

Why Didn't the United States Establish a
Central Bank Until After the Panic of 1907?

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Monetary historians link the establishment of the Federal Reserve System in 1913 to the financial turbulence of the Panic of 1907. But why 1907 and not earlier panics? The 1907 panic marked a significant change from previous National Banking Era panics, which either had struck national banks within the New York Clearing House or had their origins outside of New York. The Panic of 1907 started in New York City, and it focused on trust companies. In the aftermath, New York Clearing House member bankers recognized threats to the financial system arising from institutions outside of the clearing house but participating in the same financial markets. The institutions, most notably trust companies, lent funds in the call loan money market, in which New York City national banks held over 30 percent of their loan portfolio. Turbulence from the call loan market was at the core of the Panic of 1907. Inability to curb financial risks arising from institutions outside the payment system (outside the clearing house) convinced the influential New York bankers that banking reform was then necessary.

Introduction

The establishment of the Federal Reserve System in 1913 is conventionally viewed as the reaction to the turmoil surrounding the Panic of 1907. Before 1907, bankers and politicians regularly discussed banking reforms, but few proposals included establishing a central bank (or system of centralized reserves -- terms we shall use interchangeably). The banking reform debates were certainly spurred on by the severe financial crises, yet these earlier panics, some associated with more severe output contraction than in the 1907 crisis, did not lead to any tangible reforms. Banking reform gained traction only after the Panic of 1907 because 1907 was unlike any previous panic. In contrast to earlier panics, the Panic of 1907 erupted in the New York City money market among intermediaries on the periphery of the payments system, and dealt with the New York Clearing House from outside of it. The panic threatened the very viability of the New York Clearing House system of banking, a system that had been able to deal effectively with the earlier panics.

Until 1907, New York national banks faced financial crises that arose from within Clearing House member banks, and the New York Clearing House took actions that appeared sufficient to reign in the crises, at least in terms of protecting the integrity of the payments system and the liquidity and solvency of the Clearing House member banks. It is even possible that the Clearing House member banks profited from crises.¹ Under such circumstances, one would expect little enthusiasm for the institution of a central bank in the US coming from the influential New York banking forces.

¹ Donaldson, "Costly Liquidation" and "Financing Banking Crises."

The Panic of 1907, however, was centered on the New York City trust companies, a relatively less regulated, state-chartered class of intermediaries. In the earlier crises trusts did not have a major presence in financial markets. The rapid growth of the trusts after 1896, however, left them in a position to rival the New York national banks in several financial markets, most notably the call loan market. In panics before 1907, the New York Clearing House addressed runs on member institutions by providing adequate reserves to solvent member banks and closing down insolvent ones. For member banks, the Clearing House had timely information on the condition of their balance sheets and so could make quick evaluations of the probable solvency of member banks. Virtually all large banks were Clearing House members, unlike the trust companies in 1907.

Trust companies participated significantly in the same financial markets as the national banks, like the call loan money market, even though they were structurally distinct depository intermediaries playing a small role in the payments system. The connection through the call loan market to the national banks is what made the trusts ominous and risky intermediaries in the eyes of the Clearing House banks. In our view, the risk arose simply from their being outside the traditional means of controlling panics, not because of risky or questionable investments on their balance sheets. The trust companies in New York City also held minimal cash reserves to support their deposits, and held a substantial portion of their reserves as deposits in national banks. While such a low reserve ratio and the trust deposits in national banks imposed some risks to the payments system that arose from outside the national banking structure, the connection through the call loan market was the primary source of risk to the national banks.² Had

² For a different opinion on the forces behind establishing a U.S. central bank, see Livingston, *Origins of the Federal Reserve*.

the trusts not been significant participants in the call loan market, the Clearing House banks probably would have had much less interest in aiding the trusts.

There are many extensive studies on the evolution of the US financial system and the establishment of a central bank³. Each takes a different view of the key factors that eventually led to the general acceptance by the US legislature and electorate of the creation of a central bank. These studies describe in detail the political economy surrounding specific legislative proposals, and we do not cover that material here. Instead, we emphasize how the Panic of 1907 was different from earlier panics. We then indicate how the changes in the financial landscape, mainly increasing participation in the call loan market by trusts and other outside lenders, posed much greater risks for the financial system than the risks observed in earlier panics. We focus on the economic motives of the New York Clearing House member banks – the influential private and commercial bankers of New York -- and how the financial repercussions of the Panic of 1907 influenced New York bankers toward favoring the creation of a central bank.⁴

E.N. White's study of American banking regulation is of particular relevance to our argument; he views the Panic of 1907 as the galvanizing force in forming a US central bank.⁵ His research focuses on the dual banking system, and his analysis at the national level shows that national banks had been the dominant intermediary in the early part of the National Banking Era. The rapid growth of the state-chartered trusts and banks increased the proportion of intermediated assets outside the clearing house system, and thereby weakened the dominance of national banks and the influence of the

³ White, *The Regulation and Reform*; Livingston, *Origins of the Federal Reserve System*; McCulley, *Banks and Politics*; and Broz, *The International Origins* are a few examples. See also Wicker, *The Great Debate on Banking Reform*.

⁴ We do not analyze the subsequent political maneuverings that led specifically to the Federal Reserve System.

⁵ White, *The Regulation and Reform*.

clearinghouses over aggregate financial assets.⁶ White notes that the effectiveness of the clearinghouses in combating panics declined as the proportion of assets outside the clearinghouse banks increased.⁷ He argues that the circumscribed coverage of the Clearing House was an observable flaw when, during the 1907 banking panic, the trusts were not able to get quick liquidity assistance from the New York Clearing House.⁸ Because some state banks in New York were Clearing House members and no New York trusts were members in 1907, our further distinction between state banks and trusts appears warranted.⁹

How was 1907 Different? Structure.

The financial system during the 1907 panic contained restrictive components that were present in earlier panics and so these conditions in themselves are unlikely as the reasons for establishing a central bank. A pyramid structure concentrated bank reserves in central reserve city banks in cities like Chicago and most notably New York City. Country national banks could place deposits in central reserve city national banks and claim them as a portion of their reserves requirement. Branch banking was virtually nonexistent, and correspondent banking was the dominant form of facilitating inter-regional payments. The de facto techniques used in 1907 to address liquidity crises had

⁶ White analyzes an aggregation of state banks and trusts as intermediaries outside the National Banking system and the Clearing Houses. We concentrate on trusts separately, noting that in earlier research, Moen and Tallman, “The Bank Panic of 1907: the Role” and “Clearinghouse Membership” show that trusts suffered more extreme deposit losses than state banks in New York during the 1907 panic. We infer that state banks did not present similar risks to the safety and soundness of the banking system, that is, systemic risk that trust companies represented. There were state banks among the members of the New York Clearing House but no trust companies were members.

⁷ White, *The Regulation and Reform*, p. 80.

⁸ *Ibid.*, pp. 81-82.

⁹ Moen and Tallman, “Clearinghouse Membership”. White’s conclusions remain relevant to our narrower focus on the trusts and their “outsider” status in New York City, and we view our analysis in part as a refinement of his argument.

also been used in earlier panics. These techniques were the restrictions on convertibility of deposits into cash (which was illegal) and Clearing House loan certificates. The latter, IOUs that passed between Clearing House member banks in lieu of cash to settle clearing balances, were a mechanism to free up cash to pay depositors during panics. There still remained the problem with the currency supply – the inelasticity of the currency, that is, the inability for the stock of high-powered money to increase sharply at short notice.

The financial structure was evolving throughout the National Banking Era, but there was a particularly important innovation among New York City intermediaries that contributed to the Panic of 1907. Table 1 shows the total assets under control of all national banks, state banks, and trust companies in the U.S. for the years in which a severe financial panic took place. The table lists state bank and trust aggregate total assets as a percentage of national bank total assets. From 1873 onward, the proportion of total assets controlled by state chartered intermediaries (both state banks and trust companies) was increasing relative to the proportion of total assets controlled by national banks. The proportion for state banks rose from less than 10 percent in 1873 to nearly 50 percent in 1907. Table 1A presents more detailed statistics for mid-year, 1907.

Table 2 lists the balance sheet items for all trust companies in the U.S. for various years between 1874 and 1907 and shows the substantial growth of trust company assets, along with deposits and loans. The growth of trust company assets nationwide was most notable between 1899 and 1904, when trust company deposit totals nearly doubled and total assets at trust companies more than doubled. By 1907, the total assets of trust companies were more than 35 percent of the total assets of national banks.

The national statistics for trust companies and their assets indicate their rapid asset growth, but are less important to explain the Panic of 1907. Changes in the

financial structure in New York City and the relative size of trust companies in New York City were centrally important. The characteristics of National Banking Era panics remained similar from 1873 through 1893 in that the largest institutions in New York City were Clearing House members. The growth in the proportion of assets outside the Clearing House influence reduced the effectiveness of New York Clearing House mechanisms to settle financial panics. New York City financial market participants – especially the New York Clearing House -- took notice of trust company asset growth before 1907. There was bitter competition between New York City national banks and New York City trust companies to attract deposits from out of town banks, and the Clearing House made several attempts to compel trusts to increase their cash reserves.¹⁰ The New York Clearing House in 1903 requested that the New York City trust companies increase their cash reserve levels if the trusts wanted to continue using Clearing House members as clearing agents. Trust companies, relative to their deposit amounts, had a low volume of check clearings. The operational efficiencies of a Clearing House association, namely the clearing of inter-bank payments, were therefore unimportant for trust companies relative to the increased cost of holding more non-interest bearing reserves. Hence, trusts left the New York Clearing House, that is, the trusts no longer cleared checks through a Clearing House member.¹¹

By 1907, the increased size of the trusts left a significant proportion of financial assets held by intermediaries beyond the examining authority of the Clearing House.

Maurice Muhleman presented key balance sheet items for national banks, state banks,

¹⁰ Redlich, *The Molding*; Moen and Tallman, “The Bank Panic of 1907: The Role”; New York Clearinghouse Association, *Minutes*.

¹¹ Up to that time, trusts had been clearing checks through a bank that was a member of the New York Clearing House. However, that member institution would then be held liable for any shortfalls caused by the trust company for which the member was clearing agent. Leaving the New York Clearing House meant that trusts would no longer employ members in this capacity.

and trust companies in New York City for 1907 as well as aggregate data for members of the New York Clearing House under the label “Associated Banks.”¹² We reproduce this table as Table 3. The totals for deposits and loans at the Clearing House members were slightly more than half the New York City aggregate totals. However, the Clearing House member banks held over 80 percent of the available cash reserves. The trust companies had a cash reserve to deposit ratio of merely 5.8 percent, which was far below those of even state banks in New York City. At such low cash reserve levels, trusts were obviously at risk of a bank run if ever a substantial proportion of trust depositors liquidated their accounts simultaneously. At the same time, the trust companies were extremely profitable as a result of holding fewer cash balances. The Clearing House attempts to coerce trust companies to hold more cash reserves failed. The New York Clearing House held no legal obligation to aid the trusts because trusts companies were not members of the Clearing House. In this setting, unlike in earlier panics the Clearing House was an unreliable candidate to provide liquidity in 1907 to the troubled institutions, because the troubled institutions were trust companies.

Trust companies held a small level of cash reserves relative to deposits and supplemented the cash with reserves held in the form of deposits at New York City national banks. Trust company call loans would also provide a potential source of cash in normal business conditions. In the panic, all these sources of cash were exploited with varying degrees of success by the trust companies suffering large-scale withdrawal of deposits. As trusts liquidated their deposits in national banks, the panic conditions spread across intermediary type. O.M.W. Sprague describes in some detail the complicated intermediary interactions that transmitted much of the financial stress during the panic.

¹² Muehleman, *Monetary and Banking*, p. 117

The large national banks and the New York Clearing House members made the simultaneous payment of cash to trust companies and the extension of loans to brokers who had previously been borrowing from trust companies.¹³ It was the salutary actions of the New York Clearing House member banks that supported the eventual quelling of the panic, although both clearinghouse loan certificate issues as well as restrictions on the convertibility of deposits into currency had to be imposed on the economy.

The rise of trusts companies in the New York money market was obvious. But other intermediaries had also increased their participation in New York financial markets and the call loan market. Thomas Woodlock, writing in 1908, expressed the concern apparent at the time about the influence of direct lending by out of town banks on the call loan market. Although they used New York banks as agents in placing the loans, such loans did not appear in the weekly bank statement of the New York banks. He describes the potential danger as follows:

This practice first attracted attention as a dangerous element in the situation in the summer of 1902. At that time a quiet investigation developed the fact that something over one hundred million dollars was being lent in this way by out-of-town institutions, subject to the call of those institutions. It was a time of considerable stringency in the money market, and New York bankers felt that the existence of a mass of credit of these dimensions not subject to control has within it the potency of disaster.... *In December of last year (1906) it was estimated that over four hundred million dollars of money were being lent in New York City for account of country institutions, over which New York banks had no control whatever.* In view of what has happened in the last three months (of 1907) we may be truly grateful that the storm did not break as it might have broken twelve months ago, instead of coming, as it did, after many months of very severe liquidation, during which these direct loans by country banks were enormously reduced (Woodlock 1908, pp. 36-37).

Like the trust companies, the interior banks were outside of the influence of the Clearing House.

¹³ Sprague, *History of Crises*, pp. 269-70.

How was 1907 Different? Statistics.

There were measurable characteristics of aggregate bank balance sheets that distinguish the Panic of 1907 from earlier panics, and they highlight the extent to which the New York Clearing House banks were forced to increase loans when in the past they would reduce loans outstanding. The behavior of balance sheet items (loans and deposits) was different in 1907. For example, Sprague notes that loans and deposits at New York national banks contracted somewhat in August during the Panic of 1893.¹⁴ Loans and deposits increased at the New York national banks as depositors fled the trusts during the Panic of 1907.¹⁵ We examine the loans, net deposits and reserves of national banks from the weekly statements of Clearing House banks in New York City during the most severe National Banking Panics of 1873, 1893 and 1907.¹⁶ In Graph 1 we present the three series for national banks in New York City for each of the three panic years. Loans are defined as total loans, deposits are defined as net deposits, and reserves are defined as specie and legal tender, and each series is the aggregate of Clearing House member banks in New York City.¹⁷ What we find in those figures is that the deposits, loans and reserves all contract during 1873 and 1893 when the panic strikes. The pattern observed in the series are consistent with the idea that depositors “panic” by withdrawing their funds from the intermediation system in general, lowering bank cash reserves, and occasionally forcing liquidation of demandable loans when reserve levels are perceived as low

In Graph 1, the series for deposits, reserves, and loans for New York Clearing House banks in 1907 display behavior that is not consistent with the same panic story.

¹⁴ Ibid., p. 190.

¹⁵ Moen and Tallman, “The Bank Panic of 1907: the Role.”

¹⁶ All weekly figures in the text and Graphs 1-5 are from Andrew, *Statistics for the United States*.

¹⁷ Andrew, *Statistics for the United States*.

Clearing House bank loans and deposits increased while reserves declined. It is possible that this result is due to an idiosyncrasy of the 1907 panic. Graph 2 presents the ratio of deposits to reserves among New York City Clearing House banks over the three major panics. In Graph 2, the deposits to reserves ratio did not fall in 1907 in week 43 when the panic of 1907 first struck, whereas it was typical for the ratio to fall in earlier panics.

Graphs 3, 4, and 5 present the behavior of loans, deposits, and reserves, respectively, in New York versus all other reserve city clearinghouse banks in 1907. We aggregate these series into a measure of reserves and deposits at reserve city banks outside New York, and compare those aggregates to those of New York banks in 1907.¹⁸ The “all reserve city banks other than NYC banks” aggregate shows deposits and reserves contract during the 1907 panic in ways consistent with the standard panic characterization described above. In contrast, the deposits and reserves for New York City banks display notably different patterns from the standard panic pattern. The correlation coefficients between deposits and reserves at New York banks in 1873, 1893, and 1907 are 0.89, 0.97, and -0.72 ; the distinct difference noted for 1907 supports the patterns observed in Graph 1.

The decline in reserves at New York Clearing House banks in 1907 is not unique – reserves declined in other National Banking Era panics. The unique aspect of 1907 is the increase in deposits and loans in New York City banks at the same time that reserves are contracting. Hence, these atypical movements were an indication that there was a different form of disintermediation taking place in New York City. The panic did not deplete the assets of the banks in 1907. Rather, it depleted banks’ reserve holdings. The

¹⁸ We use aggregate balance sheet measures from Chicago and St. Louis (the other central reserve cities) and compare those numbers to the aggregate measures from New York City Clearing House banks.

increase in deposits, however, suggests that the panic-related withdrawals from trusts were re-deposited in banks so that the increase in bank deposits reflects partly a transfer of trust deposits into bank deposits, a “flight to quality” response.

Sprague clearly notes what was happening:

Nowhere throughout the country was there any considerable increase in loans except in New York, where loans increased by \$63,000,000—from \$712,000,000 to \$775,000,000. In every period of financial strain hitherto the New York banks had been able to contract loans somewhat. Explanation of the different result in 1907 is simple. The trust-company situation compelled them to liquidate loans wherever possible, and the outside banks also followed the same course. These two groups of lenders more than exhausted the possibilities of contraction in New York, and a part of their loans had to be taken over by the clearing-house banks to prevent a general disaster. We have already seen that call loans were particularly favored by trust companies and the outside banks. Even in 1873 the clearing-house banks were able to reduce loans of that kind relatively little, and it might naturally be expected that still less contraction would have been feasible in 1907.¹⁹

The increase in loans among New York Clearinghouse banks reflects the purchase of trust loans by banks. Hence, the disintermediation affected the trusts and their customers, but not the payments system through the banks. The runs on trusts forced them to find additional sources of reserves because the trusts held a low proportion of reserves to deposits. Trusts drained their reserve deposits at national banks (as they were able), borrowed reserves from the Clearing House member banks or acquired them by selling assets. In each case, the drain on trust deposits reduced the level of reserves among New York City banks and contributed to the increased level of loans held by banks.

¹⁹ Sprague, *History of Crises*, p. 300-01.

Fear of Contagion and the Call Loan Market

Immediately before the trust panic, Clearing House interventions in mid-October 1907 alleviated runs on Clearing House banks associated with the Heinze copper corner, preventing a large-scale panic among national banks and other member banks. In contrast, the subsequent runs on trust companies affected an intermediary type that was tangential to the payments system, and from a systemic perspective, should not have threatened a major disruption in the payments system.

The New York Clearing House Committee, meeting at 3pm, on October 21, 1907, offered the following response in reply to the request for aid from the Knickerbocker Trust: “The Knickerbocker Trust, having requested a loan from the Clearing House, it was decided that the advances of money for the protection of depositors is limited to its own members.”²⁰ The subsequent events in the Panic of 1907 then followed a rapid sequence:

- 1) October 22, 1907 -- the Knickerbocker Trust suspends and closes its doors.
- 2) October 23, 1907 – there are widespread withdrawals of deposits from trust companies and the New York Clearing House agrees to aid Trust Company of America.
- 3) October 24, 1907 – there is a shortage of cash money on the New York Stock Exchange floor, and the rate on overnight loans reaches 125 percent.
- 4) October 26, 1907 – the New York Clearing House agrees to form a Clearing House loan committee to oversee the collection of collateral for issuance of clearing house loan certificates.

The catalyst that caused the New York national banks to aid the trusts was the cash shortage in New York City. The shortage resulted from a drain of cash from national

²⁰ New York Clearing House, *Minutes*, October 21, 1907, 3pm meeting summary.

banks, a shortage of cash for call money loans on the stock exchange floor, and the activity of trust companies in the call loan market. New York City national banks participated heavily in the call money market, providing demandable loans (collateralized by stock equity) to the stock market to support the trading on the floor of the market. These short-term demandable loans were a convenient mechanism for earning interest on reserve city holdings of banker's balances and could be settled quickly on demand during normal times. Nearly 30 percent of the loans of New York banks were tied up in these demandable loans.²¹

Trust companies also participated in the call loan market, although it is likely that they held somewhat fewer call loans than the national banks. The liquidity provided by these loans was less important to the trust companies because their volume of clearings was so much lower than the national banks. Still, the influence of trust companies in the call loan market and the relevant impact upon the stock market from untimely liquidation of call loan collateral was what was of concern to the national banks.²² Compounding the influence of the trust companies in the call loan market was the fact that out-of-town banks and even foreign banks increasingly were directly lending in the call loan market.

During the panic of 1907, the call money rate peaked at a striking 125 percent. Even at that rate, there were reportedly no funds forthcoming, indicating a significant lack of liquidity provision and/or perceptions of risk to stock market investments. The stock market index declined about 25 percent over the three months of the panic.²³ Even given standard discounts for the collateral asset values, liquidation of the loans would add to bank losses if it forced liquidation of the collateral at depressed market prices. Banks

²¹ Moen and Tallman, "The Panic of 1907: the Role."

²² Moen and Tallman, "The Call Loan Market."

²³ Macaulay, *The Movement of Interest Rates*.

were at risk of further losses if trust companies liquidated any more stock market assets (call loans, call loan collateral, or owned stock) under financial duress, thereby pushing call loan collateral at national banks further down. Under these conditions, liquidations would lower stock prices and exacerbate the liquidity problems, sending call money rates again into triple digits. Given the degree of the panic, there was a possibility of a downward spiral of prices and further liquidation of call loans that would leave the financial system in a shambles.

The stock market and the call loan market linked the Clearing House banks and trusts in a precarious way that the payment system did not. Trust company deposits at the larger national bank members of the Clearing House were perceived as reserves for the trusts, providing another link between the institutions. With such linkages the large national banks and New York Clearing House members would ultimately want to aid the trusts because the actions of the trusts had repercussions for the entire financial system. There was a legitimate basis for the concern that a financial crisis among intermediaries outside the payment system (the trusts) could ultimately affect the liquidity and solvency of those banks within the payments system. Rather than fearing depositor contagion as the panic withdrawals spread from trusts to national banks from the depositor's side, national banks had the rational perspective that continued liquidation of trusts stock market assets would threaten further declines in the level of stock market prices. Any further liquidation of trust accounts with New York City banks would threaten depletion of national bank cash reserves. The New York City banking interests wanted to stave off large-scale withdrawals from trust companies to protect the call loan assets and solvency of national banks. The end result of such a sequence of events, in a worst case, could be the closure of the stock exchange, but even in a more benign scenario, it would at least

erode the quality of call loans on the national bank's balance sheets and threaten confidence in bank solvency. It is important to recall that the trust company panic withdrawals occurred the day before the observed illiquidity on the stock market floor, and this illiquidity took place even after the New York Clearing House agreed to aid trust companies.

New York Bankers and the Panic of 1907

Changing Attitudes in the Old Guard.

A change in attitudes within in the New York banking community helps explain why the events of 1907 were so influential in spurring the creation of the Fed. In the wake of the panic, the New York banking forces perceived the trusts as much riskier institutions, “the major sources of instability at the nation's financial center”.²⁴ And the risk posed by the trust companies to the payments system had not gone unnoticed by several rising bankers even before the panic.

Given the low volume of checks from New York City trusts, the perceived risk by bankers of a trust-based financial panic may have seemed low, and the risk to the payment system may have seemed small. New York City bankers like Paul Warburg, Frank Vanderlip, Benjamin Strong, and Henry Davison, however, viewed the risk ex post, as substantial, and they helped design banking reform proposals in the United States. More established bankers like James Stillman and JP Morgan had been relatively uninterested in the idea of a central bank before 1907. A fundamental change in attitudes on the part of these older bankers was essential for the movement to establish a central

²⁴ McCulley, *Banks and Politics*, p. 201.

bank to gather momentum from the efforts of the younger bankers. It is well known that Paul Warburg had suggested the idea of a US central bank as early as 1903.

In a revealing passage in his memoirs, Warburg describes how James Stillman, President of National City Bank of New York, chided him in 1903 for his paper on central banking reform. Stillman went as far as to suggest that the US banking system would be the model for the European banking systems. In 1907, Stillman, presumably worried about the future ability of New York national banks to deal with financial crises, requested a copy of a paper Warburg had written several years earlier outlining a central banking plan for the US. The following extended quote from Warburg's memoirs outlines these changing attitudes clearly:

This memorandum was shown to Mr. Jacob Schiff, then the senior partner of the banking firm Kuhn, Loeb & Company, of which I had lately become a member. Mr. Schiff read the paper with interest and told me, what afterwards he often repeated, that, while theoretically he agreed with most of the thoughts expressed, he believed that I was misjudging the psychology of the American people, who would never, he said, accept any system approaching a central bank. But since he always appreciated earnest efforts on the part of his juniors and never missed an opportunity for encouraging them, he suggested that I let him show the paper confidentially to two friends. One of these was James A. Stillman, president of the National City Bank of New York. It was significant, however, of the atmosphere in which we were living that Mr. Schiff warned me to be careful not to have the memorandum go any further, lest, having just arrived from Europe, I might impair my standing in the banking community by creating the impression that I was urging a system which, in the final analysis, would have to be built around a central bank organization. I gladly accepted Mr. Schiff's suggestion, and a few days afterwards I found Mr. Stillman standing over my desk. He looked at me silently, as was his wont, through his half-closed, heavy dark eyes.

"How is the great international financier?" he asked with friendly sarcasm. He then added, "Warburg, don't you think the City Bank has done pretty well?"

I replied, "Yes Mr. Stillman, extraordinarily well."

He then said, "Why not leave things alone?"

It was not without hesitation that I replied, "Your bank is so big and so powerful, Mr. Stillman, that when the next panic comes, you will wish your responsibilities were smaller."

At this, Mr. Stillman told me that I was entirely wrong, that I had the mistaken notion that Europe's banking methods were the most advanced, while,

as a matter of fact, American methods represented an improvement upon, and an evolution of, the European system, America having already discarded its central bank. He had no doubt that progress would have to be sought, not by copying European methods, but by elaborating our own.

Four years later, in the midst of the panic (of 1907), I found Mr. Stillman once more standing over my desk; and when I looked up, he asked, "Warburg, where is your paper?"

I said to him, "Too late now, Mr. Stillman. What has to be done cannot be done in a hurry. If reform is to be secured, it will take years of educational work to bring it about."

This incident is related for the sole purpose of showing the status of banking and business opinion in those far-off days. What Mr. Stillman had said was typical of the general attitude then prevailing (Warburg 1930, pp. 18-19)."

Clearly, the Panic of 1907 altered at least one influential banker's opinion on the future organization of US banking. The influence of Stillman should not be underestimated, as one biographer recalls how Stillman had to convince a stubborn J.P. Morgan to aid the Trust Company of America after the Knickerbocker trust was forced to suspend.²⁵ Morgan apparently believed that he should not have to risk his own assets to save an imprudent intermediary.

Frank Vanderlip clearly outlines in retrospect the division between the old and new generations in the New York banking establishment:

Henry Davison and Paul Warburg ... and Ben Strong and I were among the few men who, at that time, were fully persuaded that the remedy for the weakness in our banking system was the creation of some sort of a central institution to hold the reserves of the country. Only when such a common reservoir existed, we were convinced, would it be possible to use the reserves effectively.

.....

However, even when the madness was over, and when their lesson should have been well-learned, many of the oldest, the most distinguished, and respected bankers of the country were still opposed to banking law reform.²⁶

²⁵ Burr, *The Portrait*, pp. 233-34.

²⁶ Vanderlip, *From Farm Boy*, pp. 180-81.

Awareness of the Risk Posed by Trust Companies

Many of the bankers who were involved in the movement for a central bank made specific references to the trusts and the problem of allocating reserves to solvent institutions in the absence of a centralized reserve mechanism. Centralized monitoring was not explicitly mentioned, but descriptions of the financing of the Panic, especially those that focus on the effort of Benjamin Strong to assess the financial condition of the Knickerbocker Trust, implicitly describe the lack of monitoring information on trusts at the Clearing House. Thus, the two related issues – how to monitor and how to allocate emergency reserves – centered on the relationship between the Clearing House and the intermediaries outside the regulatory structure of the National Banking System.

James Stillman, in February of 1907, displayed prescience with regard to the oncoming panic. In a letter responding to Frank Vanderlip's complaint that National City was holding too high a reserve ratio, Stillman wrote:

I have felt for sometime that the next panic and low interest rates following would straighten out a good many things that have of latter years crept into banking. What impresses me as most important is to go into next Autumn (usually a time of financial stringency) ridiculously strong and liquid, and now is the time to begin and shape for it. ... (I)f by able and judicious management we have money to help our dealers when trust companies have suspended, we will have all the business we want for many years.²⁷

The quote reinforces the idea that Stillman did not care much for the trusts and was anticipating them to suffer in the next banking panic. What appeared to be excessive cash reserves at National City Bank was simply preparation for the next financial crisis, one in which Stillman thought the national banks would prevail. Having "all the business we want for many years" is consistent with McAndrews and Roberd's

²⁷ Vanderlip Papers. Stillman to Vanderlip, February 12, 1907, and Cleveland and Huertas, *The Bank*, p. 52.

characterization of panics as a means to discipline competitors free-riding on the national bank's higher reserve position (McAndrews and Roberds 1995).

The model in McAndrew and Roberds suggests that the existence of bank panics had provided national banks a mechanism to hinder the growth of fringe intermediaries that were less involved in the payments system. By the time the panic of 1907 took place, trusts in New York City were in the aggregate too large to have their growth checked through panics, at least without risking severe damage to the payments system.

The Course of Legislation before and after the Panic.

The New York banking interests influenced the design of the central bank legislation that was initially introduced in Congress. Vanderlip described the infamous meeting of New York bankers and Senator Nelson Aldrich at JP Morgan's estate on Jekyll Island, Georgia in November of 1910.²⁸ The resulting Aldrich plan formed the basis of the National Reserve Association presented by the National Monetary Commission. That plan failed to gain support in Congress and Senator Carter Glass led the coalition that presented the successful central bank legislation. Once the legislative process had been initiated the content of the Glass-Owen legislation spread beyond the control of the New York banking interests, but as Warburg and Elmus Wicker demonstrate, the Federal Reserve Act was remarkably similar to the original Aldrich plan.²⁹

But even with lender of last resort powers clearly spelled out, the Fed's behavior during the Depression was strikingly parallel to that of the New York Clearing House

²⁸ Vanderlip, *From Farm Boy*.

²⁹ Warburg, *The Federal Reserve System*; Wicker, *The Great Debate*.

Banks during the Panic of 1907. The absence of universal membership in the Federal Reserve System helps to explain the controversial performance of the Fed during the bank crises early in the Great Depression. The Fed acted like the private Clearing Houses it had been modeled after, and it tried to protect member banks while letting thousands of non-member state institutions fail in the early 1930s.³⁰

Conclusion

Monetary historians typically view the recurrence of financial panics during the National Banking Era as placing the entire payments system at risk, a risk comparable to the current concept of “systemic risk.” Before the Panic of 1907, panics had been focused within the Clearing House member institutions, and the outside institutions were not so large as to threaten the payments system. The large national banks and their Clearing Houses in the central reserve cities had been able to insulate the payment system from the crises. Using their pooled assets and “common law” powers, the national banks and the Clearing Houses quelled the panics by putting their own assets at risk through some established Clearing House mechanisms. Established mechanisms for liquidity provision had been in place since the panic of 1873, and Clearing Houses used their information on member institutions to decide on whether to aid or liquidate member institutions suffering withdrawals.

The Panic of 1907 was an entirely new panic experience for New York Clearing House members. New York City trust companies were the focus of that panic, and the trusts were not members of the New York Clearing House. Liquidity provision to the

³⁰ Friedman and Schwartz, *A Monetary History*, pp. 358-59.

trusts took place grudgingly because the trust companies were not Clearing House members and the national banks in New York City had incomplete information on the financial condition of trust companies and also little influence over the behavior of trust companies. Despite their isolation, the risk of withdrawal of demand deposits from trusts posed systemic risks similar to those from runs on banks whose operations were more closely associated with the payments system. The risk arose because trust companies held relatively few cash reserves relative to their deposit exposure and also held sizable deposit balances in Clearing House member banks. Depleting trust company accounts in national banks could still weaken the liquidity position of national banks.

The focus on trust companies during the Panic of 1907 revealed new risks to the financial system arising from outside the traditional payments arena, that is, outside of the national banks and the Clearing House, for the trust companies had become an important source of funds outside of the Clearing House for capital markets. In the Bank Panic of 1907, Clearing House member bankers became convinced that the existing Clearing House system, with its circumscribed membership, could no longer deal effectively with the increased number of institutions outside the Clearing House system.

The trust panic in 1907 was a more serious threat to the Clearing House system than would have been predicted in the McAndrew and Roberds model because in 1907 the entire payments system appeared to be at risk of a temporary, yet potentially full-scale, shutdown. Following the Panic of 1907, the large New York City Clearing House banks, even if they had made excess returns from earlier panics, likely recognized the heightened risks to the Clearing House system arising from the New York City trusts. Thus, the New York City bankers changed their perspective on banking reform; allowing

competition to be checked through periodic panics had become less effective with the existing Clearing House.

J.P. Morgan orchestrated a resolution to the Banking Panic of 1907, but the younger generation of New York bankers recognized a key difference in the 1907 panic relative to earlier National Banking Era panics. The younger bankers also realized that because the trusts rivaled the national banks in size, actions of influential individuals like Morgan could no longer be viewed as reliable methods to resolve future panics.

Previous post-bellum attempts to establish a central bank in the US lacked the support of New York banking interests, a component key for any successful central banking legislation. The fact that the trusts were beyond the influence of Clearing House monitoring contributed to the change in New York banker opinion that moved them toward finally supporting the creation of a central bank. This change in perspective explains the active role played by New York bankers in the formulation of the initial Aldrich Plan, designed during the famous clandestine meeting on Jekyll Island in November 1910. Rather than being purely the outcome of a progressive banking movement concerned with general economic welfare, in our story the creation of the Federal Reserve System relied on actions of a special interest group, the New York Clearing House banks, to design what they would consider an acceptable variation of the existing institutional structure

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Table 1: Number and Total Assets of U.S. Intermediaries in Panic Years

Year of Panic	Number of intermediaries			Total Assets of Intermediaries (In millions of dollars)		
	National Banks	State Banks	Trust Companies	National Banks	State Bank	Trust Companies
1873	1968	277		1851	178	
1884	2625	817	35*	2283	521	240*
1890	3484	2101	149	3484	871	503
1893	3807	3579	228	3213	1130	726
1907	6422	9967	794	8472	4119	3071

Total Assets As Percentage of National Bank Assets

Year	Trust Company	State Bank
1873		9.62%
1884	10.51%*	22.8%
1890	14.44%	25.0%
1893	19.07%	35.17%
1907	36.25%	48.62%

Sources: Number of National Banks and State Banks, Total Assets of National Bank and State Banks, E. N. White, *The Reform and Regulation*, Table 1.1, page 13. Trust Company, number and total assets, *ibid*, Table 1.6, page 39. The series were those compiled by the U.S. Office of the Comptroller of the Currency. Trust Company numbers denoted with (*) are from Muhleman, *Monetary and Banking Systems*, p. 81.

Table 1A: Banking Statistics for the United States, as of mid-year 1907
(millions of dollars)

Number -> Type ->	6429 Nationals	9967 State	794 Trust Companies	1415 Savings	1141 Private	19,746 All
<i>Liabilities.</i>						
Capital	884	472	276	34	25	1,691
Surplus and profits	720	281	398	235	11	1,645
Deposits	4323	3069	2062	3495	151	13,100
Due to banks	1685	211	168	8	3	2,075
Circulation	548	---	---	---	---	548
Other	317	86	167	11	5	586
Totals	8477	4119	3071	3783	195	19,645
<i>Resources.</i>						
Loans	4663	2532	1603	1833	133	10,764
Securities	1431	489	785	1646	10	4,361
Due from banks	1130	548	262	163	31	2,134
Cash	723	254	102	27	9	1,115
Checks, etc.	306	97	5	3	1	412
Other	224	199	314	111	11	859
Totals	8477	4119	3071	3783	195	19,645

Source: Muhleman, *Monetary and Banking Systems*, p. 85.

Table 2: Trust Companies' Statistics (millions of dollars)

Years	Number	Capital	Surplus	Deposits	Loans	Bonds, etc.	Cash, etc.	Total Assets
1874	35	22	7	85	66	39	9	123
1879	32	21	9	76	61	35	3	112
1884	35	24	20	189	158	51	5	240
1889	120	59	39	300	301	77	25	441
1894	224	97	75	471	374	142	34	705
1899	260	104	106	835	599	266	25	1071
1904	585	238	330	1600	1148	667	64	2380
1907	794	276	398	2062	1602	785	107	3071

Note: In 1879 reports from one state are missing.

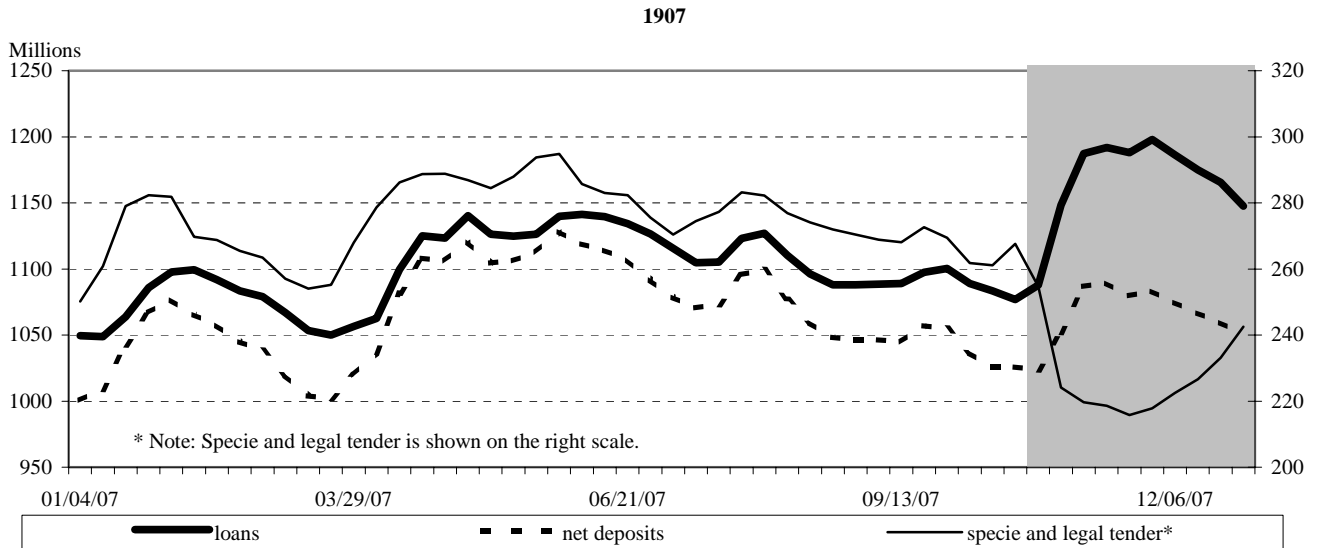
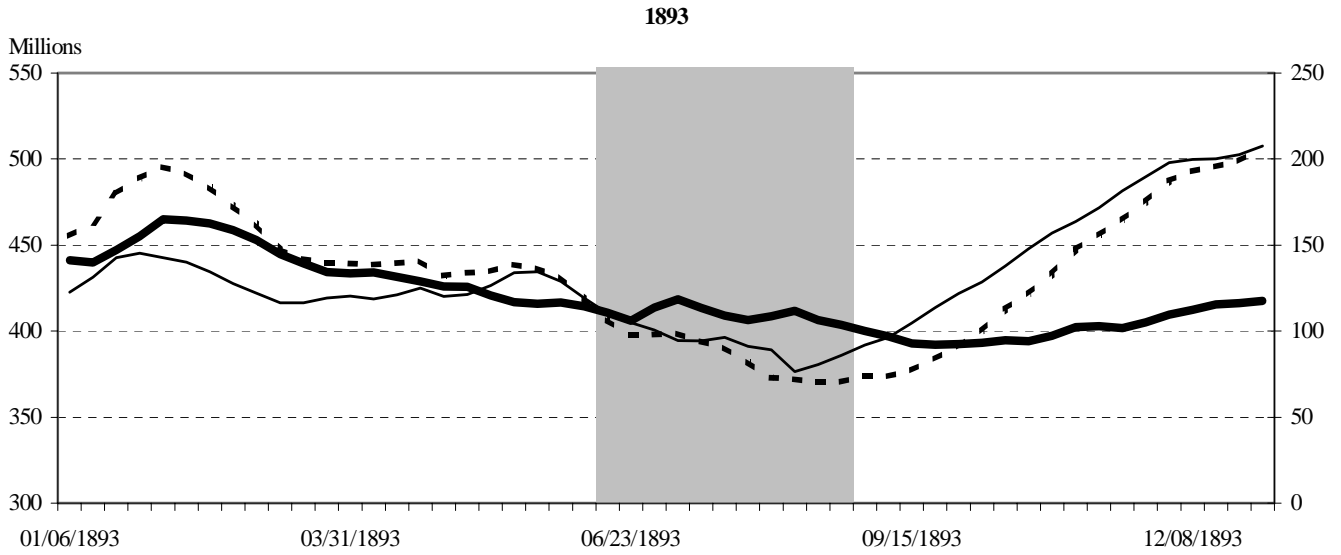
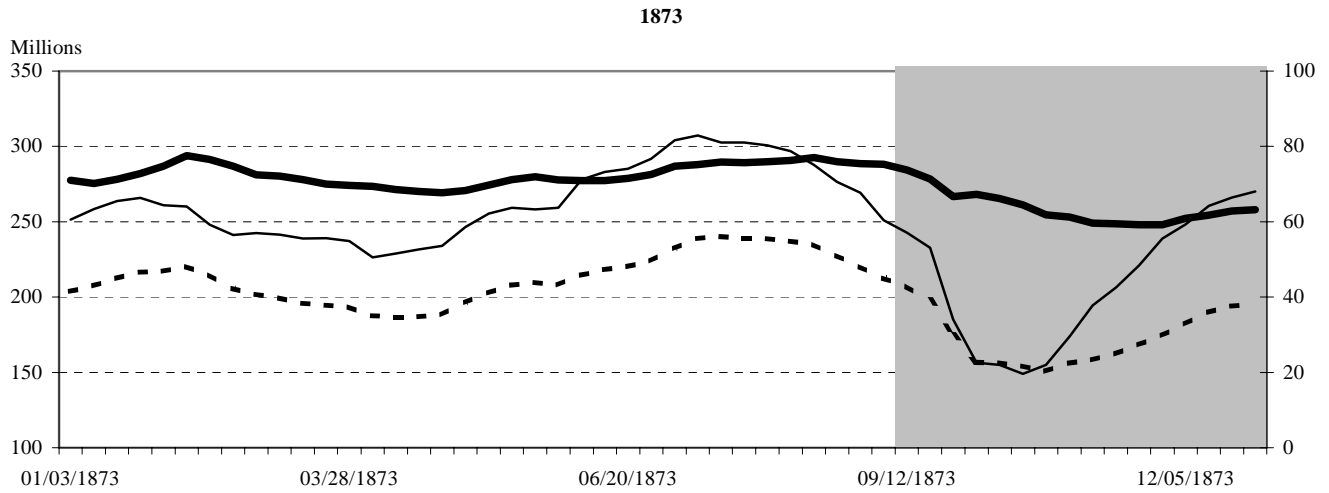
Source: Muhleman, *Monetary and Banking Systems*, p. 81.

Table 3: New York City Intermediaries: As of August 1907

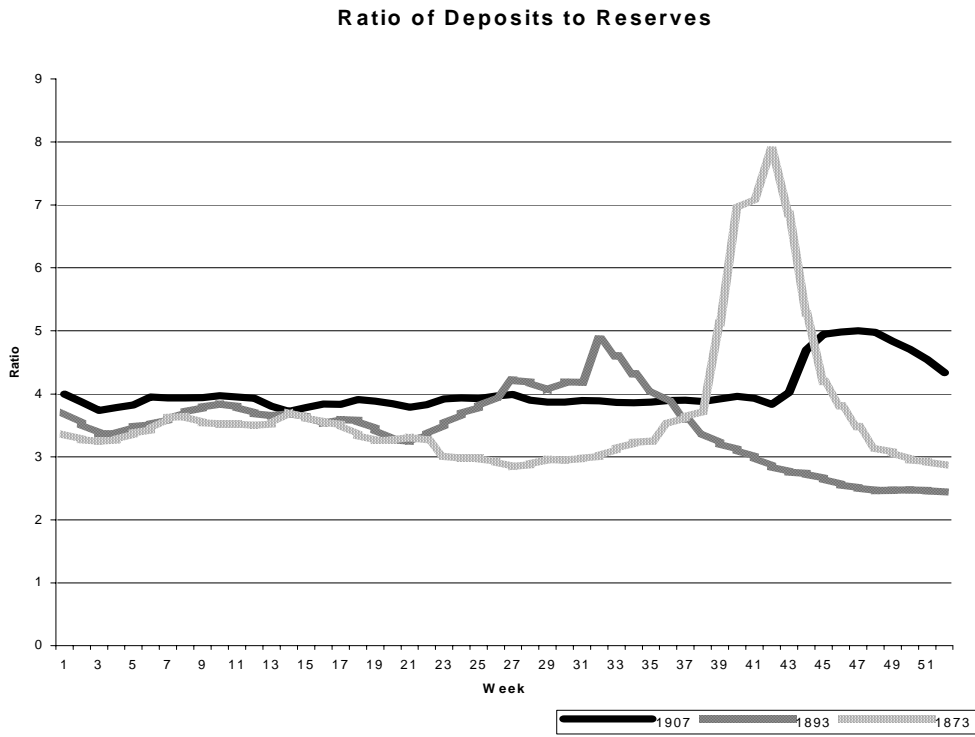
	National Banks	State Banks	Trust Companies	All	Associated Banks
Capital and surplus	245	58	206	509	290
Deposits, net	850	275	826	1952	1048
Loans and securities	932	268	912	2112	1088
Cash	219	57	48	324	272
Percent, cash to deposits	25.7	20.8	5.8	16.6	25.9

Source: Muhleman, *Monetary and Banking Systems*, p. 117.

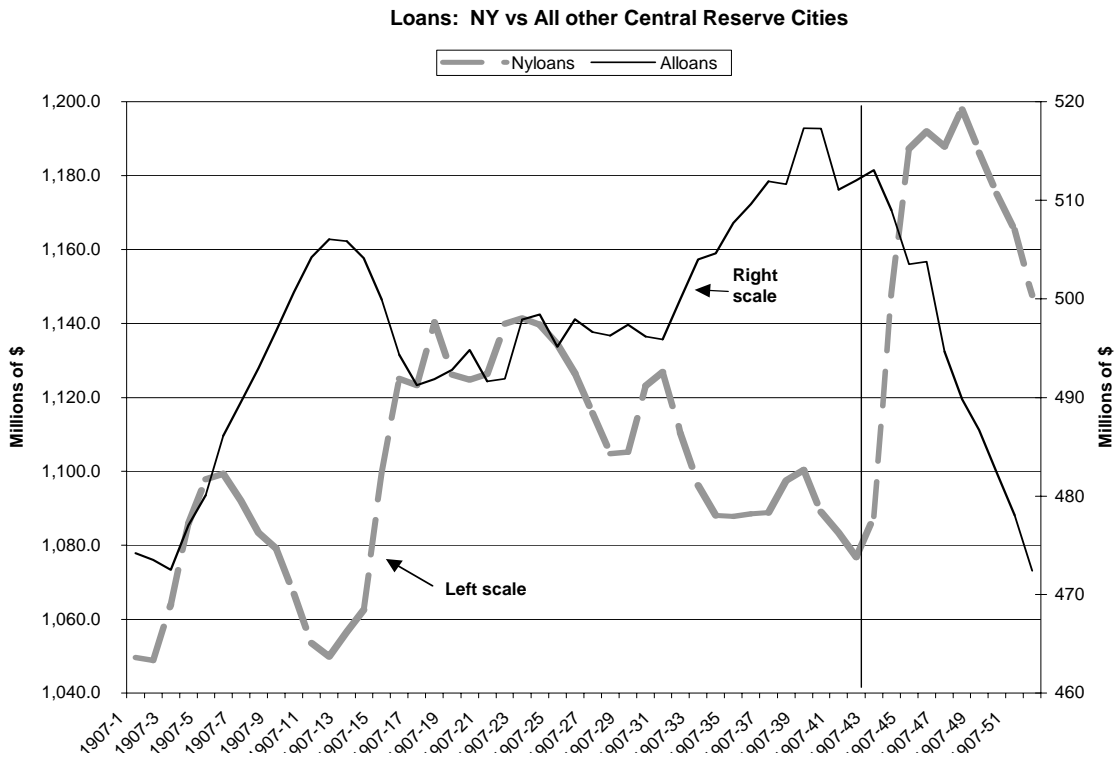
Graph 1: Deposits, Reserves, and Loans in New York



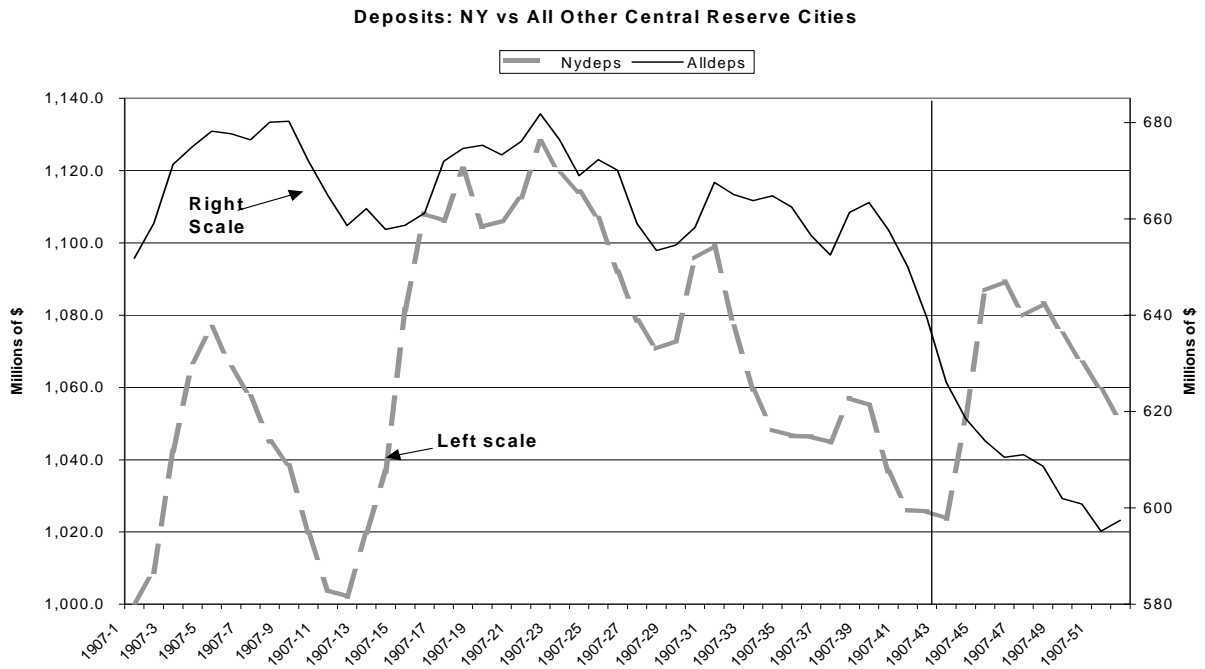
Graph 2



Graph 3



Graph 4



Graph 5

