Lessons from the Panic of 1907

Ellis W. Tallman and Jon R. Moen

The Bank Panic of 1907 was so serious that it became a catalyst for the creation of America's central bank. This study, which examines the circumstances leading to and the intervention measures taken during the panic, particularly focuses on trust companies' function as a financial intermediary. Unequal regulation among financial organizations, the authors find, led to a concentration of riskier assets in less regulated intermediaries, primarily trusts. Trusts' riskier asset portfolios made them the focal point from which the crisis spread to other segments of the financial market. Allowing various types of institutions comparable access to all assets and investment opportunities, the authors conclude, might reduce the risk that the collapse of one type of asset would threaten the solvency of an entire class of financial intermediary.

For the past two centuries recurrent crises have shaken the banking system and financial markets in the United States. One severe crisis, the Bank Panic of 1907, disrupted financial markets to such an extent that it became an important catalyst for creating the Federal Reserve and the U.S. banking system as it operates today. The panic involved several types of financial intermediaries, each distinct and playing a unique role in capital markets at the same time that each operated under a different set of regulations. This regulatory framework created conditions that made a panic more likely than if regulation had allowed uniform access to all investment opportunities.

What follows is a case study of an individual financial crisis, a record detailing events that led up to, and the maneuvers that took place during, the Panic of 1907. The focus is on the condition of New York City trust companies, a financial intermediary that had grown rapidly in prominence at the turn of the century and experienced the most severe depositor runs during the Bank Panic of 1907. Their growth can be attributed largely to freer investment opportunities that resulted from being less subject to regulation than state or national banks. Although trust companies were profitable, their specialization in collateralized loans, perceived as risky loans to firms that could not obtain credit through national or state banks, added to the severity of the panic.

This research has direct relevance for the regulation of intermediaries. Examining the role of the trust company as a financial inter-

The authors are economists in the macropolicy and regional sections, respectively, of the Atlanta Fed's research department.

mediary in the Panic of 1907 helps to expose the crucial role that uneven regulation played in determining the composition of asset portfolios of banks and trusts. Because trusts took advantage of investment opportunities to which banks had limited access, trusts had relatively undiversified portfolios.

Economic Conditions before the Panic

How does a financial crisis begin? What prompts a panic? Most answers suggest that financial calamities result from an unusual combination of economic conditions and events. In the case of the 1907 Panic the collapse of F. Augustus Heinze's attempt to corner the market for copper stock apparently triggered the chain of events, but informed observers agree that the same developments probably would not have led to a panic in a more benign economic environment.[1] Oliver M.W. Sprague, writing for the National Monetary Commission in 1910, describes in detail the economic conditions and special circumstances that resulted in the Panic of 1907. Unusually severe liquidity problems in New York City emerge as a backdrop in the crisis.

Seasonal Liquidity Fluctuations. During the National Banking Era the New York money market faced seasonal variations in interest rates and liquidity resulting from the transportation of crops from the interior of the United States to New York and then to Europe. The outflow of capital necessary to finance crop shipments from the Midwest to the East Coast in September or October usually left New York City money markets squeezed for cash. As a result, interest rates in New York City were prone to spike upward in autumn. Seasonal increases in economic activity were not matched by an increase in the money supply because existing financial structures tended to make the money supply "inelastic." The base money stock—gold, greenbacks, national bank notes, and gold and silver certificates—was also affected by unusual variations in gold flows through foreign exchange markets. Recent research by Fabio Canova offers evidence that external disruptions to the movement of gold were important determinants of bank panics.[2] Atypical gold flows in 1907 seem to have contributed to the extreme seasonal tightness in New York City's money markets in the fall.

The absence of finance bills during 1907 substantially altered gold flows, contributing to the conditions that framed the crisis. Finance bills were contracts to extend credit—essentially bonds issued to borrow overseas in hope of profit from anticipated exchange-rate fluctuations. The dollar's exchange rate varied over the year, strengthening during the harvest season when foreign demand for dollars to purchase crops was high and weakening thereafter. Finance bills were most frequently drawn in the summer, two or three months before crop movement, when the dollar price of sterling was quite high (E.W. Kemmerer 1910). Banks and trust companies then sold sterling notes for dollars when sterling was stronger and repaid the notes when the dollar value of sterling was lower, thus making a profit. Increased use of finance bills seems to have reduced the volatility of exchange rates and the volume of gold shipments overseas, enhancing the efficiency of the international exchange market, according to C.A.E. Goodhart and Margaret Myers. Finance bills also provided a crude futures or forward market in foreign exchange.

International Gold Flows. Unlike the foreign exchange market, domestic trade offered no such contractual provision to smooth capital flows. The New York money market transferred funds to the interior of the United States to finance transport of agricultural goods to New York City ports. Without a mechanism to arbitrage regional interest rates or increase liquidity, interest rates in New York City generally climbed during the fall. This regular pattern signaled the increased liquidity needs of New York City banks. Usually, higher interest rates attracted sufficient funds to offset the city's money shortage. In 1907, however, aberrations in international gold flows created additional credit constraints in the financial market that heightened the probability of a panic.

In the spring of 1906 the U.S. Treasury Department, under Secretary Leslie Shaw, devised policies to stimulate gold imports into the United States to combat what was perceived to be a shortage of gold. Subsidizing gold imports through the use of finance bills, the policy generated a significant inflow of $50 million in a little more than a month, between April and May 1906. In typical trade, finance bills issued during the summer would have prevented such substantial gold outflows from England. As it was, large-scale exports of gold from London nearly spurred a crisis in Great Britain. To defend its domestic financial markets, the Bank of England raised its discount rate in late 1906 and threatened another increase if American finance bills were not paid upon maturity without renewal (Myers).

Thus finance bills were suspended during 1907, substantially constricting the system of arbitrage that minimized actual shipments of gold. In 1907, despite relatively high U.S. interest rates, the United States exported $30 million in gold to London during the summer. As a result, the New York money market was left with an uncharacteristically low volume of gold upon entering the fall season of cash tightness.[3] New York financial markets were thus pressed by even less liquidity than usual at precisely the time when the need for money intensified. Any shock to the financial markets could, and in 1907 did, spark a major crisis.

The Onset of the Panic

Such a shock occurred on October 16, 1907, when F. Augustus Heinze's attempt to corner the stock of United Copper Company failed. Although United Copper was only modestly significant, the collapse of Heinze's scheme, which came atop a slowing economy, a declining stock market, and a tight money market, sparked one of the most severe bank panics of the National Banking Era. Investigation of Heinze's interests exposed an intricate network of interlocking directorates across banks, brokerage houses, and trust companies in New York City. Contemporary observers like Sprague believed that the close associations between bankers and brokers heightened depositors' anxiety.

As Heinze's extensive involvement in banking became apparent, along with that of another speculator associated with the copper scam, C.F. Morse, depositors' fears of insolvency precipitated a series of runs on the banks where the two men held prominent positions. After the failure of his attempt to corner United Copper stock, Heinze was forced to resign from the presidency of Mercantile National, and worried depositors began a run on the bank. The New York Clearinghouse, a consortium of banks in New York City, examined the bank's assets, announced that it was solvent, and stated that the clearinghouse would support Mercantile on the condition that Heinze and his board of directors resign.

During the reorganization of Mercantile National Bank, the New York Clearinghouse began examining other banks that had interests related to Heinze and that had been raising suspicion for some time. The restructuring of Mercantile revealed that Morse was one of that bank's directors. Sprague (1910, 248) describes Morse as having "an extreme character, even when judged by American speculative standards."

Morse was a director of seven New York City banks, three of which he controlled completely. He was also held in low esteem by most other bankers. His connection with Mercantile's difficulties worried depositors at his other banks, and two called for aid from the clearinghouse on October 19 in response to large withdrawals of deposits. The clearinghouse granted assistance on the condition that Morse retire completely from banking in New York. During the weekend, both Morse and E.R. Thomas, another of Heinze's cohorts, were relieved of their remaining banking interests. The clearinghouse promised to support those banks as well.

The assets of Heinze's banks totaled $71 million, compared to over $2 billion in all New York City banks and trusts (Sprague 1910, 249). Although this was a significant amount, depositors apparently considered the clearinghouse's promise of a $10 million fund to aid former Heinze banks sufficient because no notable run occurred on the banks. On Monday, October 21, Mercantile National resumed business with new management, and the run ceased. Similar action was taken at

Heinze's Copper Corner Attempt

F. Augustus Heinze, a key player in the initial stage of the panic, rose rapidly to notoriety in the financial world after he won a highly publicized legal battle against Amalgamated Copper in Butte, Montana. Amalgamated had been organized a few years earlier by several Standard Oil Company executives and financiers, including James Stillman of National City Bank of New York. The purchasers of Amalgamated reportedly earned a profit of $36 million on an investment of $39 million, which had gone primarily toward the acquisition of the Anaconda mines in Montana (*New York Times*, October 17, 1907).

Heinze, who owned a copper mine near the Amalgamated Mines, claimed that veins of copper from his mine extended under land owned by Amalgamated and that according to the "apex law" he had a right to mine it (Carosso 1970, 112). The matter was pursued in an extensive legal confrontation that was eventually settled out of court in February 1906, when Heinze sold his copper interest to Amalgamated for a reported $25 million, half in cash and half in Amalgamated securities.

Heinze took his gains to New York City, where he became involved in banking (Allen 1935). In January 1907 newspaper articles had already associated Heinze with E.R. Thomas and C.F. Morse, both New York bankers and owners of the Mechanics and Traders State Bank and Consolidated Bank. Heinze was placed on the board of directors of eight banks and two trust companies.[1] Elected president of Mercantile National Bank in February 1907, he immediately replaced the directorship with his associates. The Heinze group gained control of several other banks quite quickly through "chain banking," an organizational strategy similar to today's bank holding company. The group would buy stock in a bank and use it as collateral to borrow money, which was then used to buy stock in another bank or trust.

Heinze's attempt to corner the stock of United Copper, a company of which he was president, eventually triggered the Panic of 1907. The corner attempt, which probably explains the steady and relatively high price of United Copper stock despite a weak copper market during 1907, was not an unusual strategy. However, unlike other market corner schemes, this one seemed to be public knowledge, as suggested by several newspaper articles referring to the intent of the Heinze group (see below). His reputation as a speculator was further reinforced when the respected investment banking house J.S. Bache withdrew from its business relations with Heinze in February 1907 (*New York Times*, February 15, 1907).

The alleged corner of United Copper stock collapsed in October 1907. It was foiled in part by actions taken by an Amalgamated subsidiary, United Metals Selling Company, which apparently had been manipulating the market for raw copper. Subsequent Pujo Committee investigations revealed that United Metals Selling Corporation sold only 5 million pounds of copper from April to August 1907 (U.S. Congress, 734; see also 717-40). The normal amount ranged from 150 million to 250 million pounds. When Congressional Counsel Samuel Untermeyer pressed assistant manager Tobias Wolfson of the United Metals Selling Corporation for an explanation, he stated that no buyers could be found for copper. Untermeyer then quipped, "And all of a sudden, in October, they were interested in 93 million pounds in a single month?" Wolfson responded, "Yes. They had used up all that they had bought." As a result of these market manipulations, the price of raw copper plummeted, and the price of copper mining stocks broke. Having reached a high of nearly $121 a share in January 1907, Amalgamated Copper fell from $56 1/4 to $41 3/4 in October. Although United Copper maintained a steady price throughout the first half of October, the following events led to the total collapse of the Heinze interests.

United Copper first reached the headlines of the *New York Times* on Tuesday, October 15. On Monday its stock had risen from $39 to $60 during the first 15 minutes of trading on the Curb Market.[2] Buying was not done through Heinze brokers. Curb brokers emphasized that Heinze brokers had been taking great pains to keep track of all shares in United Copper that had come out since the high prices of January 1907, in an attempt to distinguish short selling.[3] Short positions in United Copper were thus known to be dangerous. Heinze was not interested in the total number of shares outstanding because he believed many shares were held in the western United States, where, in those days, they could take a week or more to reach New York for sale; rather, Heinze was concerned about how many shares were quickly accessible to the market.

Apparently thinking the time was right for a corner, Heinze purchased a large quantity of shares on Monday through the brokerage house of his brother, Otto Heinze. Many shares of United Copper had appeared on the market during trading on Saturday, October 12, and

Heinze suspected that brokerage houses were lending out his shares of United Copper to support short selling of the stock. He ordered Gross and Kleeberg, a brokerage house started in 1904, to purchase 6,000 shares of the stock at ascending prices, so that he was in effect buying his own shares again from short sellers at a higher price to attract more short sales. Of course, the short sellers did not realize that Heinze already owned the shares that they had borrowed and that he was now buying from them. This action, Heinze hoped, would force short sellers to a settlement in a technique known as a "bear squeeze." The squeeze would result when Heinze owned a large percentage of United Copper stock, in which the majority of actively traded shares were his own—shares that he had purchased from brokers who allowed large short-sale positions. Then, even though he had bought shares at increasing prices, by demanding delivery of his shares Heinze intended to force short sellers to come up with shares that they did not possess, and could not possess, unless they bought them from Heinze. Thus the settlement between Heinze and the short seller could be at almost any price and would clearly provide Heinze with a profit as long as there was no other source for United Copper shares.

To punish the exchange houses that had gone short in United Copper stock, Heinze put out an order calling in all his United Copper shares. However, Heinze's actions were ill-advised because his suspicions of short sales turned out to be unfounded. Gross and Kleeberg found many shares not owned by Heinze for sale at high prices. More shares appeared on Tuesday after news of the high stock price spread, so the anticipated time lag between the increase in stock price and the additional number of shares for sale was insufficient to support a corner.

Heinze's corner was further thwarted by what appeared to be the maneuvers of an unknown group of individuals determined to hinder his scheme by controlling a large block of United Copper stock. Newspaper sources reported that on Tuesday the transfer agency of United Copper, T. Buckingham, refused to transfer ownership of 17,830 shares of common stock (*Commercial and Financial Chronicle*, January 4, 1908). The agency claimed that the block was held in a joint account and could not be transferred unless both parties agreed. A newspaper article reported that Heinze believed a "market pool" of United Copper stock was being lent out to short sellers in violation of the agreement, although Heinze did not identify who was in the pool (*New York Times*, October 17, 1907). Had the pool been unwilling to cooperate, Buckingham's refusal of the transfer order might have prevented the market pool from upsetting the attempted corner. Announcement of the refusal strengthened United Copper stock on Tuesday, though it still closed down 16 from the previous day. When legal action was threatened against the refusal of transfer, the order was rescinded and the transfer went through.

On Wednesday Heinze's corner attempt suffered the final blow. Gross and Kleeberg were forced to sell United Copper stock to pay for the shares purchased earlier on margin. United Copper fell from $36 to $10 a share, and the firm had to suspend operations. The same day, the brokerage house Otto Heinze and Company closed. It was said at the stock market that Heinze and his brokers were "taken to the wall." The brokers had bought large amounts of United Copper stock on margin at increasing prices resulting almost entirely from their own purchases. When they stopped buying, the price fell, threatening their financial position. As Heinze interests were forced to sell their shares purchased on margin, the stock price broke dramatically.

The newspaper attributed the failure of the corner to the market pool of stock held by unknown individuals whose transactions Heinze had attempted to block through the transfer agent. One commentator suggests that Amalgamated Copper interests, namely H.H. Rogers, Stillman, and other powerful financiers, were "waiting in the wings" to deny Heinze an opportunity to corner the market in his stock (Robert Sobel). This analysis is feasible. If the stock was traded infrequently, Heinze would not have been aware of how much stock existed to be unloaded during his corner maneuver.

Notes

[1]Banks were Mercantile National, Consolidated National, Mechanics and Traders, Union, Bank of Discount, Riverside, Northern National, and Merchants Exchange National; trusts were Hudson and Empire (*New York Times*, January 21, 1907).

[2]The Curb Market in those days actually took place outdoors on the curb of the street. It later moved indoors and is now the American Stock Exchange.

[3]A short sale is a maneuver in which the seller, expecting prices to fall, offers stock he or she does not yet own to be delivered at a future date, taking profits from the difference between current (high) prices they would be paid and the future (low) prices they would face to acquire the stock.

several small banks operated by associates of the Heinzes, and by October 21 reorganization of the national banks was complete.

The Run on Trusts

By October 21, nothing resembling a systemic panic had yet stricken the banks, as Sprague points out (1910, 250). Depositors at Mercantile Bank withdrew funds but redeposited them in other New York City banks. The conditions of the economy, however, were uncertain. The apparant lack of liquidity in the financial markets, as discussed above, set the stage for a major financial crisis to erupt from circumstances that in other times might not have sparked concern.

Many historical accounts of the Panic of 1907 cite Monday, October 21, as the beginning of the crisis among the trust companies. On that day the National Bank of Commerce announced that it would stop clearing checks for the Knickerbocker Trust Company, the third largest trust in New York City. However, Vincent Carosso (1987, 535) suggests that the run on Knickerbocker began October 18, when Charles Barney, the Knickerbocker president, was reported to have been involved in Heinze's corner maneuver. Drawing from the private papers of J.P. Morgan, Carosso notes that the National Bank of Commerce had been extending loans to the Knickerbocker Trust to hold off depositor runs. National Bank of Commerce's refusal to continue acting as a clearing agent for Knickerbocker was interpreted as a vote of no confidence that seriously alarmed Knickerbocker depositors.

Morgan, along with James Stillman of National City Bank and George Baker of First National Bank, had organized an informal team to oversee relief efforts during the panic at the national banks (Carosso 1970, 129; 1987, 538-39). Assisting them were several young financial experts responsible for evaluating the assets of troubled institutions and indicating which ones were worthy of aid. Chief among these investigators was Benjamin Strong of Banker's Trust Company, who would later become president of the Federal Reserve Bank of New York.[4]

On Monday evening, October 21, Morgan had organized a meeting of trust company executives to discuss ways to halt the panic. Strong reported to Morgan that he was unable to evaluate Knickerbocker's financial condition in the short time before funds would have to be committed. Unwilling to act on limited information, Morgan decided not to aid the trust; this decision kept other institutions from offering substantial aid as well. On October 22 Knickerbocker underwent a run for three hours before suspending operations just after noon, having paid out $8 million in cash.

Ironically, next to the front-page article describing the suspension of the Knickerbocker Trust in the Wednesday, October 23, edition of the *New York Times* was a headline describing Trust Company of America, the second largest trust company in New York City, as the current "sore point" in the panic. By attracting attention to Trust Company, the newspaper article greatly exacerbated the serious run on it. Barney, who was president of Knickerbocker, was also a member of the board of directors of Trust Company of America.

It has been argued that the statement in the *New York Times* by George W. Perkins, one of Morgan's partners, citing Trust Company's problems as the current "sore point" was an attempt to isolate the panic at an important, fundamentally sound institution that would presumably be aided through the run by the major financiers (Frederick Lewis Allen 1949, 248-49). Trust Company of America was near the Morgan and Company offices, making it a likely candidate for such a maneuver. During the panic, the newspapers described frequent exchanges of big leather boxes between Morgan offices and Trust Company offices, signaling the exchange of money and securities. However, H.L. Satterlee, Morgan's son-in-law, later emphasized that no banker would have purposely started a run on any bank for fear that the panic might eventually engulf his own institution as well (470).

On Tuesday, October 22, withdrawals from Trust Company of America were approximately $1.5 million; on the Wednesday when the ill-timed article was published depositors claimed another $13 million of nearly $60 million in total deposits. Withdrawals from Trust

Company of America on Thursday, October 24, were a further $8 million to $9 million. During the span of the run, which lasted two weeks, Trust Company of America reportedly paid out $47.5 million in deposits.[5]

Rescue Efforts

Realizing that the failure of Trust Company of America and Lincoln Trust, another institution whose distress had been publicized, would endanger the New York money market, a committee of five trust company presidents formed to assist trusts in trouble. Not all trusts were willing to cooperate, though, so the committee was not able to collect enough money to provide reliable relief for a trust company facing a sudden run. They petitioned Morgan for help.

Morgan, Baker, and Stillman knew that aid for Trust Company of America was not certain and saw that the collapse of several large trusts would be disastrous. Strong had arrived at Trust Company of America sometime after 2:00 A.M. Wednesday and had begun to appraise its assets. That afternoon he reported to Morgan that Trust Company was basically sound and deserved assistance. Morgan channeled about $3 million to Trust Company just before closing time, which allowed it to resume business the next day.

Aid began to come from several other sources. J.D. Rockefeller deposited $10 million with the Union Trust to help the trusts and announced his support for Morgan. Secretary of the Treasury George Cortelyou and the major New York financiers met on the evening of Wednesday, October 23, and discussed plans to combat the crisis. Cortelyou deposited $25 million of the Treasury's funds in national banks the following morning. Between October 21 and October 31, the Treasury deposited a total of $37.6 million in New York national banks and provided $36 million in small bills to meet runs. By the middle of November, however, the U.S. Treasury's working capital had dwindled to $5 million. Thus Treasury could not and did not contribute much more aid during the rest of the panic (Timberlake, 173-78).

Crisis on the Stock Exchange

Meanwhile, by Thursday, October 24, call money on the New York Stock Exchange was nearly unobtainable. Call money was money lent for the purchase of stock equity, with the stock serving as collateral for the loans. Call loans could be called in at any time. The opening rate for call money was 6 percent, but exchange president Ranson H. Thomas noticed a serious scarcity of money. At one point that morning a bid of 60 percent went out for call money. Yet, even at that exorbitant rate, no money was offered. The last recorded transaction of the day was at the opening rate of 6 percent (U.S. Congress, 355). Fearing a total collapse of the stock market, Thomas called Stillman for aid. Stillman referred Thomas to Morgan, who was in control of most of the available funds. While Thomas traveled to Morgan's office, the call money rate on the exchange reached 100 percent.

In his testimony to the Pujo Committee, established in 1912 by Congress to investigate the possible existence of New York City money cartels and their potential conspiracy to precipitate the panic, Morgan's partner Charles Steele described efforts to provide funds to the stock market during the crisis. Morgan, who reportedly discussed the situation at the stock exchange with other bankers before his meeting with Thomas, told Thomas to announce that $25 million would be available on the exchange floor. After a short time, Steele arrived at the exchange with a list of national banks which, as a group, promised to loan $25 million to the exchange, including $4 million from First National and $8 million from National City. The market borrowed a total of $18.95 million that day (U.S. Congress, 457).

Indirect use of Treasury funds to forestall collapse of the market during the panic also came under scrutiny during the Pujo investigation. Legally restricted to national banks, Treasury deposits were channeled toward the banks that most quickly presented acceptable collateral, which for the most part meant Treasury bonds. Direct use of Treasury deposits in the stock market was prohibited. In testifying to the Pujo Committee, however, Treasury Secretary Cortelyou explained that the use of Treasury funds was not specified before they were credited; rather, the major financiers determined the most appropriate application for the money (U.S. Congress, 439). Thus, in effect, nearly all the funds contributed to aid the panic were controlled by Morgan, who decided how much money would be used and where.

Trying to determine whether government funds were used directly to ease the credit strain on the stock market, the counsel for the Pujo Committee, Samuel Untermeyer, pressed Cortelyou for information about the specific amount of government deposits received by each national bank from the total $25 million allocated. Cortelyou had no recollection of the transactions and did not know whether the Treasury had records of them.

Estimates of available cash reserves in New York national banks indicate they were high enough to provide funds to the stock market had government funds been denied to the exchange. On August 22, 1907, New York national banks held $218.8 million. Cash reserves in the "big six" national banks were $140.7 million.[6] On December 3, 1907, reserves had fallen to $177 million for all New York national banks and $112.5 million for the "big six." During the worst period in the panic, reserves were probably lower. However, to offer their own funds to the stock market, banks would have had to drop below the legal 25 percent reserve requirement. Thus Untermeyer's concerns were not without a basis despite the apparent availability of funds from banks. The congressional testimony suggests that Morgan simply allocated the government deposits in national banks to the stock exchange in the same amounts that the government deposited them.

On October 25 another money pool was required. About $10 million came from the Morgan group, $2 million from First National, and $500,000 from Kuhn, Loeb, and Company. This time, however, Morgan allowed the market to determine the call money rate, which remained at nearly 50 percent most of the day. The Morgan funds had restrictions designed to stifle speculation. First, no margin sales were allowed—only cash sales for investment. Also, the full amount of Morgan money was not released until afternoon. Morgan's partner, Perkins, noted that the money collected for the Friday stock exchange pool was about the most that could be collected that day and yet was barely enough to keep the market open (Allen 1949, 255). Throughout the stock exchange crisis, both Trust Company of America and Lincoln Trust were supported by Morgan's efforts.

Actions of the New York Clearinghouse Association

While financiers were working out the crises with the trusts and the call loan market, money and reserves had become increasingly tight at banks. On October 26 the clearinghouse issued clearinghouse loan certificates as an artificial mechanism to increase the supply of currency available to the public, a tactic it had used in earlier financial crises in 1873 and 1893 (see Richard Henry Timberlake, Gary Gorton, or Ellis Tallman).

Although the national banking system offered no legal mechanism to increase the supply of currency quickly, loan certificates provided an informal (if unlawful) way to free up a sizable amount of cash. In normal business banks used currency as reserve assets and as the medium to clear accounts with each other. Clearinghouse loan certificates enabled banks to monetize their noncurrency assets during a crisis: banks would substitute loan certificates for currency in their clearings, thus releasing the currency to pay depositors who demanded cash. Loan certificates were not recognized as currency by the public or by depositors, and they were supposed to be circulated only among banks. However, A. Piatt Andrew (1908) noted that during the 1907 Panic, a number of substitutes for cash were employed in transactions.

Following the first issue of clearinghouse loan certificates on October 26 during the 1907 Panic, loans initially increased by about $11 million. During the next three weeks more than $110 million in certificates were issued in New York City. Nearly $500 million in currency substitutes circulated throughout the country as a "principal means of payment," according to Andrew (1910, 515). Sprague has criticized the clearinghouse for delaying the use of loan certificates until after the panic was well under way. He believed that issuing certificates as soon as the crisis struck the trusts would have calmed the market by allowing banks to accommodate their depositors more quickly. Aid would have gone directly to troubled banks and trusts, and the cumbersome device of money pools could have been avoided. Fewer loans would have been called in, thus reducing the tension at the stock exchange (Sprague 1910, 257-58).

The clearinghouse also restricted the convertibility of deposits into cash—an action which, like issuing loan certificates, was illegal. The restriction, referred to as "suspension of payments," increased transaction costs. Nevertheless, banks continued other business activities such as accepting deposits and clearing checks. The suspension of payments spread across the country through the system of correspondent banks. Though convertibility was widely restored by the beginning of January, in a few instances loan certificates and other substitutes for cash circulated as late as March 1908.

Distress Spreads

New York City government was also nearing a financial crisis of its own. It needed $30 million in new funds but had delayed a bond issue because of the situation in the financial markets. The city had attempted to float a bond issue in the summer of 1907, but even then the bonds had not found a market. Though no source specifies how the New York City Comptroller financed city expenditures for the interim, it seems the city used short-term loans to pay its expenses until another bond issue could be attempted. The Mayor of New York, George McClellan, approached Morgan on Monday, October 28, with the city's financial problems. Short-term obligations were coming due, and the city had no funds with which to pay them. Morgan recognized that if the city defaulted on its loans, the crisis could become completely unmanageable.

Morgan, Stillman, and Baker thus agreed on October 29 to underwrite a $30 million, 6 percent bond issue of New York City. Morgan devised a plan in which the major banks would take pro rata shares of the issue and deposit them with the clearinghouse. The clearinghouse would then issue clearinghouse loan certificates in an equal amount and credit them to the city's accounts at First National and National City.

Meanwhile, the lack of money to the call loan market was threatening the brokerage house of Moore and Schley. The firm had borrowed $25 million from New York banks, placing a large block of Tennessee Coal, Iron, and Railroad Company stock as collateral. The loans were about to come due. To complicate matters, the brokerage was already using the same stock as collateral on other loans it had granted to its senior partner, Grant B. Schley, Baker's brother-in-law.

If Moore and Schley liquidated the stock to pay off its loan, the price of the stock would have tumbled, causing the call loan market to become even tighter. In the face of an already weak stock market, such a disruption could have been disastrous, undermining confidence even further.

Morgan eventually solved the problem by giving his support to a plan designed by his attorney and friend, Lewis Cass Ledyard. Ledyard proposed that U.S. Steel buy Moore and Schley's shares of Tennessee Coal, Iron, and Railroad, paying for them with its own highly rated 5 percent gold bonds. Carosso (1970) has noted that this maneuver was important for several reasons. Moore and Schley would be saved without depressing the stock market, and U.S. Steel would be able to absorb a competitor. The innovative aspect of this arrangement was that it involved no currency in a market that was already cash-short from the runs on the trust companies. The deal went through on Monday, November 4, after President Roosevelt agreed not to oppose it on antitrust grounds.

The crisis at the trust companies continued during the Moore and Schley episode. Trust Company of America and Lincoln Trust required further aid, and Morgan convinced other trust presidents to support a $25 million loan for the troubled institutions. The funds were provided on November 4 after several nights of negotiation. The panic began to ease when the trust company presidents organized by Morgan agreed to form a consortium to support trust companies facing runs.

The New York Clearinghouse had detailed knowledge of the quality of bank assets in New York. A similar, formal organization of trust companies would have had current knowledge of the assets and liabilities of its member trusts. Such an organization could have more readily assessed the situation at trust companies facing runs than the ad hoc consortiums and money pools organized by Morgan. As Sprague has argued and experience supports, however, the legislative solution to a major crisis is usually more government regulation rather than improved industry self-supervision (1910, 273).

The Role of the Trusts

It is not surprising that trust companies early on became the focal point of the panic. In New York, trust assets had grown phenomenally between 1890 and 1910, increasing 244 percent during the 10 years ending in 1907, from \$396.7 million to \$1,394.0 million. In contrast, national bank assets grew 97 percent, from \$915.2 million to \$1,800.0 million, while state-chartered bank assets grew 82 percent, from \$297 million to \$541.0 million (Barnett, 234-35). Thus the manner in which trust companies used their assets greatly affected the New York money market. (For a more detailed analysis of the role of trusts in the panic, see Moen and Tallman.)

Trust companies were much less regulated than national or state banks in New York. In 1906 New York State instituted a requirement that trusts maintain reserves at 15 percent of deposits, but only 5 percent of deposits needed to be kept as currency in the vault. Before that time trusts simply kept whatever reserves they felt necessary to conduct business. National bank notes were adequate as cash reserves for trusts while national banks in central reserve cities like New York were required to keep a 25 percent reserve in the form of legal tender or specie.

Trusts were originally rather conservative institutions, managing estates, holding securities, and taking deposits, but by 1907 trusts were performing most of the functions of banks except issuing bank notes. Many of the larger trusts specialized in underwriting security issues. Others wrote mortgages or invested directly in real estate—activities barred or limited for national banks. New York City trusts had a higher proportion of collateralized loans than did New York City national banks. Conventional banking wisdom associated collateralized loans with riskier investments and riskier borrowers. The trusts, therefore, had an asset portfolio that may have been riskier than those of other intermediaries.

National and private banks found the investment banking functions of trusts so useful that many of them gained direct or indirect control of a trust through holding companies or by placing their associates on a trust's board of directors. In many instances a bank and its affiliated trust operated in the same building.

Trusts appear to have provided intermediary functions different from those of banks. Although the volume of deposits subject to check at trusts was similar to that at banks, trusts had much less clearing activity than did banks, registering clearings only about 7 percent of the volume of those at banks. Trusts were not then like commercial banks, whose assets are used as transactions balances by individual depositors or firms.

National banks were part of a network of regional banks that had correspondent relationships to expedite interregional transactions (James, 40). Trusts were not part of the correspondent banking system, so their deposits were more local and less directly subject to the recurring seasonal strains on funds.

The most severe runs in New York City were limited to the trust companies, not the state or national banks (Moen and Tallman). Trusts' riskier asset portfolios in conjunction with their ambiguous relationship to the New York Clearinghouse signaled to depositors that the trusts were likely to become insolvent during an economic and financial downturn.[7] Runs forced trusts to liquidate their most liquid assets, call loans on the stock market. Large-scale liquidation of call loans depressed the value of stocks.

Given the predominance of national banks in the call loan market, extensive liquidation of call loans by trusts threatened the assets of national banks. Although trusts and national banks were legally distinct, both intermediaries operating in the call market were economically integrated. It was because national banks and the clearinghouse were aware that the runs on the trusts could spread to the entire financial system that they acted directly to stop the runs.

Conclusion

Some important policy lessons emerge from this case study of the 1907 Panic. Restriction of the types of investments national banks could make in 1907 did not reduce the overall riskiness of the financial system's assets; rather, the uneven regulation of trusts and banks concentrated riskier assets in a few institutions, primarily the trusts. Negative shocks to trust assets, notably collateralized loans, raised the specter of their possible insolvency. If regulations allowed intermediaries comparable access to all assets and investment opportunities, the potential for adequate diversification of portfolios might reduce the risk that the collapse of one type of asset would threaten the solvency of an entire class of intermediary.

Nor is it certain that access to the New York Clearinghouse could have averted insolvency among thrifts in 1907, given the high concentration of risk in their portfolios. Although the clearinghouse functioned to some extent as a central bank, lack of explicit legal authority to issue clearinghouse loan certificates kept the clearinghouse from fully exploiting these functions. It did maintain records on the financial health of participating banks and made this information available to members. Thus, when member banks requested aid, the clearinghouse had the information necessary to make a decision quickly. Trusts' limited affiliation with the clearinghouse made information about distressed trusts harder to obtain and probably contributed to the destabilizing isolation of the Knickerbocker Trust.

Even with access to a lender of last resort, under conditions of uneven regulation trust companies would have had the incentives to maintain portfolios with profitable but risky assets. The potential for a financial crisis to drive a class of intermediaries into insolvency would remain.

Notes

[1]Kindleberger refers to "copper speculation" that involved more than just Heinze's corner attempt as a prime contributor to the panic. Analysis of the copper market during 1907 is interesting (see the testimony of Wolfson in U.S. Congress), but the direct links to the panic are less clear. The connection is left for further research.

[2]For a discussion of the money supply process in the National Banking Era, see Goodhart or, for a more concise description, Tallman.

[3]The aberration of gold flows exacerbated the amount of gold shipments to the United States when European importers paid for shipments of cotton and cereal from the United States during the panic.

[4]There he was recognized as a decisive leader during the early years of the central bank. His untimely death in 1928, which left the young Federal Reserve System without focused leadership, has been argued by some as being the reason for the Fed's inept handling of the bank panics early in the Great Depression (see Friedman and Schwartz).

[5]Carosso (1987), citing figures in J.P. Morgan's private records. A run on Lincoln Trust, a smaller institution, began with withdrawals exceeding $1 million.

[6]Sprague (1910, 234). Sprague notes that the six national banks (National City, National Bank of Commerce, First National, Chase National, Park National, and Hanover National) had grown from 30 percent to 60 percent of the total assets in New York national banks from 1873 to 1907.

[7]Kindleberger suggests that the trusts were responsible for excessive credit expansion related to speculative activities prior to the Panic of 1907.

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