THE CRASH AND ITS AFTERMATH

A History of Securities Markets in the United States, 1929–1933

Barrie A. Wigmore

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To my wife, Deedee

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Preface

This book was born out of my own desire for a detailed outline of financial events following the Crash in 1929. For those who anticipate or fear another financial breakdown, there is no other period from which to learn. Most books on the Crash have succumbed to the drama of the event and have concentrated on hyperbole, extreme market changes, and personalities. And there are no comprehensive books on financial markets following the Crash, which is difficult to believe since studying the ruins of a crash is as important as recognizing signs of an impending crash and avoiding it. The available books focus on narrow areas such as bonds, monetary policy, or swindles.

The period covered in detail is from the Crash in 1929 to the end of President Franklin D. Roosevelt's "First Hundred Days" in June 1933, a period of decline and disarray in the financial markets. After the First Hundred Days, the financial markets began a recovery that continued until late 1937.

The data base for much of this book, especially for details of particular industries, consists of 142 leading companies. Financial tables for these companies are in the Statistical Appendix, accompanied by annual tables that apply to each company or its stock the traditional financial measures, such as price-earnings ratios, dividend yields, market price relative to book value, return on equity, and bond ratings. The annual tables also measure each company's stock performance on various bases.

These 142 stocks constituted approximately 77% of the market value of all New York Stock Exchange (NYSE) stocks and include the principal Curb Exchange (now the American Stock Exchange) and Over-the-Counter stocks. (NYSE stocks had a market value of $64.7 billion on January 2, 1930, compared with $49.8 billion for these 142 stocks.) They were chosen on the basis of their volume of trading and market value, and whether they were representative of industries that deserve mention and illustrated general investment principles. The result is a group that illustrates the general stock market. Concentration on this group results in a clear picture of market swings in this period and of valuations of various companies. The data on all the companies come from Moody's manuals for railroads, public utilities, industrials, and banks and financial companies. These manuals were available to investors at the time.

I have presented the entire picture of the credit markets by focussing on bonds of all ratings and types and on short-term investments of all types. Here again I focussed on major bond issues or industry groupings as illustrative of a broader population.

Statistics never tell the whole story of financial markets, so I have woven into the story the personalities riding on events and the structural changes taking place in the financial industry itself. For example, the momentum of the stock market after the Crash had as much to do with the large number of brokers recently employed to sell stocks as it did with human nature in search of a bargain. People made a difference too, for it is clear that during this period companies in comparable industries fared quite differently depending on the skill of their managers.

This book could have been shorter were it not for the summary of events taking place in the broader economy provided for each year, but these events were too epochal to ignore. For example, how can one understand the securities markets apart from monetary policy, the collapse of sterling, the Smoot-Hawley Tariff, and the banking crises of 1932 and 1933?

Perspective has been my goal at all points. I have concentrated on the securities markets in their broad forms and assumed that if the major events as they affected leading companies are clear, the facts are well served. Some securities markets are hardly touched on, such as small companies traded on the Curb Exchange or Over-the-Counter, real estate bonds, convertible securities, puts and calls, and "junk bonds," because I consider them of minor importance. I have indulged in a considerable degree of highlighting in order to cover the whole horizon of financial events.

Herbert Hoover would have liked this book. He believed that the Depression was the result of a series of shocks—collapse of speculation in the stock market, collapse of international trade and finance, collapse of the banking system. I agree, except that the shocks were even more multifarious. Simplistic explanations of the causes of the Depression pale when the many problems of the period are looked at in perspective. Hoover would also have appreciated the constraints on macro-fiscal and monetary policies that become evident when one probes the details of industry losses, bond rating reductions, securities price declines, and public policy constraints. One gets the uncomfortable feeling that macro-fiscal and monetary policies had slight opportunity to affect the course of events in this chain of disasters.

On a personal note, I owe a great debt to David Darst, a colleague at Goldman, Sachs & Co. and author of *The Complete Bond Book*, whose early enthusiasm for and attention to this book meant a great deal to me. Professor Tom Ferguson of the University of Texas has shown similar attention and enthusiasm in the

later stages and has saved me from numerous errors. My thanks to Peter Temin of M.I.T. for introducing me to Tom. Vince Rossiter, a learned country banker in Hartington, Nebraska, was also an enthusiastic early supporter who helped to spur me on. Sidney Homer provided a helpful interview and guidance in the beginning. He was also kind enough to review my conclusions. Above all I must thank my wife, Deedee, who was supportive of this time-consuming effort over 12 years, despite the burden it imposed on our free time.

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Abbreviations

Banking & Monetary Statistics	The Board of Governors of the Federal Reserve System, Banking and Monetary Statistics, Washington, D.C.: The National Capital Press, 1943.
Historical Statistics	Historical Statistics of the USA, Colonial Times to 1970, 2 parts, Washington, D.C.: U.S. Department of Commerce, U.S. Bureau of the Census, 1975.
Monetary Statistics	Milton Friedman and Anna Jacobson Schwartz, Monetary Statistics of the United States Estimates, Sources, Methods, New York: National Bureau of Economic Research, 1970.
Moody's Railroad Manual	John Sherman Porter, editor in chief, Moody's Manual of Investments American and Foreign Railroad Securities, New York: Moody's Investors Service, annual publications.
Moody's Utility Manual	John Sherman Porter, editor in chief, Moody's Manual of Investments American and Foreign Public Utility Securities, New York: Moody's Investors Service, annual publications.
Moody's Industrial Manual	John Sherman Porter, editor in chief, Moody's Manual of Investments American and Foreign Industrial Securities, New York: Moody's Investors Service, annual publications.
Moody's Financial Manual	John Sherman Porter, editor in chief, Moody's Manual of Investments American and Foreign Banks-Insurance Companies-Investment Trusts-Real Estate-Finance and Credit Companies, New York: Moody's Investors Service, annual publications.

National Income Accounts	National Income & Product Accounts of the United States 1929–65 Statistical Tables a Supplement to the Survey of Current Business, Washington, D.C.: U.S. Department of Commerce, 1966.
NYSE Year Book	New York Stock Exchange Year Book, New York: New York Stock Exchange, Inc., annual publication.
Statistical Abstract 1939	Statistical Abstract of the United States 1939, Sixty-First Number, Washington, D.C.: U.S. Government Printing Office, 1940.
Stock Exchange Practices	Stock Exchange Practices, Hearings before the Committee on Banking and Currency, 73rd Congress, 1st Session, 1933.

The CRASH and Its Aftermath

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1

The Crash

INTRODUCTION

The year 1929 was an epic year in financial markets, but its prominence could hardly have been predicted as the year began. When the New York Stock Exchange (the Exchange or NYSE) opened on January 2nd, the Dow Jones Industrial Index was at exactly 300, and it rose 7 points. That was the best gain of the month, although daily trading volume averaged a high 4.6 million shares.[1] The Dow Jones Industrial Index (DJII) closed January at 317, its high for the month. In the following five months there was little change from these January levels. The daily close on the DJII hovered between 300 and 320 with few exceptions until the last week in June. Trading volume and prices soared through the summer, however, until the DJII hit 381 on September 3rd. The Crash began approximately six weeks later and within a month battered the Dow Jones Industrial Index down almost one-third from its 1929 high, to 257. The Dow Jones Railroad Index dropped much further—down 55%. The sample group of stocks which is the data base for much of this study averaged a decline from 1929 high to low prices of 52%, but this was calculated as if all the stocks hit their lowest price on the same day. (Henceforth our sample group will be referred to simply as "stocks" or "all stocks." If some larger group is meant, the text will make this clear.)

The market had been very high at its peak. Stock prices averaged 30 times 1929 earnings per share and 425% of 1929 book value per share. At their highest prices, stocks yielded a bare 2 1/2% on average. A few stocks had reached unbelievable heights. Columbia Graphophone Co.'s stock price had reached 165 times 1929 earnings per share and over 50 times book value per share. The National City Bank of New York's stock reached a price 120 times 1929 earnings per share and 13 times book value per share. Other stocks, such as Burroughs Adding Machine Co., Commercial Solvents Corp., International Nickel Co. of

Canada, Ltd., Standard Brands, Transamerica Corp., and United Aircraft and Transport Corp., reached prices over 10 times book value per share.

In 1929 new issues of securities set a record that lasted until the 1960s. Total issues were $11.6 billion, up from an average of $5.8 billion between 1924 and 1928. Common stock issues of $5.1 billion, dominated by investment trust issues, were 10 times the $0.5 billion annual average of common stock issues between 1924 and 1928. This huge volume pushed aside traditional bond issues.

THE COURSE OF EVENTS IN THE STOCK MARKET LEADING UP TO THE CRASH

Stock market prices in the first six months of 1929 were at levels so high that many observers thought them overinflated. Felix M. Warburg and Roger Babson were already publicly predicting a destructive decline in stock prices. Observant market speculators such as Bernard Baruch and Eugene Meyer, who soon became Governor of the Federal Reserve Board in Washington, D.C., were getting out of the market. Percy Rockefeller, a nephew of John D. Rockefeller, and a leading stock market speculator, had begun to sell out his stock positions in 1928, as had John J. Raskob, National Chairman of the Democratic Party and the financial authority on the boards of both E. I. Du Pont de Nemours & Co. and General Motors Corp. (GM). Raskob sold 150,000 of the 153,000 GM shares he owned in 1928. But other professionals believed the price levels were justified by the nation's prosperity and progress. Charles E. Mitchell, Chairman of the National City Bank, said stocks were cheap. Irving Fisher, a reputable Yale economist, backed him up.

There was some room for debate over whether stock prices were too high in the first half of 1929. The Dow Jones Industrial Index was between 300 and 320 throughout the period, which was about 24 times 1929 earnings per share. Twenty-four times earnings was a high average, but at least it was not rising. It appeared that prosperity might catch up with stock prices, since the latter barely rose during the six months. The volume of trading also suggested that investors were marking time. It had averaged 4.6 million shares per day in January, 3.9 million shares in February, and 4.8 million shares in March, but it had trailed off to 3.4 million shares in April, 3.8 million shares in May, and 3.1 million shares in June.

This atmosphere changed decisively in the last week of June. The Dow Jones Industrial Index rose to 333 by the end of the month. The same index closed July at 347, its high for the month, and closed August at 380, again the high for the month. Average daily volume in July was 3.9 million shares and in August was 4 million shares. These should have been "dog days," when both brokers and their customers took vacations, but the former could not afford to leave and the latter did not want to. Making money in the market was more fun than the beach.

The peak in the market occurred on the first trading day in September at 381 on the Dow Jones Industrial Index. Thereafter the market closed steadily lower each week, down to 343 at the end of the month. Trading volume increased, however. It averaged 4 1/2 million shares daily for the month.

September witnessed a record volume of new issues—$1.6 billion, of which $1 billion was common stocks. Common stock issues in this one month were almost double the total for any previous complete year except 1928. This comparison even understates the volume of common stock financing, because debt and preferred stock financing at the time had an unusual emphasis on equity features, such as warrants or conversion rights, which appealed to common stock investors. Virtually every significant common stock offering that month was for an investment company.

Doubt was widespread that the September level of stock market prices could be maintained. Roger Babson had become shrill in predicting the coming collapse of prices. His United Business Service recommended selling stocks in September and again in October because of "tight money." Alexander Dana Noyes, the wise and experienced financial editor of the *New York Times*, was equally pessimistic. Brokers' monthly letters predicted a setback for stocks, and brokers found their inventories of unsold new issues rising as the buying public hesitated.

In the first week of October there was a sickening drop in stock prices. The Dow Jones Industrial Index declined in two days from 344 to 325. Volume reached 5.6 million shares on the second day, and there were touches of panic in the trading as bids for some stocks momentarily disappeared.

Margin calls were numerous. Some brokers were rumored to be in trouble because of the heavy slate of initial public offerings which continued unabated, particularly a $50 million common stock offering which created the Marine Midland bank system. Speculators were active on both sides of the market, so that the Exchange tape was often late. Jesse Livermore, Wall Street's most prominent bear, was rumored to be heavily short.

In the second week of October, however, prices bounced back to 352 on the Dow Jones Industrial Index, and this helped to restore confidence. In the third week of the month stock prices again dropped sharply, so that the DJII was again back to the 320 level. The market was behaving in an erratic manner. The professionals in the market became very uneasy and tried to reduce their commitments. On October 23rd, stock prices suddenly dropped 20 points on the DJII to 305. The volume was 6.4 million shares. At that point, stock prices equalled their level at the first of the year, and a number of investors were in trouble at this level. Investment trusts which had been floated in the summer and had immediately bought common stocks suddenly found they had bought at the highest prices of the year. Instead of making trading profits to pay interest and preferred stock dividends, they would incur trading losses if they dared to sell. Individuals who had pyramided their summer profits by buying on margin were suddenly being asked for more margin by their brokers. Stupendous portfolio profits were turning into losses. This is where our story begins.

THE CRASH

On Thursday, October 24, 1929, which ever since has been known as "Black Thursday," 1,100 members of the New York Stock Exchange were on the floor for the 10:00 a.m. opening bell. Usually, 750–800 members started the day, but the Exchange had directed that all employees were to be in their places at the opening because of heavy margin calls and sell orders placed overnight. Extra telephone staffs had been assembled at the members' boxes around the floor. Opening trades were at prices not far from Wednesday's closing prices. On the Curb Exchange, now the American Stock Exchange, Cities Service Co. stock opened at $55 3/4 on a block of 150,000 shares worth $8.4 million, the largest block in the history of any exchange. Cities Service stock traded over 1 million shares by the end of the day. Price levels wilted quickly after the opening trades, when the volume of stock for sale became apparent. There was a tidal wave of panic, not a gradual loss of confidence. By 10:30 the New York Stock Exchange was in pandemonium and the ticker tape was 16 minutes late. Prices dropped $5 and $10 per trade. Bids disappeared completely for less-active stocks. United States Steel Corp. plunged through its expected support level of $200 down to $194 1/2.

The members of the Federal Reserve Board assembled in Washington, D.C., for the first of two meetings that day in an effort to keep pace with events. This first meeting lasted from 10:45 a.m. to 1:00 p.m. The second lasted from 3:30 to 5:00 p.m., with Treasury Secretary Andrew Mellon presiding. The first meeting received reports from the New York Federal Reserve Bank and Thomas W. Lamont of J. P. Morgan & Co. on the course of stock prices.

The streets of the financial district were in an uproar from shortly after the opening of the Exchange as investors heard of the disaster and, unable to gain information through normal channels, went to the Exchange to seek information firsthand. Thousands of people milled about at the intersection of Wall and Broad streets. Winston Churchill made his way through the crowd to observe the collapse on the NYSE trading floor from the Visitors Gallery.

The Federal Reserve Board, brokers, and bewildered customers had to rely on flash reports from the Exchange floor to keep track of prices during the day. The ticker tape was useless; it was 16 minutes late at 10:30 a.m., 47 minutes late at 11:30, and 92 minutes late at 1:00 p.m. The 3:30 p.m. closing prices were not available until 7:35 p.m. There were 12,894,650 shares traded in 974 issues during the day—both records.

At about 12:00 noon the first organized effort to restore the market began at J. P. Morgan & Co. on the corner of Wall and Broad streets, across from the New York Stock Exchange. Several leading bankers assembled for the meeting. Thomas W. Lamont, the operating head of J. P. Morgan & Co., attended with his partner, George Whitney, the heir apparent. Albert Wiggin, Chairman of The Chase National Bank (not yet a Rockefeller bank), William Potter, Chairman of the Guaranty Trust Co. of New York, and Seward Prosser, President of

Bankers Trust Co. of New York, were there, along with Charles E. Mitchell, President of National City Bank. George F. Baker, Jr., Vice Chairman of The First National Bank of New York, joined the group later in the day when it met again after the close. Many prominent Wall Streeters were not part of the group. The four Guggenheim brothers, Daniel, Murray, S.R., and Simon, were the only people formally acknowledged as being added to the group later, but they never participated in the daily discussions. The group was the WASP blue blood of Wall Street and was made up of bankers, not brokers, except for the Guggenheims.

This small group, from then on known as "the Bankers' Pool," was the first to attempt to restore order on the New York Stock Exchange. The group committed $125 million to buy stocks initially, split 4/25ths from each participant, except 1/25th from the Guggenheim brothers. Everyone named the stocks he wanted to support, and the orders to buy them were prepared and given to Richard Whitney and Warren B. Nash, Treasurer of the New York Stock Exchange, to execute with full discretion. At midday Richard Whitney strode to the Exchange post for U.S. Steel and bid $205 for 25,000 shares (over $5 million) when it was trading at $195. The Morgan broker was supporting the queen of the Morgan stocks. Whitney moved to place bids at the top of his voice in other stocks, and support bids appeared throughout the list.

The effect was electrifying. The leading stocks had been down 15%–20%, but they now bounced back in leaps of $2 and $5 at a time, just as they had gone down. Professionals, speculators, and coolheaded investors swooped in to capitalize on the return to order. The Dow Jones Industrial Index bounced back 26 points from a low for the day of 272 (down 33) to close at 299 (down 6). Some stocks such as American Can Co., Bethlehem Steel Co., and Kennecott Copper Corp., even gained. Table 1.1 shows the changes that took place in stocks with the largest volumes on the New York Stock Exchange and the Curb Exchange.

There is a sense of order to Black Thursday when the events are put on paper, especially because the support of the Bankers' Pool was a focal point in the day's activities, but the day was in fact totally disorganized. There was mayhem in every market, as brokers and dealers struggled to cope with the volume and investors were frantic to find out what was going on. Volume was 12,894,650 shares on the NYSE and 6,337,415 shares on the Curb Exchange. Each was triple normal volume, and there was a large bond volume on the NYSE as well—$23 million.

Attention focused on the NYSE during Black Thursday, but activity was violent on numerous other exchanges. Volume on the Chicago Stock Exchange exceeded 1 million shares for the first time. The Toronto Stock Exchange and the Montreal Stock Exchange also had record volumes and price declines, the 382,521 share volume on the latter including 153,652 shares of International Nickel and 114,414 shares of Brazilian Traction Light & Power Co., both of which were also listed in New York. Taking advantage of their closer access to

Table 1.1
Prices of Stocks with the Highest Volumes on Thursday, October 24, 1929 (Black Thursday)

NYSE:	Close Wed.	Low Thurs.	Change	Close Thurs.	Change	Volume (shares)
General Motors	\$ 57⅜	\$ 49	\$− 8⅜	\$ 53½	\$− 3⅞	543,900
Radio Corp.	68½	44½	−24	58¼	−10¼	443,700
U.S. Steel	204	193½	−10½	206	+ 2	358,400
Montgomery Ward	83¼	50	−33¼	74	− 9¼	338,700
Anaconda Copper	102	92	−10	102	no change	307,900
Packard Motor Car	20⅞	13½	− 7⅜	18⅝	− 2¼	252,800
Standard Oil (N.J.)	73½	61⅝	−11⅞	68½	− 5	252,300
Commonwealth & Southern	18⅜	13	− 5⅜	16¾	− 1⅝	247,900
International Nickel	47	41	− 6	44½	− 2½	220,200
United Corp.	47	31½	−15½	41⅞	− 5⅛	209,800
Consolidated Gas Co. of N.Y.	121½	108½	−13	118½	− 3	206,300
Bethlehem Steel	101¼	92½	− 8¾	101½	+ ¼	190,800
Sinclair Consolidated Oil	30¼	26½	− 3¾	28⅛	− 1⅛	178,200
Columbia Graphophone	39½	27⅛	−12⅜	35	− 4½	170,500
United Gas Improvement	38¾	30	− 8¾	35½	− 3¼	169,000
Columbia Gas & Electric	97¾	80	−17¾	91½	− 6¼	168,000
IT&T	110¾	79	−31¾	106	− 4¾	160,200
Alleghany Corp.	38	33	− 5	36	− 2	152,800
American Can	154½	137	−17½	157½	+ 3	145,900

Cities Service	59	45	−14	51½	− 7½	1,151,900
American Superpower	36⅞	25	−11⅞	32¾	− 4⅛	315,600
Electric Bond and Share	112½	93	−19½	107½	− 5	296,000
Goldman Sachs Trading Corp.	84½	65	−19½	80	− 4½	170,100
Transamerica	63	62	− 1	62	− 1	142,300
Pennroad Corp.	20	18⅛	− 1⅞	18½	− 1½	139,000
Niagara Hudson Power	18¼	15	− 3¼	17⅛	− 1⅛	112,500

events, New York brokers rushed to buy in both Toronto and Montreal when the turn in prices came in New York. The other exchanges in Boston, Philadelphia, Washington, Baltimore, San Francisco, Los Angeles, and Spokane also set trading records. In London, pandemonium dominated a rain-soaked Shorters Court, where Anglo-American securities dealers met after the close of the London Stock Exchange at 4:00 p.m. to follow and trade their stocks based on New York prices. There was an uproar until well after dark.

Chaos reigned in the commodities exchanges as prices broke there, partly in sympathy with stock prices and partly because stock speculators sold out commodity positions to protect their capital for stocks. In Winnipeg, December wheat dropped to a low of $1.25 per bushel, down 12 1/2¢. In Chicago, corn dropped to a low of 88¢ per bushel, down 2 3/8¢. There were wild scenes in the commodities pits as traders struggled to cope with the record volume. Orders to sell 500,000 bushels of wheat were frequent during the morning. Rumors distorted everyone's perspective. Arthur W. Cutten, the leading bull in the press lexicon of speculators, was reported to have sold 10 million bushels of wheat in Winnipeg from a long position. As in stocks, money was to be made in the upturn after the Bankers' Pool came into the stock market, and the scramble to buy, or to cover short sales, continued just as in the early scramble to sell. Wheat closed the day down 4 1/2¢ for December deliveries; corn closed up 1 1/4¢ at 91 5/8¢ per bushel.

The Federal Reserve Board searched for some wise and statesmanlike act it could undertake to preserve orderly markets, which was one of its responsibilities, but it was as disorganized as Wall Street, for it relied on secondary sources, such as bankers and the New York Federal Reserve Bank, for information about the markets at a time when these sources had troubles and responsibilities of their own to attend to. At one point in the day the Federal Reserve apparently told Thomas Lamont of J. P. Morgan & Co. that it would cut the discount rate. Lamont passed this news on to reporters, but it was rescinded, if it was ever intended, and Lamont denied mentioning it. The most the Federal Reserve could do was blame the break on "speculation" and welcome its demise.

The Bankers' Pool was no better organized than other people. At the first meeting no organized support was decided on. Each person selected stocks, and orders were placed for them across the board. The amount of money to be spent was not clarified, nor was the sharing of liabilities. No one in the group knew what prices were as they met.

Some of the participants must have been as worried about their personal affairs as they were about the general market. Richard Whitney, almost bankrupt from injudicious stock investments and high living, had previously prevailed on his brother George, and others outside the meeting, for loans exceeding $1.25 million.[2] Charles E. Mitchell was worried about his merger with the Corn Exchange Bank because the market price of National City Bank of New York stock fell below $400 during the break. Below $400, Corn Exchange Bank stockholders could demand $360 per share, cash, rather than 9/10ths of a share of National

City Bank, and National City Bank would be faced with paying substantially more than the market value of Corn Exchange Bank stock or calling off the deal. On Monday, October 28th, Mitchell obtained from J. P. Morgan & Co. a personal loan of $12 million to support National City Bank stock in the Over-the-Counter market.

The Bankers' Pool met again in the afternoon, following the 3:30 close of the NYSE, and formalized the support effort with each bank participant committing $20 million. The members agreed to meet daily. J. P. Morgan & Co. was appointed to manage the pool, setting the prices to be bid and the amounts. Prices were stepped down in stages in order to fill what Thomas W. Lamont first described to the press as "air holes" in the market, a euphemism for no bids. Morgan narrowed the stocks for which they would bid to the stocks listed in Table 1.2. The next day, the Guggenheims offered to join the Pool, and shortly thereafter commitments were increased to $40 million from each member, except for $10 million from the Guggenheims.

In addition to the stocks in Table 1.2, Black Thursday buying by the Pool included Alleghany Corp., Allied Chemical & Dye Corp., the Chesapeake Corp., Columbia Graphophone Co., International Nickel Co. of Canada, Du Pont, Johns-Manville Corp., The Pennsylvania Railroad Co., Public Service Corp. of New Jersey, Southern Pacific Co., Southern Railway Co., The Texas Corp. (later Texaco), Union Pacific Railroad Co., United Aircraft, The United Gas Improvement Co., and Western Union Telegraph Co., but these companies were dropped from the list in buying on subsequent days.

At the end of Black Thursday, a second organized effort to help the market was begun. Some 35 leading brokers accounting for 70% of NYSE business assembled at the offices of Hornblower & Weeks and agreed that the worst was over and that they should act to reassure their customers. In the *New York Times* the next day, they sponsored a full-page recommendation that the public buy stocks—the largest of many such brokerage recommendations that traced a baneful history until the mid-1930s, when pessimism took full root and recommendations ceased to be published where they were easily recorded.

On Friday, October 25th, the stock market was steady. President Hoover told the nation: "The fundamental business of the country, that is production and distribution of commodities, is on a sound and prosperous basis." He recognized that the stock market drop was critical enough that the nation needed presidential reassurance. Early Friday, stock prices were strong, and the Bankers' Pool was able to sell some of its Thursday purchases. Prices were weaker later in the day, and the Pool had to support some stocks again. Some odd-lot buying began—anxious, but late, to take advantage of yesterday's bargains. The Dow Jones Industrial Index closed at 301, up almost 2 points from its recovery level on Black Thursday. Volume was 5.9 million shares, and the tape was late 1 hour and 34 minutes at the close.

Saturday's volume of 2 million shares was normal for the half day of trading. Prices had an even tone. The Dow Jones Industrial Index was down 2, but there

Table 1.2
Stocks Bought by the Bankers' Pool, October 24–November 11, 1929

	Shares	Average Price	Cost
American Can	106,200	$122.854	$ 13,047,100
American Smelting & Refining	17,100	76.957	1,315,970
AT&T	71,400	232.313	16,586,805
Anaconda Copper	76,200	85.488	6,514,215
Atchison, Topeka & Santa Fe Ry.	15,000	239.316	3,589,750
Baltimore and Ohio R.R.	10,000	118.540	1,185,400
Bethlehem Steel	12,700	101.852	1,293,525
Columbia Gas and Electric	60,000	66.940	4,016,425
Consolidated Gas Co. of N.Y.	88,700	104.407	9,260,940
General Electric	66,600	238.769	15,902,050
General Motors	54,000	43.940	2,372,788
Great Northern Ry. (pfd.)	13,400	100.973	1,353,050
IT&T	92,400	78.423	7,246,290
Kennecott Copper	32,300	60.720	1,961,278
Montgomery Ward	47,100	60.487	2,848,943
N.Y. Central R.R.	25,900	182.698	4,731,900
Radio Corp.	27,000	48.123	1,299,325
Sears Roebuck	28,269	105.705	2,988,200
Standard Oil (N.J.)	27,000	59.471	1,605,725
U.S. Steel	148,400	182.450	27,075,700
Westinghouse	18,400	155.828	2,867,250
Total	1,038,069		$129,062,629

Source: Stock Exchange Practices, part 1, p. 283.

were no dramatic gains or losses. There was a general view that the speculators had received their just due and that the Crash would not hurt business, except for a few luxuries and the Christmas trade. The brokers' weekend letters were mostly optimistic, except for a few small, cautious firms such as Chisolm & Chapman, Morrison & Townsend, and Wade Bros. & Co., names now unknown. Presidents James A. Farrell and Charles Schwab of U.S. Steel and Bethlehem Steel Co. deplored the pessimism they found in so many circles and told the assembled general meeting of the American Iron & Steel Institute at New York's Commodore Hotel that the steel industry was operating at 110% of capacity, that prices were stable, and that inventories were reasonable.

Brokers worked Saturday afternoon and Sunday to clear trades for the week, to balance accounts, and to send out margin calls on accounts which had been weakened. The financial district was active long into the night. Many workers rented rooms in town, and there were high spirits at the overtime pay and the excitement of seeing high stakes played.

A dark note in the two days of calm was the sudden activity in the credit markets. Bankers acceptance rates were cut by 1/8% for the third time in three days, to 4 3/4%, and foreign banks were reported switching out of brokers call loans and buying bankers acceptances. Prices were bid up for U.S. government and high grade railroad bonds. Suddenly there was wide agreement among brokers that the boom conditions of 1928–29 were over. London dealers were very pessimistic, as was Alexander Dana Noyes of the *New York Times*, who had been predicting a bust for months. Bond men suddenly looked forward to the first good bond market in over a year and predicted that call loan money would start to come into the bond market. Those knowledgeable about the heavy out-of-town lending to the $8 billion call loan market to carry stocks were concerned that an abrupt shift might indeed be made to other lending instruments.

Stocks opened weak on Monday morning. U.S. Steel opened off $1 1/4, International Telephone & Telegraph Corp. (IT&T) off $3, General Electric Co. off $7 1/2. Within minutes, U.S. Steel broke through $200, and during the day it touched $185; it closed at $186, off $17 1/2, and was the second most active stock. The volume leaders sank 10%–25%, dropping $1 and $2 in a single trade. Stocks closed near their lows for the day. The Dow Jones Industrial Index dropped 38 to 260, the largest drop on record. Volume was 9.2 million shares, and the NYSE tape was almost three hours late at the close. The *New York Times* described the day with full capital letters in its front page headline:

STOCK PRICES SLUMP $14,000,000,000 IN NATIONWIDE STAMPEDE TO UNLOAD.

The day's trading in the most active stocks on the NYSE is shown in Table 1.3.

The decline on the Curb Exchange was led by utilities. One, Middle West Utilities Co., closed with no bid or ask quotes. Table 1.4 shows Curb trading of the most active stocks on October 28th. Bank stocks dropped 10%–15% in the Over-the-Counter market.

Margin calls over the weekend were a substantial factor in the decline. Foreigners were also heavy sellers, partly because the London bankruptcy of Clarence Hatry's miscellany of financial enterprises was freezing funds there, but also because the end of the U.S. boom was clearer to foreign investors. Foreign exchange markets were active all day as foreigners repatriated funds.

Much of the selling came from brokers who suddenly had their loans called by corporate lenders who panicked when the Exchange announced that call loans for the prior week were up $15 million. Wall Street had expected a decline in call loans because of the heavy liquidation of stocks during the week. Brokers appealed to the New York banks to replace the called loans. The Bankers' Pool met and resolved to replace part of the called loans. The Federal Reserve Bank of New York bought $25 million in U.S. securities to inject funds into the

Table 1.3
Most Active Stocks on the NYSE, October 28, 1929

	High	Low	Last	Change	Volume (shares)
Radio Corp.	$ 58	$ 39¾	$ 40¼	$ − 18⅜	342,500
U.S. Steel	202½	185	186	− 17½	285,800
Montgomery Ward	72¼	58½	59½	− 15⅜	197,100
Commonwealth & Southern	18¼	15	15	− 3⅛	180,400
Anaconda Copper	102½	92	93½	− 9	162,300
Packard Motor Car	21¾	18	18	− 18½	157,900
Consolidated Gas Co. of N.Y.	116	97	97¼	− 20	157,900
United Corp.	48	46	46	− 1¾	150,800
International Nickel	45⅛	37⅝	38	− 7⅞	144,900
Columbia Gas & Electric	91½	70	70¾	− 22	140,500
Transcontinental Oil	9½	7	8	− 1½	121,700
American Radiator	38	28	28	− 10⅜	116,600
IT&T	100	85	88	− 15	110,700
Alleghany Corp.	36	29	29⅛	− 7½	100,600
Bethlehem Steel	102⅝	94	94⅛	− 9⅜	93,900
Chrysler Corp.	44½	38⅛	40	− 5	93,900

Table 1.4
Most Active Stocks on the Curb Exchange, October 28, 1929

	High	Low	Last	Change	Volume (shares)
Cities Service	$ 46⅛	$27	$27⅛	$ − 18¾	976,800
Electric Bond and Share	105⅞	85	85	− 22⅛	189,300
American Superpower	35¼	25⅛	25⅛	− 10½	101,000
Transamerica (new)	62⅞	62¾	62⅛	− ⅞	84,300
Arkansas Natural Gas A	15	7	8⅞	− 6⅜	77,400
Middle West Utilities (new)	33¼	25⅜	27	− 7½	66,400
Niagara Hudson Power	18⅞	16¼	16¼	− 2½	60,100

banking system so the banks could increase their call loans. The Bankers' Pool did not put in significant bids for stocks in this decline, because the group did not consider its purpose to be to prop up prices, as Lamont and Whitney told the press. There were bids available throughout the day.

On Monday night, margin calls were enormous, and heavy Dutch and German selling came in overnight for the Tuesday morning opening. On Tuesday morning, out-of-town banks and corporations called $150 million of call loans, and Wall Street was in a panic before the Exchange opened. The Federal Reserve Board was in session at 10:00 a.m. when the Exchange opened, and stayed in session until 4:00 p.m. Andrew Mellon, Secretary of the Treasury, chaired the meeting from the start. At the Exchange opening 630,000 shares traded in 26 blocks. In the first 30 minutes, a normal day's trading of 3 million shares was completed. The *New York Times* described the day as the "most demoralized conditions of trading in the history of the Stock Exchange and the Curb." The Federal Farm Board offered loans of $100 million on wheat stocks to try to stem the spread of panic to the commodities pits. A record volume of 16.4 million shares traded during the day. At one time, the Dow Jones Industrial Index was down 48 points and it closed down 30 points at 230.

The *New York Times* attributed the sudden decline in values to several immediate causes: the Massachusetts Public Utility Commission had refused permission to Boston Edison to split its stock because it was too high, the Hatry bankruptcy in London was causing foreign liquidation, and a pool had been caught seriously long in Combustion Engineering stock when it skipped its dividend. These causes pale in comparison with the decline in values, however.

The combined decline in the Dow Jones Industrial Index for Monday and Tuesday was 60 points, or 20%. Leading stocks were down 20%–30%. Numerous stocks were down 40%–50%. Tuesday's results were worse on the Curb Exchange. Utility and investment trust stocks were decimated. Cities Service again traded over 1 million shares and dropped as low as $20, having traded at $46 only two days before. A. P. Giannini removed the support bid for Transamerica Corp. at $62, and the stock dropped to $20 1/4 before it recovered to close at $38 7/8. Transamerica traded over 600,000 shares in the two days, and Giannini bought so much of it in sister corporations to support the stock that he was later ousted as Chairman.

The Curb volume leaders were off 30%–40% at their lows from Monday's close. After a slight recovery before the market closed, Curb stocks were down one-third for the two days. Table 1.5 outlines the staggering losses incurred over the two days for the most active stocks on both exchanges.

The leading bank and trust company stocks dropped so fast in the Over-the-Counter market that all other Over-the-Counter stocks were ignored. National City Bank of New York dropped $155 to $300, despite Charles E. Mitchell's buying support with his Morgan loan. First National Bank of New York dropped $1,600 to $5,200, Chase National Bank dropped $53 to $135, Bankers Trust Co. dropped $40 to $130, Equitable Trust Co. dropped $135 to $425, and

Table 1.5
Trading in Most Active Stocks, October 28 and 29, 1929

NYSE	10/28/29 close	10/28/29 decline	10/29/29 close	2-day decline	2-day volume (shares)
General Motors	$ 47½	$ 6¾	$ 40	$14½	1,355,600
International Nickel	38	7⅞	31	14⅞	814,517[a]
Radio Corp.	40¼	18⅜	38½	20⅛	694,700
U.S. Steel	186	17½	174	29½	593,100
Anaconda Copper	93½	9	85	17½	548,700
Commonwealth & Southern	15	2¼	12¼	5	504,600
Standard Oil (N.J.)	64¾	8	51¾	15	450,200
Packard Motor Car	18	3⅝	16¼	5⅜	448,200
United Corp.	33½	8¾	25¾	16½	427,100
Alleghany Corp.	29⅛	7½	20⅝	16	324,700
IT&T	88	15	71	32	302,000
Consolidated Gas Co. of N.Y.	97¾	20	91½	25¾	287,500
Union Carbide	84	20	73	31	276,800
General Electric	250	47½	222	75½	230,400
AT&T	232	34	204	62	218,600
E. I. Du Pont	150⅛	16⅜	116	50½	135,900
N.Y. Central R.R.	186	22⅝	189½	19⅛	123,300
Pennsylvania R.R.	90	6½	82	14½	103,100

Cities Service	27½	18¾	22½	23¾	2,082,700
Transamerica	62⅛	⅞	38⅞	24½	653,000
Electric Bond and Share	85	22⅛	59½	47⅜	638,800
American Superpower	25⅛	10½	19	17	482,300
Middle West Utilities	27	7½	18½	16	471,050[b]
Niagara Hudson Power	16¼	2½	13	5¾	243,900
Adams Express	30	7¾	25	12¾	214,600
Goldman Sachs Trading Corp.	60	16	35⅛	40⅞	205,900
Standard Oil (Ind.)	51½	4	47¾	8⅛	198,800
United Light & Power A	28	8	24⅞	11⅛	176,800

[a] Includes volume on Toronto and Montreal stock exchanges.
[b] Includes volume on Chicago Stock Exchange.

Guaranty Trust Co. of New York dropped $120 to $580. The bankers in the Pool witnessed both the shredding of the financial structure they led and the rapid decline of their own fortunes, for they all held substantial interests in their own banks.

The Bankers' Pool met at 12:00 noon on Tuesday, October 29th. Owen D. Young, Chairman of General Electric Co. and a director of the New York Federal Reserve Bank, joined the group, as did Chellis Austin, President of the Equitable Trust Co. (the Rockefeller bank). Shortly thereafter the leading banks announced that margin requirements for their loans were reduced to 25%. Many brokers also dropped their requirements to 25%, some even to 10%. However, it was the banks whose action was most important in this respect because the liquidation of call loans was forcing borrowers to the banks for loans.

Opportunistic buying came into the market on this second day of liquidation and restored some order to the decline. Stocks ticked up at various points during the day before they resumed their decline. Other forces of order began to marshal spontaneously. John J. Raskob announced that he was buying stocks again after staying out of the market for several months. U.S. Steel and American Can declared extra dividends of $1.00 on their stocks, to pay $8.00 and $5.00 respectively. U.S. Steel also announced September nine-month earnings of $15.82 per share compared to $8.17 for the same period in 1928. Julius Rosenwald, Chairman of Sears, Roebuck & Co., guaranteed the stock accounts of his 40,000 employees, irrespective of the stocks they held, to save many from forced liquidation. Samuel Insull, the Chicago utility baron, guaranteed his employees' stock loans the next day. Albert Conway, New York State Superintendent of Insurance, exhorted the casualty insurance companies to buy common stocks and met with the presidents of Prudential Life, Mutual Life, New York Life, and Equitable Insurance to discuss what support they could give the stock market. He undertook to request a change in the New York State law which forbade life insurance companies to buy common stocks.

Some members of the Bankers' Pool strongly favored closing the NYSE but could not carry the group. As it was, the market rallied in the last 15 minutes, buoyed by the converging forces mentioned above, support bids from the Bankers' Pool, and the attraction of many stock yields which had previously been 1% or 2% and now exceeded bond yields. American Can rallied $10 in the last 15 minutes. U.S. Steel rallied $7 1/2, General Electric $12, New York Central Railroad $14 1/2, Anaconda Copper $9 1/8, Chrysler Corp. $5 1/4, Montgomery Ward $4 1/4, and Johns Manville Corp. $8. The NYSE ticker tape finished at 5:32 p.m., the Curb tape at 6:17. As the brokerage clerks worked on, orders began to come in.

On Wednesday morning, October 30th, the stock market opened strong. U.S. Steel was up $3, AT&T up $6 1/8, The North American Co. up $10, Westinghouse Electric & Manufacturing Co. up $4, Cities Service up $1 7/8, and Electric Bond & Share up $10 5/8. American Tobacco Co., Bon Ami, Dictaphone, and National Supply Co. declared extra dividends during the day. At John D. Rockefeller's announcement that he and his sons were acquiring selective common stocks, a surge of public buying came into the market. Investment trusts were heavy buyers. Odd-lot buyers outnumbered odd-lot sellers two to one. Odd-lot volume was 6 million shares over and above the NYSE volume of 10.7 million shares. The tape was over one hour late all day. The Dow Jones Industrial Index was up 28 points to 258. Cotton closed up $1, wheat up 3 1/2–4 1/8¢, and rubber up 10¢–20¢ in sympathy with stocks. Leading stocks closed the day with gains of 15%–20%. (See Table 1.6.)

The NYSE announced after the close that trading on Thursday, October 31st, would begin at noon and that the Exchange would close on Friday and Saturday to catch up on paperwork. There had been opposition to closing the NYSE in the midst of the liquidation because it would have been an admission that its leaders could not cope with the panic. Everyone welcomed the closing now that the market had moved up.

Several bullish events occurred on Thursday morning before the noon opening. The Federal Reserve Bank of New York cut its discount rate from 6% to 5% in coordination with the Bank of England, which cut its bank rate from 6 1/2% to 6%. The *New York Times* called the latter a "gesture of reassurance to America." It was the first positive reaction of public authorities to the crisis of confidence created by the Crash. The Federal Reserve also announced that call loans were down $1.1 billion for the week that ended Wednesday.

The announcements stimulated strong buying when the Exchange opened. Some 2 1/2 million shares traded in the first half hour. Volume for the abbreviated 3 1/2-hour day was 7 million shares. The Dow Jones Industrial Index was up 15 points for the day to 273. Odd-lot purchases were estimated at 4 to 5 million shares. There was generally broad public buying, supported by investment trusts and brokers trying to share in the bargains. There was a rash of dividend declarations during the day. Extras were declared by Consolidated Gas Co. of New York, Standard Oil Co. of New Jersey, New Jersey Zinc Co., Yale & Towne Mfg. Co., U.S. Dairy Products Corp., Warner Bros. Pictures, Inc., and Claude Neon Co. Initial dividends were declared by Bulova Watch Co., United Carbon Co., F&W Grant 5–10–25 Cent Stores, Inc., and National Public Service Corp. Marmon Motors Corp. declared its dividend ahead of time, and Best Products Co. promised an increase when it took dividend action the next month. Corporations fought the confidence crisis in stocks the best way they knew.

The Bankers' Pool did not intervene in the market during the day, nor did it even meet. Prices were up 10% for many of the most active stocks, such as Anaconda Copper Mining Co., Commercial Solvents, Commonwealth & Southern Corp., Consolidated Gas Co. of New York, Montgomery Ward Co., United Corp., and United Gas Improvement Co. Only General Motors was down, among the ten most active, and on the NYSE, in general, only the thinly traded stocks were down. The market closed for the next three days with confidence. Much was made of the fact that no NYSE member firm had been suspended in the crisis. The brokerage community worked from Friday to Sunday to clear orders

Table 1.6
Most Active Stocks, Wednesday, October 30, 1929

NYSE	High	Low	Last	Change	Volume (shares)
General Motors	$ 49⅞	$40	$ 49¾	$+ 9¾	414,700
International Nickel	38	32	38	+ 7	237,100
Commonwealth & Southern	16⅞	11¾	15	+ 2¾	221,200
Standard Oil (N.J.)	65⅝	57	65⅜	+ 7⅞	201,300
Anaconda Copper	95	85	95	+ 10	186,700
United Corp.	34	26	33	+ 7¼	184,400
Packard Motor Car	19½	16	19½	+ 3¼	182,900
Radio Corp.	46	38½	45⅞	+ 7⅜	180,700
United Gas Improvement	33¾	27	33⅛	+ 6⅛	163,600
Montgomery Ward	67	55	66	+ 12¼	146,100
Standard Brands	29	24⅞	29	+ 5	132,600
Commercial Solvents	32½	25⅛	31⅞	+ 7⅞	131,700
Consolidated Gas Co. of N.Y.	100¾	92¾	100	+ 8½	130,900
IT&T	84⅝	72	84	+ 13	125,000
Sinclair Consolidated Oil	28	23½	28	+ 4	124,000
Alleghany Corp.	29	22½	28	+ 7⅜	122,200
Warner Bros.	39	32	38¾	− 5¼	117,800
P. Lorillard	17	14⅞	17	+ 2	113,900
Kennecott Copper	74⅞	76	74⅝	+ 8⅞	110,400
Bethlehem Steel	96¼	86⅛	94¾	+ 10¾	109,300

Electric Bond and Share	80	67	79⅞	+20⅜	202,000
Cities Service	32	23⅝	32	+ 9½	193,700
American Superpower	26	20	26	+ 7	142,955
Niagara Hudson Power	16½	12⅛	15⅝	+ 2⅝	110,120
Commonwealth & Southern Wts.	5	4⅛	5	+ 1⅛	108,400
Transamerica	49¼	37⅛	47	+ 8⅛	106,900

and paperwork, despite that the exchanges were closed. Brokers reported during the three days that "buy" orders were voluminous, and there was talk of a reviving bull market.

The desire to talk the market up was intense, but the three days with the NYSE closed gave investors considerable time to think. The very nature of the rally on Wednesday and Thursday threw doubt on whether it could be sustained. Volume was too high, and the pace was too hectic. An odd-lot volume of 3 to 4 million shares was unsustainable, and stories of brokers opening thousands of new accounts suggested that this odd-lot volume was unsophisticated and speculative. The investment trusts bought heavily in the week and were rumored to have exhausted their cash reserves. This industry had been expected to provide a base for the stock market, employing its $3.25 billion[3] in assets to buy stocks whenever they dropped unreasonably low. The market insinuated that the trusts had troubles of their own, however, for most of their stocks sold at a discount from the per share "break-up" value of their portfolios. Other industries were also in trouble. The Foshay Companies, an amalgam of utilities headquartered in Minneapolis and selling securities directly to the public, were ordered into bankruptcy. The brokerage industry too had its first failures during the week. Two members of the Curb failed, one in Boston and one in Wisconsin.

If stocks were going to be strong on Monday, it looked like a good market into which to sell, which is what happened. There was a stampede to unload when the NYSE opened on Monday, November 4th. The decline continued all day. U.S. Steel was off $9 3/4 to $183 1/2 on 108,700 shares. The Dow Jones Industrial Index was down 15 points to 257. Volume was over 6 million shares in the three hours on Monday, and a record 976 issues were traded. Trading was orderly, however, with reasonably close bids available all day. The NYSE announced that sessions would be cut to three hours a day for the week, with closings at 1:00 p.m.

On Tuesday the exchanges were closed for Armistice Day, but on Wednesday, November 6th, the stock markets opened with heavy selling. U.S. Steel was off $2 1/4 to $181 1/4 on the opening. During the day, it plunged to $165, as sellers desperately looked for the Bankers' Pool to support the stock. U.S. Steel closed at $169, off $14 1/2. The Dow Jones Industrial Index for Wednesday closed down 25 points at 231. NYSE volume was 5.9 million shares. The Bankers' Pool did not meet and was not in the market. Stocks were generally off 10%–15%.

Utility stocks on the Curb Exchange were off 15%–20%. Some of the less active stocks were off 30%. Bank stocks dropped 10%–20% in the Over-the-Counter market, and the National City Bank and Corn Exchange Bank called off their merger. Wheat trading in the Chicago grain pits verged on panic.

The sale at public auction of 189,760 shares of Webster-Eisenlohr & Co., one of the largest U.S. cigar companies, illustrated the disarray in the stock market. The stock was auctioned at $2 1/8, when the last NYSE sale had been $7 1/8. The $2 1/8 price represented a paper loss in excess of $21 million for the block from the stock's high price in 1929. Rumors said the block was from the estate of Anthony Schneider, President, who died on October 30th in a fall from his apartment window. The block represented 41% of the outstanding shares.

The next day, Thursday, November 7th, the stock market opened demoralized. Volume in the first half hour was 2.4 million shares, and the NYSE tape was late from the opening. The Dow Jones Industrial Index was down 14 points at the low before noon. Trading ceased to be orderly. J. P. Morgan & Co. thereupon placed bids in a number of stocks, acting on its own discretion, for no meeting of Bankers' Pool members was held Thursday. At that point the market rallied. Volume for the day was 7.2 million shares, and the NYSE tape finished two hours late. Stocks ended the day with small gains. The Dow Jones Industrial Index was up 6 points from Wednesday.

On Friday, November 8th, the stock market was quiet. Close bids were available all day. Volume on the NYSE was only 3.2 million shares; on the Curb Exchange it was 1.3 million shares. The Dow Jones Industrial Index was down 1 point, but the Dow Jones Rail Index was up 0.47. Even though the *New York Times* announced on Saturday, November 9th, in its headline that trading was back to normal, three-hour trading sessions were ordered for the next week. The exchanges were closed on Saturday.

This third week of liquidation again took a heavy toll of stock values. The leading stocks on the NYSE that traded over 100,000 shares during the week were mostly off 10%–15%. A few were off 20%. Utilities led the declines. Despite the decline, brokers and bankers also felt that trading had returned to normal. New York bank and industrial leaders took Friday afternoon off to play golf. The Federal Reserve Board announced that Federal Reserve district surveys of member banks indicated bright business prospects for the holiday season. Only a slight recession, concentrated in the luxury markets, was expected.

The weekend papers also carried the news that James J. Riordan, President of the County Trust Co. and an intimate of Al Smith, had committed suicide because of stock losses. Riordan had died on Friday, but John J. Raskob, one of the leading political and business powers of the period and a member of the board, prevailed on the media to keep the suicide quiet while he strove to prevent a run on the bank Saturday morning. Over the weekend outside auditors were called in to make an immediate audit of County Trust's assets, which were found to be sound. Riordan's stock losses had been personal. Raskob assumed temporary chairmanship of the bank, rallied a group of directors, including Al Smith, to buy 3,800 shares to support County Trust's stock in the market on Monday, and arranged a loan for the group at Bankers Trust Co., where he was a director. They subsequently bought 2,564 shares. Four years later, when Raskob explained his actions to the Senate Committee on Banking and Currency, the group still owned all its shares with a book loss of over $300,000 on an investment of $649,000.[4]

Salvaging the reputation of County Trust was particularly important at this time. Fear was pervasive that a run on the banks might follow the stock panic. There had already been two small bank failures in Germany. Bankers and brokers in Brussels were in serious trouble because European stocks had followed Wall Street down. The principal source of optimism that the economy might not follow the stock market into a depression rested on the absence of a credit panic and the strong loan and capital positions of the commercial banks. A trade depression had never occurred in the United States without being preceded by a banking crisis.

The market opened on Monday, November 11th, in a state of apprehension. The expected sharp sell-off did not materialize, however, as the market was orderly with only slight selling on balance. The Bankers' Pool saw no need to intervene. Volume was light up to the last hour, when heavy selling suddenly materialized. U.S. Steel dropped to a new low of $159 1/2, down $11. General Electric and New York Central Railroad hit lows for the year. Still, the volume was not large—3.4 million shares for the session. The selling was a mystery to brokers, since the decline appeared to be the result of prices fading away as bids were hit rather than to heavy selling pressures. The Dow Jones Industrial Index closed off 16 points at 220.

The cumulative impact of the decline in stock prices began to awaken concern in the Hoover Administration and at the New York Federal Reserve. Initially, both had blamed the decline on excessive speculation and had said that the economy would be better off if speculation was squeezed out. Treasury officials now leaked word that a tax cut was being studied to restore confidence.

On Tuesday, November 12th, Governor George L. Harrison from the New York Federal Reserve Bank met with Treasury Secretary Mellon to discuss the stock market. Liquidation began again as they met. U.S. Steel hit a low of $152 1/4, off $7. Other high-quality stocks joined the decline. Volume exceeded 6.4 million shares in the three hours. When the NYSE closed at 1:00 p.m. the Dow Jones Industrial Index was down 10 points. The commodities markets raged out of control. Wheat futures were off 6 3/8¢ to 6 5/8¢, depending on the delivery month. A number of bankers in the Bankers' Pool wanted to close the NYSE. Lamont was expected to make a public statement in that respect on behalf of the Bankers' Pool but then cancelled the press conference. Nobody seemed to be in control of events. New York City banks admitted that they were selling out weak accounts.

On Wednesday, November 13th, stocks opened down again. Trading was orderly, however, as bids were close, and there were intermittent rallies in prices. Support was organized for individual stocks beyond the Bankers' Pool, but sales broke the bids. A pool supported American Can, one of the leading stocks of the period, but it closed down $10 at $86. Volume for the day was large—7.8 million shares—and the Dow Jones Industrial Index closed down 11 points at 198; but the forces of recovery were marshalled together for the first time this Wednesday, November 13th. John D. Rockefeller placed a bid for 1 million shares of Standard Oil (N.J.) at \$50, down \$33 from its 1929 high of \$83. The New York Stock Exchange called for detailed information from its members on the stock they had borrowed for their own account and those of others. It was widely discussed that the information would be used to discourage short sales. After the close, Treasury Secretary Mellon announced that the United States would reduce corporate and individual income taxes by 1%, equivalent to \$160 million, to stimulate confidence and business. He projected that the federal government would still have a budget surplus in fiscal years 1930 and 1931. The proposal received bipartisan support in both houses of Congress.

On Thursday morning, Standard Oil of New Jersey opened at \$59 on 40,000 shares, up \$8 1/4. U.S. Steel opened at \$155, up \$3 1/2. Odd-lot business was normal and on the buy side. General Motors announced a dividend extra of 30¢ per share. Standard Oil Co. of Kansas announced that it would resume paying common dividends. During the morning, the New York Federal Reserve Bank announced a second cut in its discount rate from 5% to 4 1/2%. The Federal Reserve said that the readjustment from abnormal credit conditions was completed. Many agreed. The market closed up 18 points. Volume was 5.6 million shares.

This Thursday, November 14, 1929, marked the end of the Crash. Few realized it was over. Those who thought it might be over could place no confidence in their judgment after having been teased and betrayed by one- or two-day recoveries during the Crash. However, it was the end, exactly three weeks after Black Thursday, October 24th.

Within the next five days, the stock market moved up to 248 on the Dow Jones Industrial Index, an improvement of 25% from the closing low in the Crash of 198 on November 13th. In the first week of December, stocks sprinted further to 263 points on the Dow Jones Industrial Index, the high for the month. This December high was still down roughly 100 points from the pre-Crash level, however. Stocks closed the year at 248. Daily volume dropped back to around 3 million shares for the last two weeks of November and averaged 3 1/2 million shares in December. Everyone, including Dana Noyes at the *New York Times*, agreed that the previous selling had been overdone.

Aggressive businessmen resumed their expansion plans. Samuel Insull made several small utility acquisitions in December 1929. Public Utility Holding Corp. of America acquired Portland Gas & Electric Co. U.S. Steel acquired Atlas Portland Cement Co. United Gas Improvement Co. acquired Magnolia Petroleum. The \$350 million merger to create Republic Steel was closed on December 18th.

The speculators resumed their past activities, as well. Albert Wiggin, Chairman of the Chase National Bank, reinvested heavily in stocks to his later public regret. William Durant created a new pool in Radio Corp. of America stock. Harley Clarke, Chairman of General Theatres Equipment, Inc., organized a new pool in his own company's 6% convertible debentures with Chase Securities

Co., Pynchon & Co., West & Co., and W. S. Hammons. Pynchon, West, and Hammons were broken by the pool, and Harley Clarke and Chase Securities were ultimately discredited.

TECHNICAL FACTORS BEHIND THE CRASH

How great was speculation in 1929? Many of the best indications of the extremes to which speculation was carried are found in the technical details of the brokerage business. The excesses developing in the stock market were quite clear in this respect in 1929 before the Crash. Daily trading volume on the NYSE in the first 9 1/2 months of 1929 averaged 4.1 million shares, as compared with 3 1/2 million shares in 1928 and 1.7 million shares as recently as 1925. Curb Exchange volume for the year of 476 million shares exceeded 40% of the NYSE's 1.125 billion shares. As recently as 1927, Curb volume was only 125 million shares.

Trading volume relative to outstanding shares assumed unusual proportions. Up to October 15, 1929, over 872 million shares traded—approximately 90% of all shares listed. The trading volume of 1.125 billion shares for the year as a whole exceeded the 1 billion shares listed. This average turnover of more than once per year per share compares with an average of only one-third of all shares per year in 1980. Exchange listings of new issues, reflecting the trading fever, rose almost 100 issues in 1929 to 842 issues.[5]

The brokerage industry had expanded substantially with this volume. NYSE members established 599 new branch offices in 1928 and 1929 combined, for a total of 1,658 offices. In 1925, member firms had only 706 offices, and the trend was for the number to decline slightly.[6] The boom in stock volume sent the price of NYSE seats skyrocketing. A top price of $625,000 was paid for a seat in 1929, up from a range of $290,000 to $595,000 in 1928 and a low of $99,000 in 1925.[7] Curb seats sold at a peak price of $254,000.

Brokers fueled the rapid expansion of their business in a classic fashion—by offering easy credit terms and building large inventories. Margin trading, as the credit was called, expanded to serve both large and small traders. Small investors could borrow up to 75% of the value of stock they bought. Large investors had to put up as little as 10% and in some cases opened trading accounts like charge accounts to be settled periodically with no margin requirement at all. The volume of call loans, which were used to finance brokers' margin loans and their inventories of stocks and bonds, expanded from $4.4 billion on January 1st, 1928, to $8.5 billion on October 1, 1929. These borrowings represented 9.8% of the value of all NYSE stocks on October 1, 1929. This ratio had been relatively constant from 1926 to 1929, despite a 180% expansion in call loans during the period, which for some observers obscured the importance of the growth in call loans.[8] Banks expanded their loans on securities to nonbrokers as well. Securities loans of all member banks to others than brokers were $5.8 billion on October 3, 1928, and $7.2 billion by October 4, 1929.[9]

Brokers loans and bank loans directly to investors peaked at a combined total of \$15.7 billion in early October 1929. This total represented 18% of the value of all listed stocks at the time, an enormous proportion to be held on credit.[10]

Small investors and sophisticated financial professionals were both caught up in the speculative mania. Savings bank deposits in the first half of 1929 declined \$195 million for the first decline in 20 years as small investors directed savings into the stock market. Normally sober investors, such as J. P. Morgan & Co. partners, were tempted into pools to trade stocks.[11] Walter P. Chrysler even organized a pool with Goldman, Sachs & Co. and Bache & Co. in his own company's stock.[12]

Common stock issues were a record \$5 billion, and most corporate debt and preferred stock issues had equity "kickers." Initial public offerings abounded in this atmosphere, and brokers indulged the temptation to scalp an overwilling public. For example, General Theatres Equipment was capitalized at over \$40 million in its initial public offering, compared with historic asset costs of less than \$4 million.[13] The company's initial 500,000-share public offering piled greed on greed, for the stock price was marked up from \$20 per share to \$32 per share between the managers and the selling group.[14]

Albert H. Wiggin had a reasonably accurate description of the market's tenor, although it was not appreciated much by the Senate Committee on Banking and Currency investigating stock exchange practices:

MR. WIGGIN: I think the market was a God-given market.

MR. PECORA: What is that?

MR. WIGGIN: I think it was a God-given market.

SENATOR ADAMS: Are you sure as to the source?

MR. WIGGIN: No, sir.

MR. PECORA: God-given market, did you say?

SENATOR COUZENS: That is a new one.

MR. PECORA: Was it "God-given" because the price of the stock [Chase Bank] went up nearly 400 or more points . . . ?

MR. WIGGIN: The market in bank stocks was just like the market in other stocks, as you know, in 1928–29. There developed a great demand for stocks, a great demand for securities. That applied to bank stocks just the same as everything else.[15]

Whoever created the market, it was evident to sober people whose minds had not been formed by the desire for quick profits that stock prices were too high. One could perhaps account for the booming volume, the massive public participation in the stock market, the high NYSE seat prices, the high call loans, and the flood of speculative new issues as adjuncts of a new industrial prosperity which would last indefinitely, but even then stock prices were too high. The average peak stock price was 30 times 1929 earnings per share, while the average

Table 1.7
Stocks with the Highest Price-Earnings Ratios at Their 1929 Peak Prices

	Price-earnings ratio	Market price as % of book value	Return on equity in 1929
Adams Express Co.	153	250%	1.6%
Alleghany Corp.	108	671	2.5
American & Foreign Power	50	390	7.9
Burroughs Adding Machine	42	1,386	33.4
Chase National Bank	62	438	7.4
Cities Service	69	782	11.6
Columbia Graphophone	165	5,086	30.9
Electric Bond and Share	96	233	3.3
Goldman Sachs Trading Corp.	129	295	2.3
International Nickel	50	1,043	21.0
IT&T	51	324	6.4
Middle West Utilities	90	456	5.0
Montgomery Ward	60	476	7.9
National City Bank	120	1,318	11.0
Radio Corp.	73	1,669	22.9
United Corp.	105	255	1.3

Source: Table A.2 and Table A.1 in the Statistical Appendix.

return on equity was 16 1/2%. (See Table A.2 in Statistical Appendix.) This equation is eloquent proof that stock prices were too high. A 16 1/2% return on equity in the business boom of 1928–29, compared to the 5%–6% yields available on corporate bonds, did not justify a multiple 30 times earnings. The same stocks were 420% of book value at their peak prices, (see Table A.1 in Statistical Appendix) which meant that the stockholder's earnings on the underlying equity equalled less than 4%. Such stock prices were clearly dependent on further price rises rather than on the income generated and distributed by the companies.

The incongruity between stock prices and business reality can be seen in Table 1.7, which sets forth the highest-flying stocks. As the low returns on equity of most of the companies show, these high valuations placed little emphasis on earnings.

There is no need to resort to the high-flying stocks to illustrate the specifics of overvalued stock prices. The stocks in Table 1.8 were valued at 30 to 50 times earnings and had equally mundane earnings. This list is more impressive, however, in that it includes numerous stable utilities, banks, and manufacturers that lacked the glamour of the holding companies, investment trusts, and companies with new products; yet these stable companies also received outrageous valuations. Stocks with such prices simply had to come down.

The intense speculation in the stock market created a variety of liquidating

Table 1.8
Other Stocks with Price-Earnings Ratios 30–50 Times Earnings per Share in 1929

	Price-earnings ratio[a]	Return on equity
J. I. Case	34.0	8.1%
Columbia Gas & Electric	44.9	11.1
Commonwealth Edison	35.1	9.4
Commonwealth & Southern	45.7	10.6
Consolidated Gas Co. of N.Y.	38.5	9.0
Continental Illinois Bank & Trust	38.2	13.4
Detroit Edison	34.5	8.9
First National Bank of Chicago	39.1	10.5
General Electric	43.0	16.8
Guaranty Trust	41.4	9.0
Irving Trust	39.1	9.7
National Power & Light	46.5	7.1
North American Co.	37.2	15.7
Public Service Corp. (N.J.)	35.1	8.9
Radio-Keith-Orpheum	32.4	7.6
Union Carbide & Carbon	35.5	13.1
United Gas Improvement	40.0	10.3
Warner Bros.	36.7	8.0

Source: Table A.2 and Table A.1 in the Statistical Appendix.

[a] At 1929 high prices.

pressures that began before the Crash but became pervasive once the Crash occurred. For example, most brokers became concerned about the extent of their margin loans at the high stock prices in midsummer 1929. Brokers began to raise the margin requirements on loans until they were generally up from 10%–25% to 50% by the Crash. In some cases, margin requirements were raised as high as 60%–75%.[16] This dramatic change illustrates brokers' concerns about stock market levels much better than their advertisements or weekly letters. In raising margin requirements, brokers were protecting their own credit exposure and limiting their own business. This was probably a significant factor in creating the market top in late August and early September and in the slow decline in stock prices until the Crash. AT&T also protected its credit exposure at the same time by changing its traditional stock purchase plan of $20 down and $10 per month to $50 down and $10 per month.[17] Once the Crash began, some brokers raised margin requirements further for their customers and refused new margin accounts.

Much of the selling at the worst points of the Crash, when selling appeared senseless, occurred as brokers sold out undermargined accounts. Call loans, which financed margin loans and inventories, dropped from $8.5 billion on

October 1, 1929, to $4 billion on December 1, 1929, where they stayed until the end of the year, at which time they were down to 6.2% of the market value of all listed stocks. As far back as 1925 this ratio had never been below 8%.

The decline of stock prices in the Crash and thereafter created a group of undermargined investors who became a liquidating force whenever stock prices improved. Many banks did not sell out major speculators and brokers that had become undermargined on their loans because the banks considered the decline in securities values unrealistic. Each time during the Crash when stock prices improved, however, the banks sought liquidation of these loans. Individuals or partnerships who saw most of their equity in stocks wiped out needed little encouragement to sell out when prices rose and restored some equity.

A similar liquidating force existed in those who supported the market in the Crash. The Bankers' Pool was the most prominent example, with its accumulation of $129 million in stocks, but others supported stocks on a lesser scale. J. P. Morgan & Co. supported United Corp. independently of the Bankers' Pool because of its role in the creation of the company. A. P. Giannini spent $68 million in four weeks to support Transamerica Corp.; Charles E. Mitchell borrowed $10 million personally to support National City Bank's stock. Many others, alone and in pools, tried to support stocks for long and short periods. None of these were buying stocks as investors; they were buying only to sustain the market and sell when it developed independent strength.

Pools that were caught with long positions in the Crash were sellers in a similar manner. The pools were formed originally to capitalize on the stock market trend with a view to selling higher, not for investment purposes. Pools were organized like syndicates, with up to 20 participants, each taking a small share of the risks.

There were infamous pools in Radio Corp. of America (RCA), Chrysler, Anaconda, Air Reduction Co., Combustion Engineering, and Chase National Bank. Chase itself was a member in 15 pool accounts in 1929. Percy Rockefeller, a reticent nephew of John D. Rockefeller whose voice was so low he could hardly be heard, showed a surprising assertiveness in the stock market, where he was in the Anaconda and Air Reduction pools, even though he was a director of the latter, and in other pools with "Sell 'Em" Ben H. Smith. John Raskob, Bernard Baruch, Eugene Meyer, and Al Smith were also in pools. Nathan Brush, an unknown hotel clerk and machinist in 1921, pyramided a small investment into $15 million by 1929 by speculating in pools. All the brokerage houses participated in pools, including J. P. Morgan, Dillon, Read & Co., Brown Bros., and Kuhn, Loeb & Co. William Durant, founder of General Motors, led repeated pools in RCA. Fellow Detroit auto men, the Fisher brothers, were also leading market speculators.

Usually a prominent market professional managed each pool, such as Arthur W. Cutten or Mike Meehan, the specialist in RCA. The manager used the pool proceeds to support the pool's stocks and to make trading profits. Sometimes the pool was used to "churn" stocks to create an impression of activity that would attract the public as investors. After the Crash, criticism of the markets focussed on the manipulative aspects of these pools, but the pools could manipulate only because the market was moving in their direction; they lost, like others, when the market dropped. In one case, J. S. Bache and W. E. Hutton had to sue W. F. Kenny, a big speculator and intimate of Al Smith, for his share of the $1.6 million loss in a Chrysler Corp. pool.[18] Raskob, Durant, Fred Fisher, Al Smith, Percy Rockefeller, Ben Smith, and Ben Bragg had shocking losses in a $32 million pool in Anaconda stock. The pools were trapped in the Crash and could do nothing about it. They cut their losses when stocks recovered, if they still had the stocks, because they were not permanent investors in the first place.

The speculative spirit did not lapse with the Crash. Speculators sold stocks short to capitalize on the down trend or to hedge long positions which they could not sell for personal or tax reasons. Several Morgan partners and Albert Wiggin of the Chase were included in the latter case. Percy Rockefeller was short Standard Oil Co. (Indiana), Matthew Brush was short up to 130,000 shares at one time. Thomas Bragg anticipated the Crash and built up a large short position. No comprehensive data on short sales is available for this period. The NYSE did not begin to collect steady data on short sales until May 1931.

Some short sales were made by brokers to hedge their trading inventories or put and call operations, but all short sales were publicly condemned because they appeared to capitalize on the nation's problems. The attention to short sales in the press and other commentary verged on sensationalism or a search for a scapegoat. There was little sentiment on the side of short-sellers, whose philosophy Matthew Brush disdainfully outlined before the Pecora Committee:

SENATOR BUCKLEY: You still think you are justified as a patriot in selling short at the present time?

MR. BRUSH: Patriotism has nothing to do with it. But if I sell long, I feel that I also can sell short.

SENATOR GLASS: That's the game.

MR. BRUSH: That's life.[19]

THE BROKERS SURVIVE THE CRASH INTACT

The brokerage community suffered surprisingly light damage in the Crash. The only bankruptcies were small firms in Boston, Providence, Cincinnati, and the state of Wisconsin. The commissions generated by the tremendous volume of stock business were profitable to the brokers even if their customers suffered, but this is an inadequate explanation of the lack of brokerage failures. The brokerage firms held stocks which lost value just as their customers did. They were no less infected by the optimism and prosperity of the period than their customers. There was an active Over-the-Counter market in bank stocks, utilities, investment trusts, insurance stocks, aviation stocks, and many others, in all of which market-makers held inventories. Partners of the brokerage firms also were large stockholders on their own. Often the capital of firms was in the form of securities contributed by the partners. Numerous brokers suffered losses as they tried to support individual stocks in which they were interested during the Crash, operating in a manner smaller than but similar to the Bankers' Pool. Brokers also suffered losses on margin accounts which could not be sold out fast enough to preserve the equity in them.

There were isolated examples of individuals on Wall Street who did not survive the Crash. Richard Whitney, Vice President of the NYSE and popularly recognized as the "Morgan broker," lost heavily in 1929, before and during the Crash. He remained solvent only because his brother, George, a J. P. Morgan partner, lent him over a million dollars. Charles E. Mitchell, President of the National City Bank, was caught with an enormous long position in National City Bank stock. He borrowed $10 million from J. P. Morgan to support National City's stock, as it threatened to decline below the $425 exchange price in a current merger agreement with the Corn Exchange Bank. For his efforts, he ended up overextended and a hapless creditor of J. P. Morgan & Co. for $6 million. He too stayed solvent only because his loan was not called. James Riordan, Chairman of the County Trust Co. and a pal of Al Smith and John Raskob, was destroyed by the Crash and committed suicide. Numerous others who qualified as professionals on Wall Street were broken because they owned stocks on credit.

One might have expected the rights offerings under way during the Crash to have bankrupted some of the investment bankers underwriting them. The North American Co. had a rights offering at $100 per share under way, and the stock dropped as low as $69. Lee, Higginson & Co. underwrote the U.S. portion of a $24 million participating debenture issue sold on a rights offering by Kreuger & Toll. (A participating debenture gets increased interest as earnings increase above a specified level.) The offer was announced October 23rd, to expire December 2nd. It was eventually announced as 97 1/2% subscribed, even though Kreuger & Toll common hit a low of $22 1/8 on November 13th, compared with $33 1/2 when the issue was offered. Middle West Utilities was similarly able to complete a $147 million refinancing which included $92 million of common stock on a 1 for 4 rights offering that expired on November 16th. The underwriters of a rights offering for Grigsby, Grunnow Co., a phonograph manufacturer, were less successful. On November 24th they were forced to pay $40 per share for $9 million of Grigsby, Grunnow common, which had dropped to $17 per share. Their losses must have exceeded $5 million. Dillon, Read & Co. and Ladenburg, Thalman & Co. managed a rights offer by Seaboard Airline Railroad Co. which suffered a similar fate. Some 1,892,630 shares were offered at $12, but the stock dropped to $9 1/8 and closed the year at $11. The underwriters had to take up 1.6 million unsubscribed shares. The Pennroad Corporation, an affiliate of the Pennsylvania Railroad, underwrote 25% of the issue and was forced to take up 400,000 shares.[20] Underwriters also had to take up 40% of a Bethlehem Steel rights offering of 800,000 shares at $110 when the stock had dropped to a low of $78 1/4 on November 13th. It closed the year at $94 3/4. The loss at $94 3/4 was still almost $5 million.

Several factors account for the high survival rate among brokers. Their own stockholdings were light because the speculative froth in the market was recognized. Early in September the brokerage community had become pessimistic and had liquidated many of its holdings. Some of the firms had already gone to extreme lengths, such as Gilbert, Elliott & Co., a small firm which switched its whole business from trading bank stocks to trading bonds—about as ideal a redeployment of capital as could be imagined.[21]

Once the Crash came, brokers sold their own inventories and reduced their exposure to losses on margin accounts drastically, as already discussed in part. Individual margin speculators were squeezed mercilessly by the brokerage scramble to liquidate. There were few opportunities for the victimized investors to respond or to renegotiate their loans. Many employers came to their employees' aid to prevent hardships. Julius Rosenwald, of Sears, Roebuck & Co. and Samuel Insull personally guaranteed their employees' stock loans, even when the stock was in other companies. Standard Oil Co. (New Jersey), U.S. Steel, and Kroger Grocery & Baking took over their employees' stock loans from the brokers. Thus, one way or another, brokers sharply reduced their exposure to stock market losses during the Crash.

The brokers were also saved because the commercial banks showed mercy when their call loans became undermargined, a mercy not extended by the brokers to their own customers. There was widespread recognition in the Crash that banks were ignoring many undermargined loans, and the banks formally reduced margin requirements from 50% to 25% to avoid further liquidation. This banking attitude may have been the principal reason that the brokers remained solvent, because stock prices naturally recovered as the panic subsided, thereby restoring the brokers' equity. In past crises, the problem had been to retain the lenders in anticipation of the recovery. This was the first panic in which brokerage failures were not an important component of the liquidation. The change in circumstances was due to the creation of the Federal Reserve Board. For the first time, the major banks were in a position to extend themselves in a panic, rather than contract in order to save themselves, because they had a lender of last resort. So the presence and the actions of the Federal Reserve acted to save the brokerage industry from collapse in the panic.

Many companies also saved their brokers by cancelling or extending underwritten rights offerings. Cities Service Co. and Sharon Steel Hoop Co. cancelled their offerings, as did Great Lakes Corp., a new investment trust sponsored by Guardian Detroit Union Group. The trust refunded $26 million received out of the $35 million offering, with the wise admonition that "no additional financial burdens should be incurred either by individual or financial institutions at the present time," thereby relieving the underwriters, Fisher & Co., of a considerable burden. Pacific Associates, J. I. Case Co., and Allis Chalmers extended their rights offerings so that the market prices of their stocks had time to rise again above the subscription prices and thereby make exercise of the rights profitable again.

SPECIFIC INDUSTRIES AND INDIVIDUAL STOCKS IN 1929

The generalities in which we have been discussing the stock market provide a perspective on events but do little to indicate how particular industries and stocks performed. We now turn to how stock prices changed for various industries and individual companies in 1929, and to how industry and company economic performance fared behind the stock price changes. To keep a balanced perspective, the emphasis will be on the larger industries, with some diversion to less important stocks that were attracting attention.

The data on individual companies can be found in Table A.1 in the Statistical Appendix, which provides per share earnings, dividends, book values, and stock prices as well as returns on equity, capitalization ratios, and cash and equivalents for 1929 to 1933. Table A.2 provides ratios for each company's high and low 1929 stock prices.

The Railroad Industry

Railroads constituted the largest U.S. industry by a considerable margin. The market value of all railroad stocks was $10.1 billion on October 1, 1929, compared with the value of all NYSE stocks of $79.1 billion. The petroleum industry, the next largest, had a value of only $7.2 billion. Several railroads had capitalizations that made them among the largest corporations in the nation, particularly the Pennsylvania Railroad Co., the stock of which had a market value of $1.2 billion on October 1, 1929, and New York Central Railroad, which had a value of $1 billion. (See Table 1.9 for data on specific railroads.)

The railroad industry was in many respects a benchmark of U.S. business conditions. Data on freight-car loadings were published weekly, and data on revenues, revenue-freight miles, and commodities shipped were published monthly. Regulation of the industry by the Interstate Commerce Commission produced steady data on railroad operations.

The railroad industry had done reasonably well in the late 1920s. Industry net income was a record $883 million in 1926, down slightly in 1927 and 1928, and up to another record in 1929 of $977 million.[22] The nine leading railroad companies averaged a 9.7% return on equity in 1929, and their 1929 dividends appeared well protected by earnings per share more than double their dividends.

In this period railroad stocks stood for stability as investments. They offered the highest current income in contrast to a speculative reliance on capital gains. They also fluctuated less in value than other industries. Historically, they rep-

Table 1.9
The Railroad Industry in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Atchison, Topeka & Santa Fe	13	9	130	85	3.34	5.13	65	9.9	Aaa	38
Baltimore and Ohio	14	10	99	72	4.83	6.65	72	7.1	Aaa	(19)[a]
Canadian Pacific	24	16	136	92	3.68	5.40	68	6.6	Aaa	70
Chesapeake and Ohio	13	7	184	106	3.57	6.25	57	14.3	Aaa	7
New York Central	15	10	156	97	3.11	5.00	62	10.1	Aaa	(22)
Norfolk & Western	10	7	144	95	2.76	4.19	66	14.5	Aaa	6
Pennsylvania	13	8	121	80	3.64	5.50	66	9.7	Aaa	34
Southern Pacific	12	8	71	47	3.80	5.70	67	5.7	Aaa	28
Union Pacific	15	10	136	91	3.36	5.00	67	9.3	Aaa	16
Averages	14.3	9.4	131	85	3.57	5.42	66	9.7	—	—

[a] Brackets indicate short-term borrowing.

resented solid value because of the tangible nature of their investments in track, equipment, and station facilities. For this reason the railroads were the first U.S. industry able to do public bond financing. All the leading railroads had Aaa ratings on their mortgage bonds when they were secured by their best track and equipment. (Individual bond issues were secured by specific trackage, property, and equipment.) To many investors, the regulated nature of the business promised stability and security. This general attitude had its roots in the industry's historic importance and perhaps in a perverse twist of logic that argues that what is not exciting must be conservative. The high ratings on the industry's bonds had similar roots.

Rail stocks were widely considered income stocks bought for their dividend yield. The average yield of the nine leading railroad stocks was 3.57% at their 1929 highs, compared with the broad stock average of 3%. Most of the railroads had very stable dividends. Canadian Pacific, Southern Pacific, and Union Pacific paid the same dividend rates throughout the decade, and most of the other railroads had raised their dividends only slightly.

An irony of the railroads' situation was that despite their position as income investments they paid out a low proportion of earnings in dividends. The dividend rates of the leading railroads averaged 51% of net income, compared with the average for all industries of 67%. Only oil, chemical, and heavy manufacturing companies came close to the railroads' low dividend payout ratios. Unlike the railroads, however, which had not expanded their tracks, locomotives, or passenger cars since 1914 and had barely expanded their freight car capacity,[23] these other companies generally needed their income to finance growth. The railroads were forced to retain a high proportion of net income because of their low return on equity, poor cash flow, and difficulty selling common stock. They were already too highly leveraged, with 40% debt, whereas many retail and industrial companies had no debt and utilities kept their debt below 40%. The capital necessary simply to stand still dictated railroad dividend policies rather than opportunities for growth.

The industry was burdened by numerous well-known problems. It ran a large passenger business on which it lost money. Its employee unions were militant and highly paid, and they restricted adaptation of work practices. Automobiles and trucks were beginning to cut into railroad business. Trucks creamed off many of the most desirable, easily managed freight loads. Pipelines were also beginning to attract oil business from the railroads. Changes in competitive practices should have eased the effect of these developments on the railroads, but the Interstate Commerce Commission (ICC) was slow to permit changes. Freight prices were quite rigid and unadaptive to individual situations. For years the ICC had been studying the advisability of creating four or five eastern trunk line systems out of the many competing railroads, but little progress was apparent.

If these problems were exacerbated and the ICC remained unresponsive, the effect on the railroads was bound to be dramatic because they were highly leveraged. The New York Central's capitalization was only 54% common equity, and the Baltimore and Ohio's was 43% common equity. The Pennsylvania's common equity, along with that of the others, was around 60%, which was still low compared to other industries.

These problems of the railroad industry caused the relatively low stock market valuation of railroad earnings and investments. The industry had become the "poor boy" of the stock market by 1929. Rail stock prices had only doubled since 1919, while industrial stock prices had tripled and utility stock prices had quadrupled. Railroad stocks' price-earnings ratio of 14 compared with an average of 30 for all stocks. The railroad stocks' peak price valuation of 131% of book value compared with an average valuation of 420% of book value for all stocks. Railroad stocks were accorded only roughly one-third the value of stocks in general.

In the Crash railroad stocks declined less than others because of the lower level of speculative trading in them. The nine leading railroad stocks dropped to 66% of their 1929 highs, compared with 48% for all stocks. At these low prices, the average railroad dividend yield of 5.42% was below the 6% average for all stocks. However, the railroad industry's relative valuation was still the lowest, at 9 times earnings and 85% of book value, compared with the averages for all stocks of 12 1/2 times earnings and 181% of book value. The industry's lower investor appeal was further reflected in a slower stock price recovery in November and December than other industries experienced. The Dow Jones Railroad Index recovered only 18.6% in November and December, compared with 32.6% for the Dow Jones Industrial Index and 45.2% for the Dow Jones Utility Index. But the railroad recovery was strong enough for the Pennsylvania Railroad to have a $90 million common stock offering in December.

Among the leading railroads, Baltimore and Ohio and Southern Pacific stood out as the most vulnerable. The Baltimore and Ohio (B&O) earned only a 7.1% return on equity, despite its high leverage, because of its heavy dependence on trans-shipments from other lines (37% of its freight), relatively short hauls, and close ties to the coal and steel industries. Its $19 million in short-term debt as it finished 1929 also made it more vulnerable than other railroads.

Southern Pacific had an even worse stock price performance than the B&O; its stock sank to a mere 47% of book value. It deserved such treatment, for Southern Pacific management had fallen asleep at the switch. The line had earned only a 5.7% return on equity and had not increased its dividend since 1907, despite the benefits of a wide diversity of freight and long hauls of freight that the line itself had originated. It had neither the quality of track and equipment nor the midwestern extensions of its chief competitor, the Atchison, Topeka & Santa Fe, and lesser railroads were beginning to encroach on Southern Pacific territory.

The Chesapeake & Ohio and the Norfolk & Western railroads stood out as the two best railroads. Both earned more than a 14% return on equity and still had stock prices close to book value at the lows of the market. Both were built around the bituminous coal freight of Appalachia and carrying it for relatively long hauls. A financial superstructure had been developed on the strength of the Chesapeake and Ohio which, if traced upward, led through the Chesapeake Corp. to the Alleghany Corp., the Van Sweringen Corp., and finally to the Van Sweringen brothers, Cleveland real estate developers. The C&O moved along with little regard for this weight it carried on its back.

The Operating Public Utility Industry

Electric utilities were still relatively new in 1925. Central city generating units of 50,000 to 100,000 kilowatts serving a large surrounding area had been developed only within the last 20 years at the behest of Samuel Insull, President of Commonwealth Edison Co. There were a few large operating utilities with a capitalization in excess of $250 million, such as Consolidated Gas Co. of New York, Public Service Corp. of New Jersey, Pacific Gas & Electric Co., Detroit Edison Co., and Commonwealth Edison, but there was still a separate electric company in most cities, and sometimes more than one company in a city. Holding companies often knitted these separate operating utilities together, sometimes very effectively when the holding companies provided strong management, as the North American Co. did; but still a great many operating utilities were independent, only partially owned by a holding company or loosely managed by one.

Both the technology and the finances of the industry were developing quickly. Larger generating units and higher voltage transmission lines were reducing the costs of electric power, and expanding wealth and population provided growing markets for the new technology. As a result, operating electric utilities had large capital requirements. They averaged approximately $1.7 billion in public financing in 1926–29[24] which accounted for almost one-quarter of all corporate financing.

By 1929, utilities had become prominent stocks. (See Table 1.10 for data on specific companies.) According to the New York Stock Exchange, operating utility stocks were worth $5.1 billion by October 1, 1929, and Consolidated Gas Co. of New York was the stock most widely held by investment trusts. The market interest in and valuation of utility stocks were somewhat paradoxical in that the companies' returns on equity averaged a relatively low 9.7%, compared with the average of 16 1/2% for all companies, and yet the market valuation of utility stocks was close to the averages for all companies. Utility stock prices at their peak were 34 times 1929 earnings per share and 325% of book value, compared with the averages for all stocks of 30 times earnings and 420% of book value. The dividend yield on utility stocks at these prices averaged 2.11%, compared with 3% for all stocks.

In the Crash utility stocks declined in line with the averages. At their lowest prices, utility stocks were 14.6 times 1929 earnings, slightly above the average for all stocks of 12 1/2 times earnings, and 137% of book value, compared with 181% for all stocks. The average decline in utility stocks was 42% versus 48%

Table 1.10
The Operating Public Utility Industry in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Commonwealth Edison	35	16	331	149	1.78	3.96	45	9.4	Aaa	20
Consolidated Gas Co. of N.Y.	39	17	345	151	2.19	5.00	44	9.5	Aaa	(9)[a]
Detroit Edison	35	14	306	120	2.08	5.30	39	8.9	Aaa	(8)
Pacific Gas & Electric	28	12	330	140	2.02	4.76	42	11.7	Aa	20
Public Service of N.J.	35	14	314	123	2.46	6.30	39	8.9	Aa	1
Averages	34.4	14.6	325	137	2.11	5.06	42	9.7	—	—

[a] Brackets indicate short-term borrowing.

in all stocks. (The Dow Jones Utility Index is misleading in this respect because it included both operating utilities and holding companies. It declined 55%, compared with 32% for both the Dow Jones industrial and railroad indices. The same distortion occurred in the Utility Index's rise from January to September 1929.) The market's attraction to utilities was still evident at the lows of the Crash in the average dividend yield of 5% on utility stocks versus 6% on all stocks.

Holding and Investment Companies

Holding companies and investment trusts enjoyed unprecedented popularity in 1928 and 1929. Six of the 16 companies in these categories studied here were formed in 1929: Alleghany Corp., Commonwealth & Southern Corp., Lehman Corp., Tri-Continental Corp., United Corp., and United Founders Corp. Goldman Sachs Trading Corp. and Transamerica Corp., were founded in late 1928. Dillon, Read & Co. created the first significant U.S. investment trust, United States & Foreign Securities Corp., in 1924, but there were only $175 million in investment trust issues by 1927. The explosion began in 1928 when investment trust issues totalled $790 million and then grew to almost $2.25 billion in 1929, some 22% of all corporate issues.[25]

Goldman, Sachs & Co. managed initial public offerings in late 1928 and in 1929 for the Goldman Sachs Trading Corp. and its affiliates, Shenandoah Corp. and the Blue Ridge Corp., which became infamous because of their quick demise. Shenandoah skipped its barely established 1 1/2% stock dividend in December 1929, and Blue Ridge was the recipient of a rumored cash infusion during the Crash from Harrison Williams, one of its co-sponsors. But other investment bankers were equally involved in sponsoring such companies. J. P. Morgan & Co. sponsored United Corp. and Alleghany Corp., the former to establish a J. P. Morgan & Co. position in the financing of utilities in the mid-Atlantic states of New York, New Jersey, and Pennsylvania, and the latter on behalf of the Van Sweringen brothers, who controlled the Chesapeake & Ohio and Missouri Pacific railroads. Harris, Forbes & Co., which was the preeminent investment banking firm in the utility industry, underwrote United Founders Corp. and Public Utility Holding Corp. of America, which controlled a maze of domestic and foreign utilities for which Harris, Forbes & Co. managed financing. Kuhn, Loeb & Co. underwrote the Pennroad Corp., an investment and trading affiliate of Kuhn, Loeb's preeminent client, the Pennsylvania Railroad. Lehman Bros. created the Lehman Corp., which turned out to be one of the best-managed investment trusts.

The Public Utility Holding Companies

The various investment trusts and holding companies differed in their operations in some respects. The public utility holding companies controlled operating electric and gas utilities spread out across the nation and typically owned 100% of these subsidiaries' stock. Commonwealth & Southern Corp., whose president, Wendell Willkie, ran against Franklin Roosevelt in 1940, controlled the subsidiaries of the present-day Southern Co. (Alabama Power, Mississippi Power, Gulf Power, and Georgia Power) as well as Ohio Edison Co., Consumers Power Co., Southern Indiana Gas and Electric Co., and others.

Electric Bond and Share Co. (Ebasco), which had been founded in 1905 by General Electric to take over its utility holdings, controlled five holding companies with subsidiaries in 32 states and 13 foreign countries. Ebasco was the largest electric utility holding company and had the best credit standing. In 1930 its preferred stock was rated Aa, comparable with General Motors, American Can Co., International Harvester Co., and Allied Chemical & Dye Corp. The most prominent operating companies in the Ebasco system were the present-day subsidiaries of Middle South Utilities Co. and Texas Utilities, plus Utah Power & Light, Idaho Power, United Gas Corp., Florida Power & Light, Kansas Gas & Electric, Minnesota Power & Light, Montana Power, Pacific Power & Light, Washington Water Power Co., Carolina Power & Light, Houston Lighting & Power, and many others, the names and corporate structures of which have changed. This was clearly a formidable system.

Cities Service Co. controlled over 90 utility subsidiaries operating in 39 states, Canada, and abroad, as well as 50 oil and gas subsidiaries that produced, transported, refined, and marketed petroleum and by-products. It was run by E. L. Doheny who had been heavily involved in the Teapot Dome Scandal. Cities Service's debt and preferred equity constituted 67% of capitalization, and its bonds were appropriately downgraded to Ba in 1930. It was easily the favorite stock on the Curb Exchange, however, where it often traded in volume surpassing the NYSE volume leader.

Other public utility holding companies were Columbia Gas & Electric Corp., which was built around the industrial area covered by Ohio, western Pennsylvania, and West Virginia; International Telephone & Telegraph, which had a principally foreign telephone network; North American Co., which began in Milwaukee and expanded to include chiefly Cleveland and St. Louis; Standard Gas and Electric Co., which was built around utilities in Pittsburgh, Minneapolis–St. Paul, Louisville, and Oklahoma City; United Gas Improvement, which was based on Philadelphia Electric Co.; and Middle West Utilities, which was spreading rapidly into the small towns of the rural Midwest from North Dakota to Texas.

The distinguishing feature of these holding companies was the role they played in managing their subsidiaries. Many exercised tight operating control over their subsidiaries, such as the North American Co., Columbia Gas & Electric, Commonwealth & Southern, Standard Gas and Electric, and United Gas Improvement. The holding companies played important roles in operations practices, engineering, construction, budgets, financial controls, and financing. Companies such as Commonwealth & Southern had centralized engineering, construction, purchasing, legal, tax, insurance, rate, and finance staffs. The North American Co. included significant coal-mining operations to supply its subsidiaries. Columbia Gas & Electric had six operating divisions, in each of which there was a full organization to cover all operating details. International Telephone & Telegraph managed its telephone and telegraph subsidiaries, constructed facilities and distributed electrical equipment, and carried on research and development work in electronic and cable technology.

Ironically, these companies were held up by Franklin Roosevelt and others as spectacles of financial abuse and confusion, which led to the Public Utility Holding Company Act of 1935 and the subsequent dissolution of the companies in the 1940s. However, in addition to being well founded financially, they were more stable, useful, and operationally oriented than the investment trusts and purely financial holding companies, which were attacked less directly. The public utility holding companies were typically set up before World War I, when the growth of public utilities was helped by central expertise. Most of these holding companies had securities ratings of A or Aa. Most of their securities investments were acquired at costs reasonably close to book value. Prominent men led them. And while the companies did have an interest in buying and selling securities and in financial maneuvers to create gains, they were not narrow financial constructions.

There is no gainsaying the enthusiasm of the financial markets for these public utility holding companies, however. (See Table 1.11 for data on specific companies.) Their trading volume in 1929 exceeded 100% of their outstanding shares. At the high point in the market, their stocks averaged prices 57 times earnings per share, with Electric Bond and Share, which was most prominent because of its size and its relationship with General Electric, selling at 96 times earnings per share. These stocks averaged 444% of their book value at the same high prices, and a dividend yield of merely .87%, with three of the companies paying no dividends at all. Investors may have reasoned that leverage, professional management, and the rise in value of these holding companies' utility investments justified such heady valuations, but their valuations are difficult to understand in the light of these companies' average 1929 return on equity of only 9 1/2%.

The vulnerability of these holding company stock prices became clear in the Crash. They dropped to one-third their highest 1929 prices, which was a negative performance exceeded only by investment trust stocks, and to 148% of book value, compared with 181% of book value for all stocks. The resulting price-earnings ratio of 18 for the group, compared with the average for all stocks of 12 1/2, suggested that the public utility holding company stocks might still be vulnerable to further relative price declines—which indeed they were, but at least there were no rumors that the companies were in financial trouble, as was the case with some investment trusts and other holding companies (see below).

The Investment Trusts

The purpose of investment trusts was purely financial, in contrast to the public utility holding companies. George Howard, President of the United Corp., de-

Table 1.11
The Public Utility Holding Companies in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Cities Service	69	20	782	235	0.44	1.50	29	17.1	Ba	(60)[a]
Columbia Gas & Electric	45	17	500	185	1.43	3.85	37	11.1	A	(8)
Commonwealth & Southern	46	15	485	155	0	0	32	10.6	A pfd.	53
Electric Bond and Share	96	25	233	62	0	0	32	3.3	Aa pfd.	93
IT&T	51	18	324	115	1.34	3.75	36	6.4	A	(23)
Middle West Utilities	91	32	456	160	1.23	3.50	35	5.0	Ba	(1)
North American	37	13	584	210	0	0	36	15.7	A pfd.	4
Standard Gas and Electric	37	11	224	68	1.43	4.73	30	6.0	Baa	23
United Gas Improvement	40	14	413	147	1.94	5.45	35	10.3	Aa pfd.	36
Averages	56.9	18.3	444	148	0.87	2.53	33	9.5	—	—

[a] Brackets indicate short-term borrowing.

scribed the purpose of the corporation to the Senate committee investigating stock exchange practices as follows:

> My idea of the United Corporation has been that it is a holding company, with interests in these various other utility operating or holding companies, without management, without supervision, without engineering of any kind, deriving its income wholly either from interest or dividends, whatever they might be, in connection with its investment. It is never building up any organization, leaving complete control in the separate and independent units.[26]

Despite Howard's disclaimer that the United Corp. sought any control over companies in which it invested, the United Corp. was a means for J. P. Morgan & Co. to gain a foothold in the utility business. United Founders served the same purpose for Harris, Forbes & Co. through large indirect holdings in Standard Gas and Electric. Goldman Sachs Trading Corp., Lehman Corp., and Tri-Continental Corp. held influential stock positions in utility, retail, and industrial stocks and exercised control in a few cases, but the portfolios of these investment trusts were more broadly diversified, like a modern mutual fund portfolio.

The underwriters' interest in trusts was in the commissions earned by selling them, and in the fees earned managing their portfolios; but the underwriters also expected these trusts to be successful playing the market and took major shareholdings in the trusts for their own accounts. The underwriters were just as caught up in the optimism of the bull market as their customers were.

The trust stocks traded on asset or portfolio values, rather than on earnings or dividends. Otherwise, they would never have gotten off the ground, for none paid a dividend, and their average return on equity in 1929 was only 4.1%. As stock prices rose, the value of the investment trusts' portfolios rose, which resulted in the trusts' own stocks rising. Some investment trust stock prices got ahead of their asset values in anticipation of the results that professional financial managers could achieve by good management, manipulation, or leverage. (See Table 1.12 for details on specific trusts.) The relationship of market values to book values for these stocks is not a helpful measure, because book values were based on historic costs. These historic costs reflected stock prices whenever the holding company had bought its portfolio, and they were out of line with market values by the end of 1929. The apparent ratio of market to book value at 1929 high prices varied from 356% for Tri-Continental Corp. to 149% for Lehman Corp., yet the latter endured as one of the most successful trusts. None had a bond rating, even though they had debt outstanding.

The investment trust stocks were hit worst by the Crash. They prospered in the market's optimism and suffered in its pessimism. The average stock in this group dropped to 30% of its 1929 high, and, according to market commentators, most investment trust stocks sold at prices below the per-share breakup value of their assets.

Numerous trust stocks were still in underwriters' hands when the Crash hit.

Table 1.12
The Investment Trusts in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Goldman Sachs Trading	129	34	295	78	0	0	26	2.3	NR[b]	(24)[c]
Lehman Corp.	NA	NA	149	69	0	0	46	NA[a]	NR	33
Tri-Continental Corp.	NA	NA	356	63	0	0	18	NA	NR	20
United Corp.	155	39	205	51	0	0	25	1.3	NR	18
United Founders	22	7	245	81	0	0	33	8.6	NR	(10)
Averages	102.0	26.7	250	68	0	0	30	4.1	—	—

[a] NA = Not Available.
[b] NR = No Rating.
[c] Brackets indicate short-term borrowing.

Lehman Corp. was underwritten in September 1929, in a declining market, which may have been the source of its wisdom. Twenty-four investment trusts offerings were made in October. When prices began to drop, many underwriters tried to escape their liabilities by selling their positions in the open market, which drove prices down sharply. Several trusts reacted by buying in their own stocks at the depressed levels. These efforts had little impact on the trend of prices. The stocks of the five trusts followed here sold at 68% of the book value of their investments at their lowest prices in the Crash.

The trust stocks were slow to recover in December, as the market rose again. Observers expected the industry to go through a shakeout in which the strongest trusts absorbed the others. Some trust stocks with prominent sponsors began to rise near the end of the year, but there were rumors that Goldman Sachs Trading Corp. was in serious trouble because of its $24 million in short-term debt and the decline in its portfolio.

The Non-utility Holding Companies

It was to be expected amid the enthusiasm over public utility holding companies and investment trusts that a hybrid between the two types would develop—holding companies designed to control operating companies through passive ownership of a minority or majority stock position without providing managerial or operational leadership. Alleghany Corp. was such a hybrid, sponsored by J. P. Morgan & Co. in 1929 and controlled by the Van Sweringen brothers from Cleveland as the holding company for their railroad stocks, especially the Chesapeake and Ohio and the Missouri-Pacific, from which they hoped to construct a fifth eastern trunk line. Alleghany's principal stock holding was 1.3 million of the 1.8 million outstanding shares of the Chesapeake Corporation, which in turn owned 4.1 million of the 7.1 million outstanding shares of the Chesapeake and Ohio Railway Co. The Van Sweringens, in turn, owned a majority of the Alleghany Corp. common stock. As trouble arose in 1930, they built this pyramid even higher by adding the Van Sweringen Corp., which took over 750,000 of the Van Sweringen brothers' Alleghany Corp. shares and sold bonds and stock warrants to the public.

A. P. Giannini built a large bank holding company system around the Bank of Italy in California and the Bank of America in New York, with the Transamerica Corp. at the apex controlling both these banks and numerous other small banks. (Today's Bank of America was formerly the Bank of Italy mentioned here. The Bank of America name was not transferred to California until after Giannini sold the Bank of America in New York to National City Bank there.) The Bank of Italy was founded by Giannini in San Francisco as a small bank in the Italian produce section, but through aggressive loan policies and high interest rates on deposits, he built it into the largest branch banking system in California. Giannini was thwarted in his efforts to expand into a national branch banking system, partly because banking authorities questioned the soundness of Bank of Italy's lending and capital practices. Giannini's highly personal control over the bank and his secretive habits did not increase the confidence of banking authorities. He came close to his goal, however, by setting up Transamerica Corp. and acquiring the Bank of America. In 1929, he acquired Blair & Co., Inc., a successful investment banking firm, as well.

Other companies formed holding companies along the lines of Alleghany Corp. and Transamerica Corp., often as a preemptive measure to prevent other newly formed holding companies from coming after them. The Pennroad Corp. was formed for this purpose to control the Pennsylvania Railroad, and there was a mass of regional holding companies. None of them achieved the prominence of the two studied here, however.

Stock prices of Alleghany Corp. and Transamerica Corp. soared to heights in 1929 which in some respects even exceeded the stocks of the other holding companies and investment trusts. (See Table 1.13 for details.) Alleghany's stock price reached 108 times earnings per share despite a return on equity of merely 2 1/2% and no dividend. Transamerica stock rose to over 13 times book value despite a return on equity of only 4 1/2% as a result of the enthusiasm of its officers and depositors. Giannini halfheartedly tried to dampen speculation in the stock by proclaiming it overpriced, but he took pride in the avid following of the bank's depositors who were part of the speculation.

When the Crash came, the stocks of Alleghany Corp. and Transamerica Corp. were among the hardest hit. They dropped to 30% of their highest 1929 prices, paralleling the declines of the other holding companies and investment trusts that suffered the worst declines in the market. Alleghany stock dropped to 81% of book value, and its $27 million short-term debt position created some concern about its overall financial position.

The Banks

Bank stocks are of unusual interest in this study because financial causes of the Depression are frequently emphasized rather than causes related to political, industrial, or trade problems. Under the circumstances, banks reflected trends early, and they were directly enmeshed in the most striking events of the period. The leading banks on which we focus are listed in Table 1.14.

There was an air of mystery about the banks' operations, even for the well informed. J. P. Morgan & Co., the leader in prestige both as a bank of deposit and an underwriter of new issues, was a private bank, the financial statements of which had been revealed only once in the century, to the Pujo Committee of the U.S. Senate, which investigated the 1907 market crash. Central Hanover Bank & Trust Co. and the First National Bank of Boston, both among the top ten banks in the nation, consistently did not reveal their earnings, and most of the banks did not reveal the earnings of their securities affiliates. Stocks of all the banks were traded Over-the-Counter rather than on the New York Stock Exchange so that they did not have to offer even the minimal information required by the Exchange. The principal market-makers in the stocks were the banks'

Table 1.13
The Non-utility Holding Companies in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Alleghany Corp.	108	32	271	81	0	0	30	2.5	Baa	(27)[b]
Transamerica	21	6	1,345	402	2.39	8.00	30	4.5	NR[a]	4
Averages	64.5	19.0	808	242	1.20	4.00	30	3.5	—	—

[a] NR = Not Rated.
[b] Brackets indicate short-term borrowing.

Table 1.14
The Banks in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Bankers Trust	31	21	367	244	1.90	2.86	66	10.9	—	—
Central Hanover	NA	NA	525	265	1.14	2.26	50	NA[a]	—	—
Chase National	62	29	438	208	1.30	2.74	47	7.1	—	—
Continental Illinois	38	23	493	301	1.54	2.52	61	13.4	—	—
First National (Boston)	NA	NA	404	213	1.50	2.83	53	NA	—	—
First National (Chicago)	39	19	412	204	1.55	3.13	50	10.5	—	—
Guaranty Trust	41	17	371	151	1.58	3.88	41	9.0	—	—
Irving Trust	39	17	378	167	1.57	3.56	44	9.7	—	—
National City	120	37	1,318	409	0.69	2.22	31	7.1	—	—
Averages	52.9	23.3	523	240	1.42	2.89	49	9.7	—	—

[a] NA = Not Available.

own investment banking subsidiaries, and because they did not hesitate to trade in the parent's stock to push up its price or to aid officer-stockholders, the outsider never knew what influences might be affecting bank stocks. Banks also lent money broadly to customers who wanted to purchase the bank's stock, and employees were encouraged to become stockholders on margin.

At their peaks the banks were probably the most overvalued stocks in the market. National City Bank stock traded at 120 times 1929 earnings per share and over 1300% of book value. Chase National Bank stock traded at 62 times 1929 earnings per share and 438% of book value. These two were the favorite bank stocks and the most affected by speculation.

The Chase was led by Albert H. Wiggin, its chairman and largest stockholder and the most popular banker on Wall Street. He had joined the bank as a lower-level employee in 1911, when its capital was only $13 million. Once Wiggin became the bank's moving force, he created one of the leading banks in the world through mergers, new branches, offices in Europe and the Caribbean during the 1920s, and the Chase Securities Corp. A solid, bullheaded man with pince-nez glasses, Wiggin radiated an air of confidence and friendliness, which he added to high competence. He was on more than 50 boards of directors by 1929 and an active participant in stock market pools and new-issue syndicates, either personally or through several family trusts established in Canada.

Charles E. Mitchell led National City Bank of New York as its Chairman through the force of his personality rather than large stock holdings. Good-looking, suave, at ease with the press and the radio, Mitchell was a supersalesman of prosperity. His personality seemed more suited to an investment banker than a commercial banker, and he was publicly suspected of excess and vulnerability in his position even before the Crash. None doubted his ability, however. When he became President of the bank in 1921, National City Bank had capital of only $40 million and one office. He made his first acquisition within a year, and during the 1920s he expanded the bank to include 72 branches in New York City and 99 in 24 foreign countries.[27] Its capital in 1929 was $240 million, and its securities affiliate, National City Co., had 60 branches, 11 of them foreign, and was the largest underwriter of new issues and a challenge to J. P. Morgan & Co. Mitchell was even up to challenging the Board of Governors of the Federal Reserve, which he did in May 1929 by publicly making $40 million available to the call loan market when the Board of Governors was trying to reduce stock market credit.

All the bank stocks were overvalued, however, whoever their leaders happened to be. The nine largest at their highest stock prices averaged 53 times 1929 earnings per share, 523% of book value, and a dividend yield of only 1.42%. The banks had no earnings history to justify such valuations. Profits for 1929 for the banking industry were a record $729 million,[28] but for the nine leading companies return on equity averaged only 10.2%, compared with 16 1/2% for all companies, and the banks' history was one of stability rather than rapid growth. Their high stock prices were stimulated entirely by intense merger activity among the banks in 1929 and by the trading of their own securities affiliates.

An extreme version of this merger activity occurred in Detroit, where ultimately two holding companies, the Guardian Detroit Union Group and the Detroit Bankers Co., controlled the city's banking and much of the banking in the rest of Michigan. When the Guardian Detroit Union Group was created in December 1929 by a merger of the Guardian Detroit Group and Union Commerce Corp., the two companies had acquired 27 banks. Eight more were quickly added. Officers later testified that remarkably little heed was paid to the assets of banks acquired in this hectic process. The Guardian Detroit Union Group had two securities affiliates—Keane, Higbie & Co. and the Guardian Detroit Co. Both had heavy inventories of securities at the time of the Crash, and the Guardian Detroit Co. had $3.4 million of the parent company's stock, which it had bought from Goldman Sachs Trading Corp. at the apparent bargain price of $189 per share when the stock was quoted at $230 to $240. The stock was down to $120 by November 29th, when a group of prominent stockholders of the parent took the stock off the Guardian Detroit Co.'s hands at its purchase price in order to protect the company's financial position.[29]

The Guardian Detroit Union Group was poorly managed and showed signs of trouble early. Much of its stock was held by directors, officers, and employees, or on margin loans within the Group's banks. The effect was demoralizing as the stock's price fell. Various directors guaranteed a $1.6 million loan from Bankers Trust Co. to refinance distress loans of officers and employees to counter this effect. The Group and its competitor, Detroit Bankers Co., would make headlines in 1933 when they caused Michigan to be the first major state to declare a bank holiday.

The nine banks' stocks averaged a decline to 49% of their 1929 high prices during the Crash, which was identical to the decline for all leading stocks, despite their high reputation and the support bank affiliates gave to their stocks. National City Co. bought a substantial amount of its affiliated bank's stock as it fell to 31% of its highest 1929 price, but it was able to reduce its holding to normal trading volume before year's end. Chase Bank stock dropped to 47% of its highest 1929 price and traded very heavily. Between September and December, Wiggin sold over 42,500 shares himself through pool agreements managed principally by Dominick & Dominick. (In principle, Wiggin "shorted against the box" by having one trust sell short what another trust owned.)

Price recovery in the bank stocks was limited in December because of the relative overvaluation which still prevailed for these stocks. The nine bank stocks' lowest prices still averaged 23 times 1929 earnings per share, compared with 12 1/2 times for all leading companies, and the banks' dividends provided a yield of 2.89% at their lowest stock prices, versus the average yield for all companies of 5.92%. The banks' reputations were exceedingly high, however.

They had organized the Bankers' Pool to support the market, acted as lenders of last resort when call loans were called, and now appeared as bastions of financial strength which would limit the depths of any trade recession.

The Oil Industry

The oil industry grew dramatically in the 1920s because of the growth of the auto industry. Gasoline production quadrupled between 1919 and 1929 to 18.3 billion gallons, and gasoline determined the oil industry's output and profit performances. The industry's net income of $583 million in 1929 was second only to that of the railroad industry and well ahead of the auto, electric utility, and steel industries, which earned approximately $400 million.

The oil industry was dominated by the Standard Oil companies, principally Standard Oil Co. (New Jersey), Standard Oil Co. of California, Standard Oil Co. (Indiana), and Socony-Vacuum Oil Co. (formerly Standard Oil Co. of New York). Standard Oil of New Jersey already had assets of $1.8 billion. Its bonds were rated Aaa, and its stock was the tenth most active in 1929. The Standard Oil companies were financial powers as well as oil powers because of their large cash positions and strong cash flows. (See Table 1.15 for details on the companies.)

At the other extreme among the oil companies was Sinclair Consolidated Oil Corp., whose Chairman, Harry F. Sinclair, was a principal in the Teapot Dome Scandal and later led manipulations in Sinclair Consolidated stock with Arthur Cutten. The company survived and grew, but much about it was questionable.

Between these two extremes were major companies like Gulf Oil Corp. of Pennsylvania and Texas Corp., which compared in size with Standard Oil of California and Shell Union Oil Corp., controlled by Royal Dutch Shell Co. The Atlantic Refining Co. and Phillips Petroleum Co. were considerably smaller at about one-third the size of Gulf Oil and only one-tenth the size of Standard Oil of New Jersey.

Despite the size and growth of the oil industry, oil company stocks were on a par with railroad and steel company stocks as the lowest-valued stocks in the market. The ten leading oil company stocks at their high prices averaged only 17 1/2 times 1929 earnings per share and 161% of book value, compared with the averages for all companies of 30 times earnings per share and 420% of book value. Oil stocks yielded a relatively high 3.45%, compared with 3% for all stocks. The cause of the poor valuation of oil stocks was the companies' low return on equity, which averaged only 9.7% in 1929. Even the four leading Standard Oil companies averaged only 9 1/4% return on equity.

The pressure on profits came from the dramatic increases in oil reserves, which forced prices down from $2.24 per barrel in 1926 to $1.70 per barrel by October 1929. Prices of gasoline, the oil industry's most important product, dropped from a peak of 15¢ per gallon in 1925 to 7 1/2¢ per gallon in 1929.[30] Seismic

Table 1.15
The Oil Companies in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Atlantic Refining	13	5	144	56	2.56	6.67	38	11.5	Aaa	13
Gulf Oil of Pa.	21	12	282	155	0.72	1.30	55	13.2	Aaa	27
Phillips Petroleum	9	5	121	62	4.26	8.33	51	13.2	A	6
Shell Union Oil	25	15	145	86	4.38	7.37	59	5.7	A	8
Sinclair Consolidated	16	7	90	42	4.44	9.50	47	5.6	Baa	17
Socony-Vacuum	22	14	155	103	3.33	5.00	67	7.2	Aaa	(3)[b]
Standard Oil (Calif.)	23	14	178	113	3.05	4.81	63	7.9	NR[a]	27
Standard Oil (Ind.)	14	9	166	113	5.16	7.56	68	12.1	NR	123
Standard Oil (N.J.)	17	10	169	98	2.41	4.15	58	9.7	Aaa	242
Texas Corp.	15	10	160	111	4.17	6.00	69	10.9	Aa	78
Averages	17.5	10.1	161	94	3.45	6.07	58	9.7	—	—

[a] NR = Not Rated.
[b] Brackets indicate short-term borrowing.

techniques had revolutionized the industry after their introduction in 1926, increasing oil discoveries so that oil reserves doubled between 1927 and 1939.

In the Crash oil company stocks dropped to only 10 times 1929 earnings per share and 94% of book value, compared to 12 1/2 times earnings per share and 181% of book value for all stocks. The only good point to be made for the oil stocks was that their average decline to 58% of their 1929 peak prices was modest compared with the average of 48% for all stocks. The lack of selling pressure merely reflected that there had been little speculative interest in the industry's stocks during the boom.

The Chemical Industry

Chemicals also went through a major expansion in the 1920s, especially in basic products like soda ash and sulphur. Chemical prices too had declined by almost 45% from their peak in 1920,[31] but financial and profit positions of the chemical companies were excellent. Industry profits were $157 million in 1929 on sales of $4 billion. None of the leading chemical companies had any debt to speak of. Chemical company stocks performed close to the averages for all companies, and at their highest prices they averaged 32 times 1929 earnings per share, 600% of book value, and a dividend yield of 1.88%. (See Table 1.16 for details on the industry.)

E. I. Du Pont de Nemours & Co. was the superior chemical company. It earned 22% on its equity, and its stock accordingly sold at 660% of book value, well above the average of 420% for all stocks. Du Pont was principally in explosives, plastics, paints, rayon, cellophane, dyes, and ethyl alcohol, but it also owned almost 10 million shares (22.9%) of General Motors Corp.—an investment begun in 1917 and completed in 1920 when it had acquired the shares of GM Chairman, William Durant, who found himself overextended in the market decline of that year. The 10 million shares equalled almost one General Motors share per Du Pont share. Du Pont's $43 million income from its General Motors stock exceeded operating income from its regular business by $8.5 million in 1929 and by $15 million in 1928.

Commercial Solvents Corp. was the most highly valued among the chemical stocks because of its 31.9% return on equity, but it was a small company. It had total assets of only $13 million, 2 1/2 million shares outstanding, and two plants in Illinois which produced butyl alcohol and other solvents through the Weizmann Process, on which it held worldwide exclusive license rights. However, Dow Chemical Co. and Monsanto Chemical Co. were also small companies, with total capitalizations of only $19 million and $15 million respectively but with returns on equity roughly half that of Commercial Solvents. Commercial Solvents stock sold at 46 times 1929 earnings per share and almost 1500% of book value at its peak price in 1929.

Chemical stocks in the Crash declined in line with the averages for all leading stocks. At their lowest prices chemical stocks were down 50% to 14 times 1929

Table 1.16
The Chemical Industry in 1929

	Price-earnings ratio		Market price as a % of book value		Dividend yield (%)		Low price as a % of 1929 high price	Return on equity (%)	Moody's bond ratings	Cash & equivalents ($ millions)
	High price	*Low price*	*High price*	*Low price*	*High price*	*Low price*				
Allied Chemical	28	16	374	207	1.69	3.05	55	13.3	Aa pfd.	87
Commercial Solvents	46	13	1,477	425	1.43	5.00	32	31.9	NR[a]	6
Dow Chemical	20	15	400	300	2.50	3.33	75	17.5	NR	1
E. I. Du Pont	33	11	660	250	2.25	6.50	35	22.2	Aa	34
Monsanto Chemical	28	16	253	147	1.54	2.66	58	9.0	Baa	2
Union Carbide	36	15	467	197	1.86	4.40	42	13.1	NR	68
Averages	31.8	14.3	605	254	1.88	4.16	50	17.8	—	—

[a] NR = Not Rated.