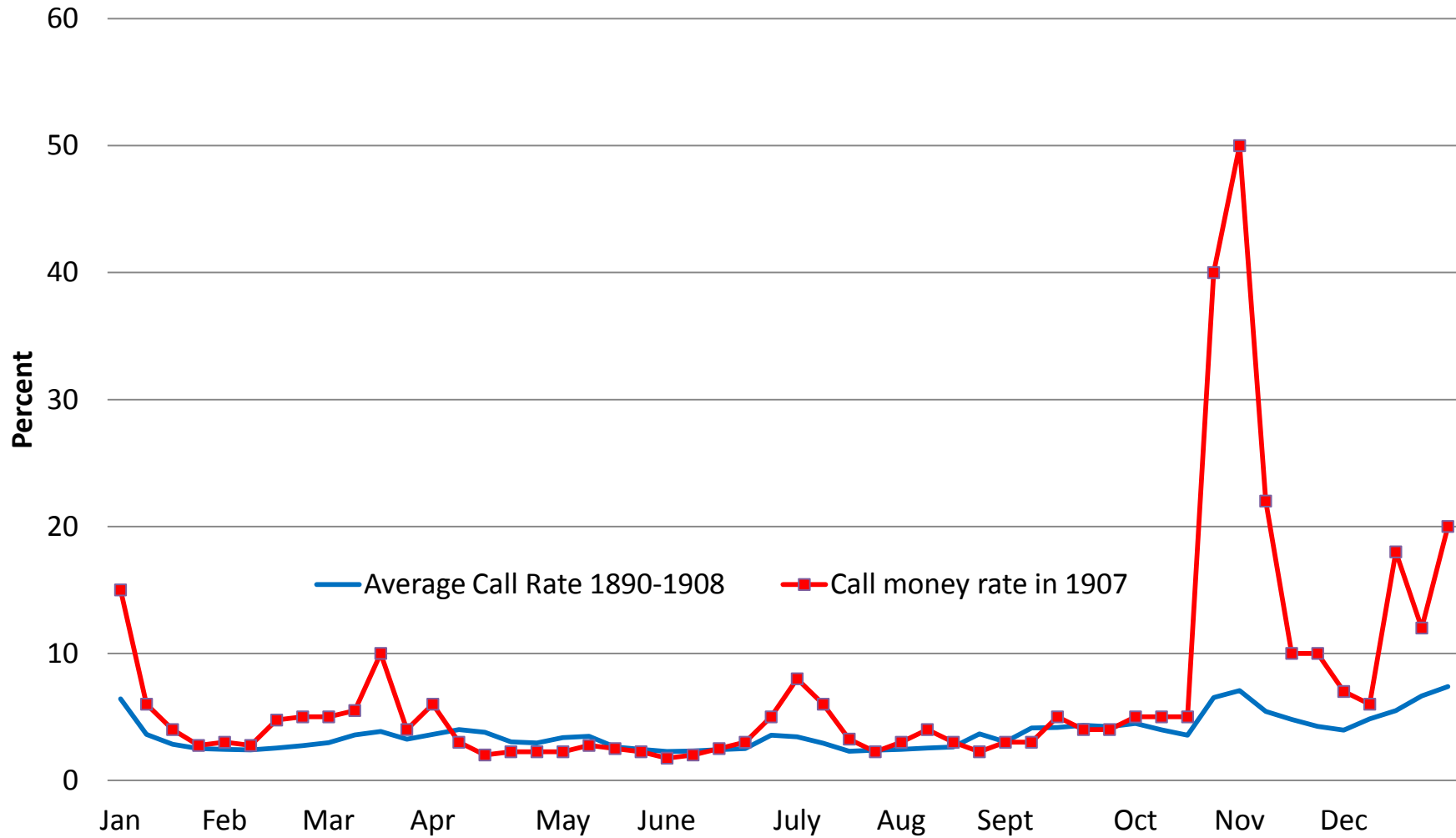
Source: Annual Reports of the Comptroller of the Currency, Reports of the Superintendent of Banks of New York States, and Hagen (1932).

Chart 1: Seasonal Net Cash Flows to New York City Banks



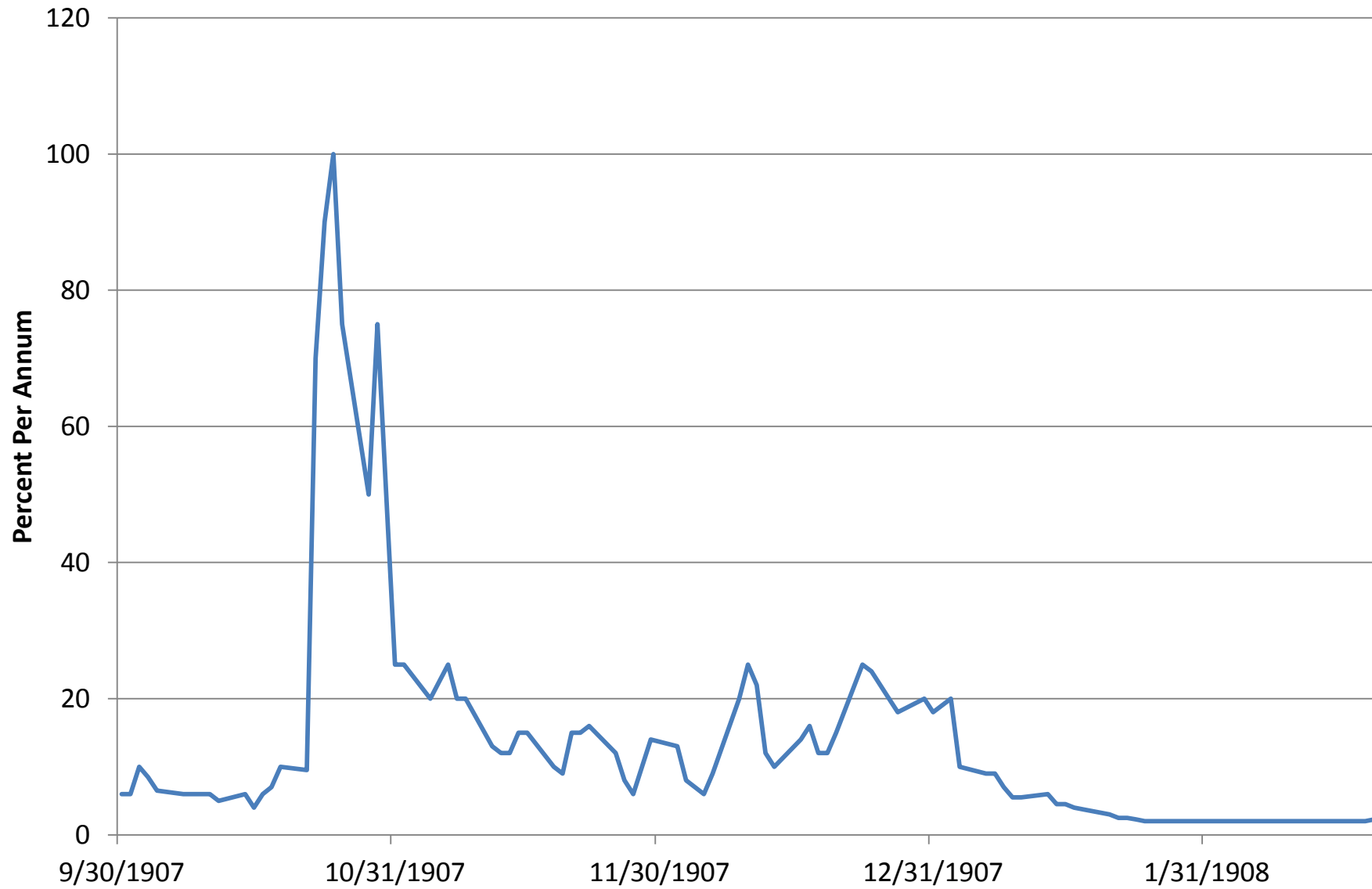
Source: Kemmerer (1910)

**Chart 2: Seasonal Average Call Money Interest Rate
versus the Path in 1907**



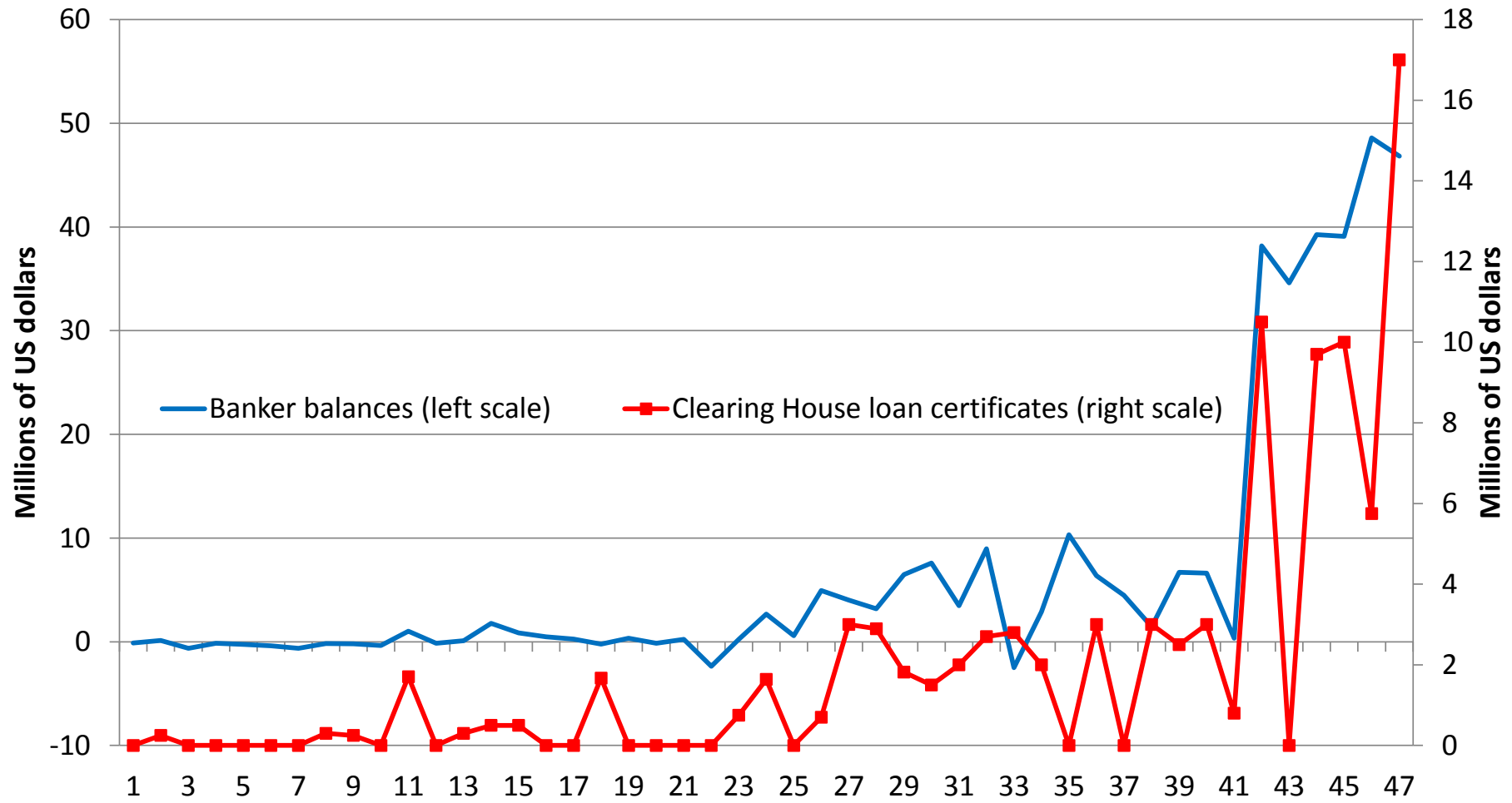
Source: Kemmerer (1910).

Chart 3: Daily Maximum Call Loan Interest Rate



Sources: New York Times, Commercial and Financial Chronicle (Various issues)

**Chart 4: Banker's Balances versus Clearing House Loan Certificates:
New York Clearing House Member Banks**

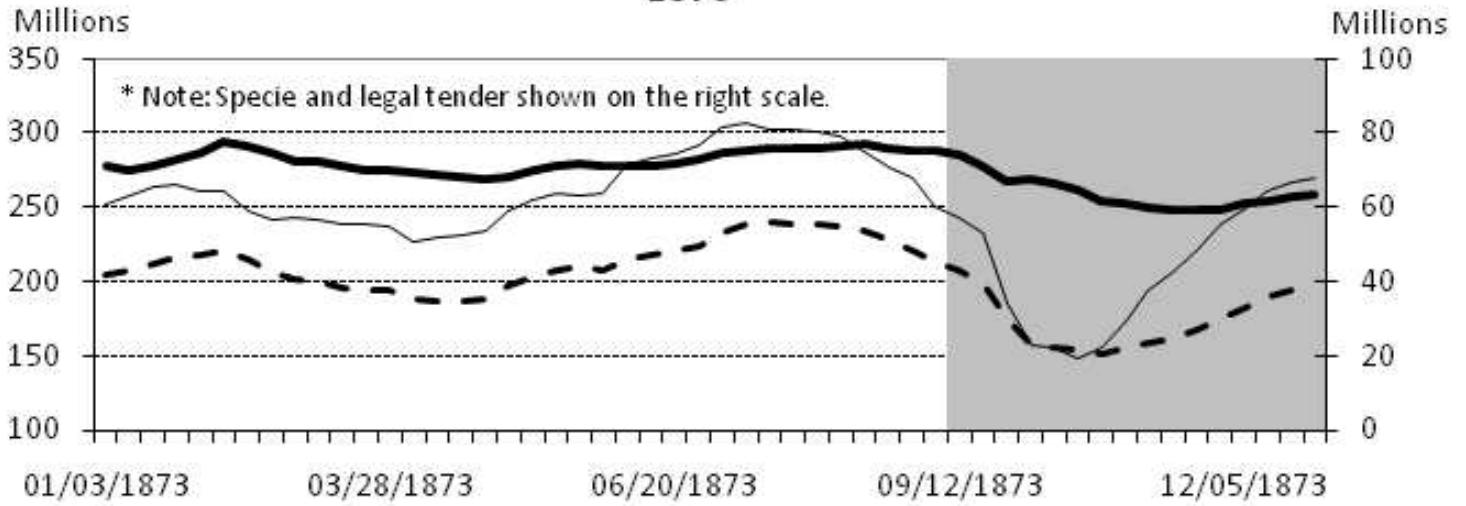


Banks ordered by size, smallest to largest

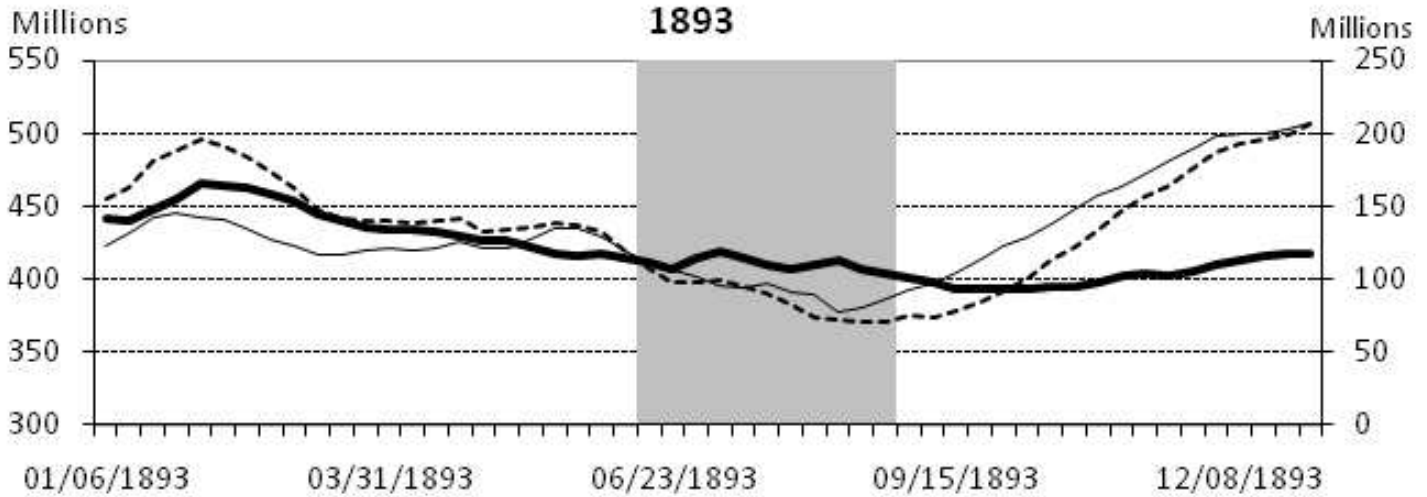
Source: Annual Report of the Comptroller of the Currency 1908; Minutes of the Clearing House Loan Committee of the New York Clearing House, from 10/26/1907 to 2/19/1908

Chart 5: Loans, Deposits and Cash Reserves of New York Clearing House Banks

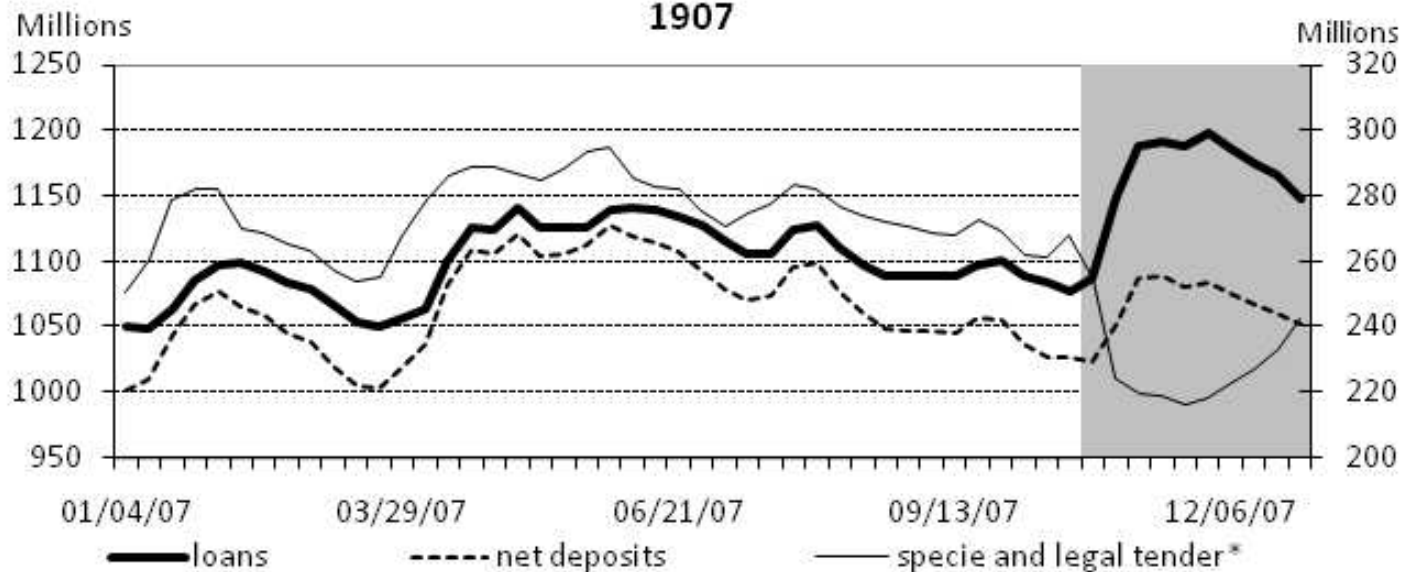
1873



1893

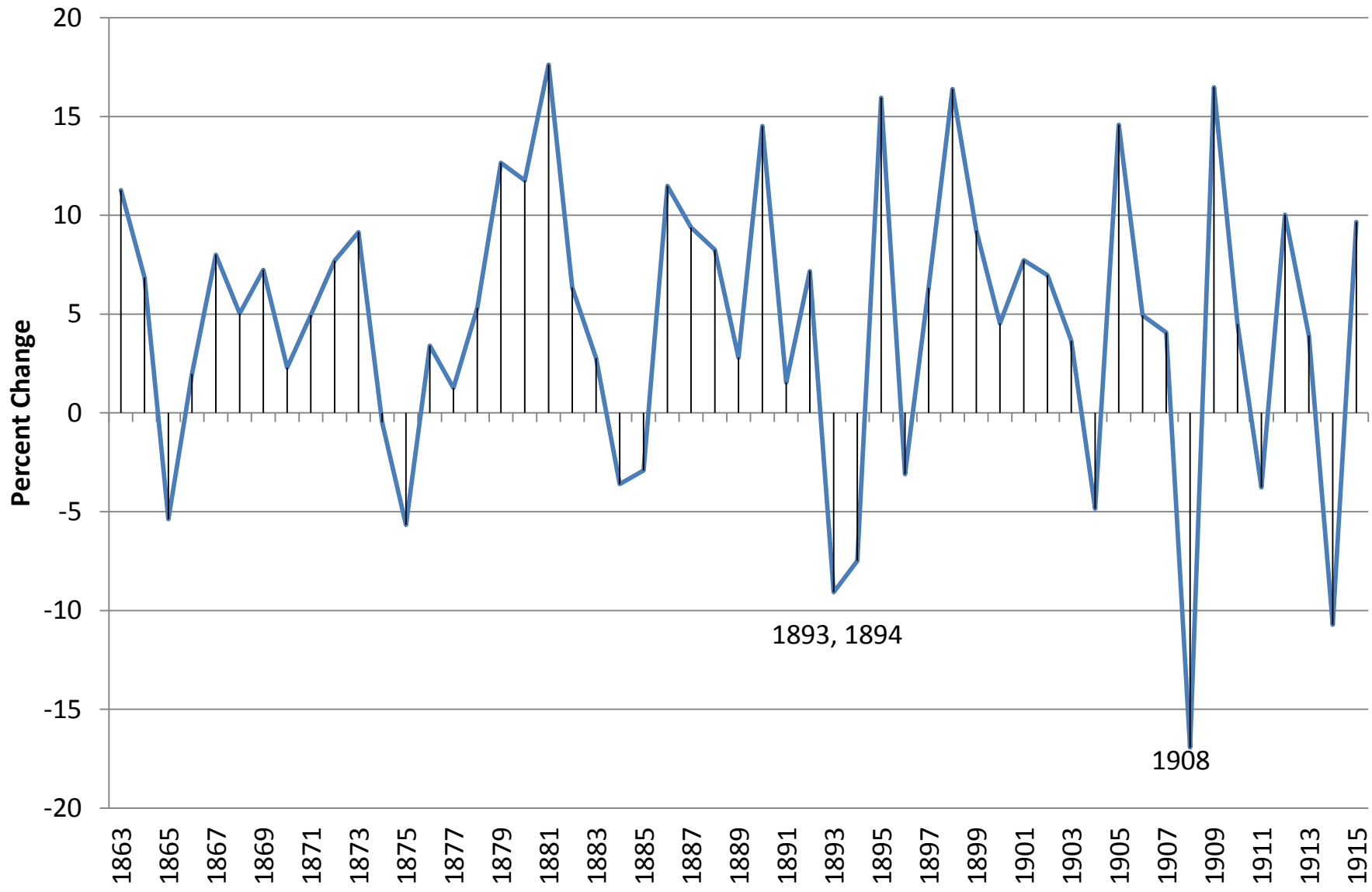


1907



Source: Kemmerer (1910)

Chart 6: Annual Growth Rate of Industrial Production, 1863-1915



Source: Davis (2004) *Quarterly Journal of Economics*

Chart 7: Real GNP During Contractions Taken Relative to Prior Peak

