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APPENDIX E

SHORT TERM INTEREST RATES

THE MORE important of the short term interest rates presented in this study are those for call money, time money and commercial paper. The call money rates (Appendix A, Table 10, column 1 and Table 21) and the commercial paper rates (Appendix A, Table 10, column 3, and Table 23) are given monthly from January 1857; the time money rates (Appendix A, Table 10, column 2, and Table 22) from January 1890.[1] All three rates are from New York City markets. It was almost inevitable that these particular series should be chosen. No other short term interest series fulfilled so many of our requirements.[2]

First, the loans on which the rates are quoted are standardized. Though some call or time loans might carry higher or lower rates than those quoted, there was, at least hypothetically, a standard type of loan whose rate was quoted, and with which the non-standard loan could be compared.[3] Commercial paper rates might fluctuate but the loans on which the quotations were made were standardized. It is true that the standardization of all three types of loan was much less exact in the earlier than in the later period. Moreover, the standard loan itself seems to have changed somewhat with the passage of years. 'Commercial paper' in the 'sixties or even 'seventies was a more speculative investment than in the 'nineties.

[1] For the reasons why the time money rates are carried back only to January 1890 see the section on time money.

[2] Two other series of short term interest rates are presented in this book: commercial paper rates in Boston monthly, January 1831 to December 1860, and rates for bankers' acceptances in New York, January 1918 to January 1936. The Boston commercial paper rates will be found in Appendix A, Tables 24 and 25 and the New York bankers' acceptance rates in Appendix A, Table 26. The Boston rates are given for their general interest and because New York rates for this early period before 1857 are not obtainable in any such carefully collected manner. The New York bankers' acceptance rates are presented for their own sake and because they are often useful in checking the significance of an apparent change in direction of movement.

[3] The standard call or time loan in the earlier period was based on "mixed" collateral, worth in the market about 130 per cent of the amount of the loan. In the later period, 'all industrial' collateral began to be considered more and more acceptable. Non-standard loans were made at lower or higher rates. Collateral consisting entirely of government bonds usually called for a lower rate; collateral of a less marketable or more fluctuating type than the standard called for a higher rate. At present, curb market securities call for a higher rate than New York Stock Exchange securities.

Second, the published rates are in general accurate. Collection and publication seem to have been done usually with great regularity and care—though here again the rates of the earlier period are distinctly less reliable than those of the later period. However, even the early rates are seldom obscured by such hidden or difficult-to-measure considerations as the 'commissions' that occur in real estate mortgage transactions or the 'balances' required by banks of their customers.[4]

Third, all three rates are indices of money market conditions in New York City[5] and hence have very direct relations to the New York stock and bond markets. Though money market conditions in other centers may often have an appreciable effect on the New York security markets, it is much less direct and immediate. While changes in the rediscount rate of even the Bank of England have sometimes had a marked influence on American money rates and on the movement of the prices of American stocks and bonds, it has always been indirect, and in the earlier period covered by this study it was almost always quite negligible.

Fourth, they are relatively adequate indices. In this respect they are unlike the rates charged by ordinary banks or the rates at which money is borrowed on real estate. Tightness in the call money market manifests itself primarily in high rates, and not, as in the real estate mortgage market, by difficulty of obtaining loans.

Fifth, the rates have almost always applied to large volumes of loans.

Sixth, they are rates that can be carried far back in time. Short

[4] It is true that time loan rates have been, in some disturbed periods, quoted with 'commissions'. However, something can always be learned about the amount of such 'commissions' from the financial newspapers and magazines of the period. Moreover, there is an impersonality in the time loan market that is lacking in the case of loans of a bank to its regular customers, whose individual credit determines, to a considerable extent, the treatment they receive.

[5] The fact that only a small proportion of the total borrowing of the country is done through call money, time money, or commercial paper (in the strict sense), but that most is done directly from the banks by their own commercial customers is not important for our purposes. These loans have no such homogeneity as the loans giving rise to the three rate series with which we are comparing them. Moreover, while they would be important in a discussion of the effect of interest charges on the cost of doing business, they do not have the direct relation to the security markets that is found in call rates, time rates or even commercial paper rates. Since the Federal Reserve system, with its rediscounting privileges, was established, the relation of commercial paper rates to time money rates is not so close as formerly.

economic series are often interesting and important but the dangers of generalizing from them are great. The newspapers and magazines are cluttered up with charts showing apparently interesting relationships between series extending over half a dozen years or so. All too often, when such series are extended over a longer period, it is found that the interesting relationships appear only in the half dozen years. The short term interest rate series presented in this study show interesting relationships over long periods.[6]

While the general nature of the loans giving rise to the three rates—on call money, time money, and commercial paper—is doubtless well known to the reader, a somewhat detailed description would seem appropriate at this point. Both call and time loans are made to stock or bond brokers, or to investment bankers, who place in the hands of the lenders stocks or bonds, or both, as collateral.[7] The proceeds of these loans are used for the most part to finance speculative operations in the financial markets or the distribution of new issues of securities.[8] 'Commercial paper' is a generic term applied to promissory notes on which merchants and manufacturers borrow money for use in the ordinary course of their business. No stock or bond collateral is deposited to secure the loan. The note may or may not bear an endorsement, and thus become 'two name' paper. Ordinarily the note

[6] No series used for purposes of comparison in this book is carried further back than January 1857. The only series that could be carried further back, easily and with no decrease in accuracy, was that for clearings in New York City, which can be carried back to October 1853. Some deadline seemed highly desirable as comparisons between the series was the primary object. No better deadline presented itself than January 1857. For further discussion of this date, see Ch. III.

[7] Call loans are sometimes made on the security of bankers' acceptances deposited with the lender. They usually bear a lower rate of interest than those having stocks or bonds as collateral, because the acceptance collateral enjoys an extremely dependable and steady market. The proceeds of this type of call loan are ordinarily used for a purpose different from that to which other call loans are put, and the volume of such call funds outstanding has never been of important proportions. The rates dealt with in this book apply only to call loans secured with stocks or bonds as collateral.

[8] Of course, ordinary bank loans are often secured by the deposit of stocks or bonds as collateral, but they are not time loans. What are technically known as time loans are made to stock and bond brokers and investment bankers on securities as collateral, and, as already stated, the proceeds are almost invariably used for speculative and investment distribution purposes. It is in this technical sense that we use the term 'time loan'.

is accompanied by a financial statement of the borrower for the information of the purchaser of the paper. Generally, only those borrowers whose credit is well established and well known can make effective use of commercial paper as a means of procuring short term loans.

Neither call nor time loans are eligible for rediscount at the Federal Reserve banks. Commercial paper, when it meets the requirements laid down in the Federal Reserve Act, is eligible for rediscount.[9] Call loans are made for an indefinite period but subject to call on twenty-four hours' notice, the rate of interest being adjustable from day to day.[10] Time loans usually run from two to six months, though they are made for as short a period as one month or as long as six or seven months. Commercial paper now usually runs from four to six months. The amount of sixty to ninety day paper is at present quite negligible. Earlier, say before 1900, the proportion of such shorter term paper was much greater.

Call money rates are made in the New York Stock Exchange. The Money Committee of the New York Stock Exchange Clearing Corporation, after having studied the offerings from brokers and bankers whether made at fixed rates or at the market, and having examined the statements of brokers concerning what they wish to borrow and at what rates, fixes and posts at twenty minutes before eleven each morning a 'Renewal Rate'. This rate is set at the point that seems likely to result in placing a maximum amount of funds. This determination does not of itself, of course, obligate either borrower or lender to observe the rate. As a matter of fact, 'outside' rates, that is rates on transactions made elsewhere than at the money desk, often vary from the so-called 'official rate'—occasionally by

[9] The term 'commercial paper' is given a special and rather precise definition in the Federal Reserve Act for the purposes of administering the system set up under that law. The words are employed in a somewhat more inclusive sense here.

[10] Recent practice has developed what are sometimes called 'call loans specials'. These take the form of the ordinary call loan, but borrower and lender enter into a gentleman's agreement that renewals will be allowed from day to day at a fixed rate of interest for a specified term. Call loans made for sums over five thousand dollars are exempt from the New York State Usury Law. It is questionable whether time loans are exempt. It may also be noted that, generally speaking, call loans are now called as a matter of course in a somewhat more impersonal manner to suit the convenience of the lender than was formerly the case.

substantial margins. Nevertheless, in ordinary times some 95 per cent or more of the call loans, new and renewed, carry the renewal rate. There is no 'official' rate on new loans. The call money, rate employed throughout this book is the renewal rate, or in periods when exact information has been lacking, estimates of it.[11] Methods employed in these estimates are explained fully later in this appendix.

The years covered by this book fall into three periods with respect to the manner in which call rates on the New York Stock Exchange were actually made. In the first period, before September 1917, the rates were made at the 'Money Post' in almost exactly the same manner as the prices of stocks were made. The renewal rate was largely a matter of chance. After between $2,000,000 and $3,000,000 of new loans had been made, approximately the average of the rates of interest to be paid upon these loans was taken as the rate at which old loans should be renewed for that day. During the second period, September 1917-January 1919, the money market was under the supervision and control of the Money Committee. Since January 1919 the money desk on the floor of the Exchange has taken the place of the old 'money post'.[12]

[11] Formerly, the rates have sometimes varied very considerably according to the type of collateral, though variations due to this cause became less and less with the passage of time. The quotations used in constructing our index numbers were, in earlier times, those from 'mixed collateral'—i.e., rails and industrials listed on the New York Stock Exchange. At present, the distinction between rail and industrial collateral, for the purpose of determining rates, is not made.

[12] See Bartow Griffiss, *The New York Call Money Market.*

When a call loan is made, there are, of course, a lender and a borrower of money. Now, because the security behind the call loan is Stock Exchange collateral, there are a borrower and a lender of Stock Exchange collateral. The lender of money may be thought of as a borrower of collateral, and the borrower of money may be thought of as a lender of collateral. In general, they are not so thought of, because the essential element is that one individual wishes to borrow money and the other wishes to lend, while the passing of the collateral is thought of as a mere adjunct to the transaction. However, sometimes the demand is for collateral, not for money. When a broker has sold a stock short, he wishes to borrow that stock. He offers to lend money. However, when he wishes to borrow money, he must give a greater value of stock collateral than the amount of money that he wishes to borrow. When he wishes to borrow a stock, however, he must give a larger amount of money than the value of the stock. On this money that he lends the broker who lends him the stock he receives interest, though at a lower rate than the ruling rate for call loans. Sometimes this rate is so low as to be a zero, or even a minus rate. The stock is then said to be lending 'flat' or 'at a premium'. The rate of interest paid on this money is termed the 'lending rate on stocks' and is really a

Time loans are almost all placed by brokers acting as intermediaries between borrowers, usually stock brokers or investment bankers, and lenders, usually banks. There is no agency here performing functions similar or corresponding to the money desk of the New York Stock Exchange in the case of call loans.

The commercial paper market is an 'open market' in the sense that transactions are of a sort that do not bring the borrower and the lender into direct contact as is the case when a customer procures a loan from his bank. The borrower on commercial paper simply makes a promissory note, has it endorsed or not, according to circumstances (now ordinarily not), and offers it for sale to a broker, who buys it and holds it or, as is usually the case, sells it to a bank or other investor who wishes to place funds temporarily in such paper. The note may be bought and sold in this way several times before maturity. The holder at maturity, either directly or through a broker, presents it to the maker for payment. The rates on such loans naturally vary with maturity and also with the goodness of the name or names they bear. Such loans may be eligible for rediscount at the Reserve banks and their rates thus be more directly affected by the prevailing rediscount rate than are the rates of time loans, which are not eligible for rediscount. Member banks now as a matter of practice obtain needed funds from the Reserve system largely on their own notes with government bonds as collateral or upon customers' eligible paper without collateral.

The decrease during the last few years in the amount of commercial paper outstanding is due primarily to the elimination of the commercial paper 'broker'. Large corporations have established direct relations with entire chains of banks, and when they wish money they get it directly. Even smaller borrowers have recently tended more and more to deal directly with the banks. Bankers' acceptances have probably not taken up much of the commercial paper business. The overlap is small. For example, a large amount of commercial paper originates in the textile houses and these do not enter the acceptance

(Footnote [12] concluded)

peculiar type of call money. In the early days, when there was often a demand for government bonds, the rate of interest paid on loans that were secured by them was often much lower than the rate on loans secured by other collateral, no matter how good the collateral might be. This low rate of interest on loans secured by government bonds was really a type of call loan, in its nature between the lending rate on stocks and ordinary call money.

market. Cotton financing is the biggest item in the acceptance market.

It is extremely difficult to collect any very reliable and continuous series of quotations for short term interest rates in New York City before 1866.[13] The *Commercial and Financial Chronicle* was first pub-

[13] There is one source for early commercial paper rates (almost certainly Boston rates) giving practically continuous and apparently uniform quotations monthly as far back as January 1831: Bigelow and Martin. The Bigelow series runs from January 1831 to December 1860 monthly. The Martin series runs from January 1831 into the 'nineties. For the period 1831–60 Martin seems to have copied, or at least used, Bigelow's table. Bigelow's table of Boston (?) rates is reproduced in Appendix A, Table 25. Martin's table (for the period 1831–1860) is reproduced in Appendix A, Table 24.

Erastus B. Bigelow, inventor of the power loom, a New England mill owner, published in 1862, at Boston, a large quarto entitled *The Tariff Question . . . with statistical and comparative tables.* Appendix 112 (pp. 204, 205) contains a table entitled *Statement of the Comparative Rates of Interest in England, France and the United States each month in each year, from 1831 to 1860. Compiled from authentic sources.* The American rates are described as "Street Rates on First Class Paper in Boston and New York, at the beginning, middle and end of the month". Where this table contains two quotations for a month, interpretation is sometimes difficult. In his discussion of these rates (pp. 66–69) Bigelow makes no statement concerning the "authentic sources" from which his table was compiled. The book was noticed and the interest table copied in the London *Economist* of December 27, 1862, pp. 1434, 1435. Again no discussion of sources. The book was reviewed by Leslie Stephen in *MacMillan's Magazine,* Vol. 7, p. 126. No references were made there to the interest tables.

Joseph G. Martin, a Boston stock broker, published from 1856 to 1897 a series of books on the History of the Boston Stock Market. The first, *Twenty-one Years in the Boston Stock Market,* (Boston, 1856), contained no American interest rates. The second, *Seventy-three Years History of the Boston Stock Market* (Boston, 1871), contained a table (pp. 37–40) entitled Interest Rates for Money, 1831–1871. No statement is made in this table or elsewhere in the book whether these are New York or Boston rates. The only comment is: "The following rates are for first-class, three to six months, bankable paper." However, when Martin reprints the same series of interest rates in his later book, *One Hundred Years' History of the Boston Stock Market (1798–1898),* he calls the series The Course of the Boston Money Market.

Now, in view of the facts that Martin's first book (1856) contained no American interest rates, that Bigelow's book appeared in 1862 and that the table in Martin's second book (1871) (as far as can be gathered from the form in which Martin presents his material) is almost identical with Bigelow's table for the years 1831 to 1860, it seems fair to assume that Martin's early figures were taken from Bigelow's book. However, in spite of the dates of publication, it is possible that Bigelow obtained his interest rates from *unpublished* material collected by Martin. Martin was intensely interested in all that related to the statistical history of the Boston stock and money markets and was continually collecting quotations of all kinds. A large amount of his unpublished manuscript material is now in the Widener Library, Harvard University.

lished July 1, 1865, but only gradually began its careful collection of short term interest rate material. Though the amount of data in existence for the period before 1866 is quite large, it is extremely irregular with respect to both quality and periods for which there are quotations. Moreover, upon close examination, the material that does exist is found to be extremely heterogeneous; variations in quoted rates for the same date are sometimes traceable to the fact that the quotations are for different types of loan and sometimes seem the result merely of obtaining information from different primary sources, such as different brokers.

At present, the chief *primary* sources for interest rates in New York City in the period before the publication of the *Commercial and Financial Chronicle* are the daily newspapers, *Hunt's Merchants' Magazine,* and the *Bankers' Magazine.* Of these sources, the newspapers, as a group, are much the most regular in their quotations. Nevertheless, it is impossible to work continuously with one paper. Any one paper either stops quoting or its quotations become unmistakably very inaccurate. One of the signs of such inaccuracy is the quoting of an unchanging rate day after day for long periods, the context showing that proper attention is not being given to the subject. It might be thought that if we always had at least one newspaper giving quotations our problem could be easily solved. However, the newspapers do not always agree. When quoting commercial paper they are not always quoting the same grade. This is especially important to watch in this early period. The rate of discount on commercial paper 'not well known' was often two or three times as great as on 'first class acceptances'. The newspapers rather commonly quote 'commercial paper' without any specifications as to grade. Moreover, there is unmistakable evidence that this did not always mean the highest grade.

Hunt's Merchants' Magazine and the *Bankers' Magazine* are even more irregular in their quotations than the newspapers. For example, neither quotes interest rates of any kind during the important year 1857. Moreover, the dangers involved in shifting back and forth from one to the other are just as real as in the case of the newspapers.

(Footnote [13] concluded)

Martin calls the rates Boston rates, and Bigelow calls them Boston and New York rates. Now Boston and New York rates were not identical, and an examination of the newspapers and periodicals has convinced me that the Bigelow-Martin rates are Boston and not New York rates.

Quotations for what is termed the same type of loan continually vary. Neither *Hunt's Merchants' Magazine* nor the *Bankers' Magazine* is always a primary source. For example, when *Hunt's Merchants' Magazine* in January 1859 (Vol. 40, p. 76) begins to quote interest rates again (having lapsed for some years) and we find back rates for October 25, November 24, December 6 and December 14, 1858, we must not assume that all these figures are primary sources. The October and November figures are almost certainly taken from the *Bankers' Magazine* of December 1858 (p. 510). In the same way *Hunt's Merchants' Magazine* figures from May 1861 to October 1861 are from the *Bankers' Magazine*. Crude mistakes that are obviously due to errors in copying often appear. Numerous mistakes are apparent even when *Hunt's Merchants' Magazine* is copying from its own files.[14]

Aside from the general heterogeneity of the data, another source of embarrassment in the early period is the difficulty of obtaining quotations when the prevailing rates are high. There are two reasons for this difficulty. First, in times of financial panic all newspaper quotations tended to cease. Not only was there an apparent prejudice against publication but also it was often extremely difficult to discover what the rates really were. 'High and irregular' runs the legend. Second, because of the usury laws, high rates were disguised by means of 'commissions'.[15]

Secondary sources for interest rates in the period before 1866 are magazine and newspaper articles, and brokers' annual reviews. So few of these articles and reviews are still in existence that they are of little value except as partial checks on the accuracy of complete tables such as Bigelow's or those we have constructed for this volume. For the period January 1862 to December 1865 we have used Wesley

[14] For example, comparison of dates in the table of rates in Vol. 42, p. 196 with the tables in Vol. 41, pp. 716, 580 and 452 is quite startling.

[15] The *Commercial and Financial Chronicle* was the first journal to make any attempt at regularly quoting these commissions. The earlier publications seldom even mentioned commissions, let alone quoting them. As an example of the results of this practice, the reader may examine the table of interest rates for 1868–70 drawn up by the then Manager of the New York Clearing House (*Commercial and Financial Chronicle,* February 4, 1871, p. 138). The rate for each week in 1869 is given as 7 per cent. During 1869 call loan rates, as averaged from quotations in the *Commercial and Financial Chronicle,* exceeded 7 per cent nineteen weeks out of the fifty-two, while corresponding average weekly rates on commercial paper exceeded 7 per cent every week in the year.

C. Mitchell's table of monthly call loan rates given in his *History of the Greenbacks,* p. 367. We checked with original sources and decided that Dr. Mitchell's figures were probably as good as could be constructed for this very difficult period. Dr. Mitchell makes some comments on the inadequacy of the sources for this war period 1862–65.

"To my knowledge there are no systematic records of rates of interest on long-time business loans, and the data for short-time loans are unusually meagre and doubtful. In 1860, *Hunt's Merchant's Magazine* and the *Bankers' Magazine*—the most prominent business periodicals of the day—were publishing each month tables showing the rates of interest paid in New York for loans of several different kinds. But during the War, they ceased these systematic reports and one can glean from them but occasional scattering statements" (p. 365).

"Under these circumstances, it seems justifiable to attempt constructing a new table from the reports of the daily newspapers. On examination, however, one finds that this course also is open to objection. In the first place, regular statements can be found only for one kind of transaction —loans on call. In the second place, whenever the rates for call loans rise above 7 per cent the reporter is apt to say merely that the ruling rate is 'the legal maximum plus a small commission'. In the third place, one is justified in feeling some suspicions of the accuracy of newspaper reports. However, I have compiled a table from the financial columns of the newspapers of the rate for call loans every Saturday from 1862 to 1865. In doing so, I have been compelled to supplement one paper by another, for no one gives the reports with perfect regularity for the whole period" (pp. 366–7).

In the period January 1866 to January 1923 we have relied almost entirely on the *Commercial and Financial Chronicle* and its *Financial Review.* These two sources are practically identical. Where they differ we have in the earlier period given a little more consideration to the *Chronicle,* in the later period to the *Financial Review.* There is some evidence, both internal and external, that in the later period the figures in the *Chronicle* were reconsidered and checked before being incorporated in the *Review.* In periods of violent fluctuation, when highs and lows gave little evidence concerning averages, we have examined newspapers and magazines other than the *Chronicle.* However, we have kept as close to the *Chronicle* as we could, being convinced that it was the best source and also that it was extremely undesirable to move from source to source if we wished to have a homogeneous series of quotations.

In the period January 1923 to January 1936 we have kept to the *Chronicle* for time money rates and commercial paper rates, but have used the *Federal Reserve Bulletin* figures for call money rates. These figures are monthly averages of the daily renewal rates given by the *Chronicle.*

The sources most used in obtaining the original data, from which the monthly averages were constructed, were:

I For Call Money Rates

Jan. 1857—Dec. 1859	*Journal of Commerce*
Jan. 1860—Dec. 1861	*Hunt's Merchants' Magazine*
Jan. 1862—Dec. 1865	Wesley C. Mitchell's *History of the Greenbacks*
Jan. 1866—Dec. 1889	*Commercial and Financial Chronicle*
Jan. 1890—Dec. 1919	*Financial Review* (published by the *Commercial and Financial Chronicle*) and *Commercial and Financial Chronicle*
Jan. 1920—Dec. 1922	*Financial Review*
Jan. 1923—Jan. 1936	*Federal Reserve Bulletins*

II For 90-Day Time Money Rates

Jan. 1890[16]—Dec. 1923	*Financial Review*
Jan. 1924 —Jan. 1936	*Commercial and Financial Chronicle*

III For 60 to 90 Day Commercial Paper Rates[17]

Jan. 1857—Dec. 1859	*Journal of Commerce*
Jan. 1860—Dec. 1861	*Hunt's Merchants' Magazine* and *Bankers' Magazine*

[16] No monthly index of time money rates was constructed further back than January 1890. Before the Federal Reserve system came into being, the movements of time money and of commercial paper rates were so similar that it is worth collecting figures for both rates only when the accuracy of the original data is sufficiently great to make the differences between the two rates significant. An examination of the sources for commercial paper rates and time money rates in the period before January 1890 suggests that significant differences between the two series would not be obtainable for very many years previous to 1890. In the earliest period it is practically impossible to get any continuous quotations for time money. However, beginning with January 1890, the *Commercial and Financial Chronicle* published in their *Financial Review,* each year, a very complete table of time money rates weekly for various maturities from thirty days to six months.

[17] The rates for January 1857 to December 1865 are attempts to estimate what the rates were for 60-90 day prime double name paper. In this early period it is often

Jan. 1862—June 1862	*Hunt's Merchants' Magazine, Bankers' Magazine* and New York newspapers
July 1862—Dec. 1865	New York newspapers
Jan. 1866—Jan. 1936	*Financial Review* and *Commercial and Financial Chronicle*

The above sets of sources are the ones most used in each period. All possible sources were used in the earliest period. No single source stood out in the way that the *Commercial and Financial Chronicle* does after 1867. For example, though the New York *Journal of Commerce* call money rates were weighted more heavily from January 1857 to December 1859 than the rates obtained from any other single source, quotations for odd months in 1858 and the entire year 1859 were obtained from *Hunt's Merchants' Magazine* and the *Bankers' Magazine*. Quotations for 1859 were also obtained from the *New York Herald*. An attempt was made to weigh and consider these various quotations and to determine to what extent they should influence us, if at all, in accepting the figures of the *Journal of Commerce*.

For commercial paper rates during the same period, January 1857 to December 1859, we weighted most heavily the same source as was most heavily weighted for call money rates, namely the *Journal of Commerce*. However, the *Bankers' Magazine* was quoting throughout 1857, irregularly in 1858, and throughout 1859. *Hunt's Merchants' Magazine* was quoting rates twice a month in the later part of 1858 and throughout 1859. The New York Chamber of Commerce published a compilation of monthly rates for the year 1858. To go into details as to where each item was found would be wearisome and futile. It may be mentioned, however, that for the early period the following newspapers were carefully examined:

New York Herald
New York Evening Post (daily and semi-weekly)
New York Commercial Advertiser
New York Tribune (daily and semi-weekly)
New York Weekly Herald

(Footnote [17] concluded)
not clear what grade of paper is being quoted. The rates for January 1866 to December 1923 are for 60–90 day prime double name paper. The rates for January 1924 to January 1936 are for 4-6 month prime double (or single) name paper. In this period 60–90 day paper was quoted nominally at the same rate as 4–6 month paper. The amount of the shorter maturity paper was becoming negligible.

Journal of Commerce
New York Sun
New York Times
Shipping and Commercial List and *New York Price Current*

In some cases, a few hours were sufficient to convince one that nothing helpful in the way of either figures or text was to be found. In other cases, useful information was found here and there.

No intricate mathematical method of averaging was used in getting monthly figures from the daily newspaper quotations. All quotations, and remarks on rates, obtainable from the various papers for a particular month were tabulated and an estimated average made from careful inspection. There were, of course, many gaps in the daily quotations. Many simple little devices were used in connection with the various sources.

In the period January 1860 to December 1861, where the most used sources given in the table above are *Hunt's Merchants' Magazine* and the *Bankers' Magazine,* the rates used are almost exact arithmetic averages of the rates obtained from these two sources. Newspaper quotations were scanty but seemed to corroborate the magazine rates. In 1866 and 1867 we did not accept the rates from the *Chronicle* without question as we did in the later period. The quotations were carefully checked with other sources and final estimates made.[18]

[18] We did not change Dr. Mitchell's figures for call money rates in the last six months of 1865 though compilations from the *Chronicle* gave appreciably different results, for we did not feel sufficient confidence in the accuracy of these earliest *Chronicle* figures. The rates we derived from the *Chronicle* compare as follows with Mitchell's rates derived from newspapers.

	1865	
	Chronicle	*Mitchell*
July	5.38	5.5
August	6.10	5.9
September	5.00	6.0
October	8.44	7.0
November	6.84	6.8
December	6.88	6.8

Before any conclusions are drawn from the table, attention should be called to the rather complicated manner in which the *Chronicle* was quoting all its rates at this time. Even the quotations for call money rates do not impress the reader with their adequacy and the commercial paper rates are almost unusable because they vary with the type of loan. Note the following quotations from the *Chronicle*:

The type of collateral influenced call money rates markedly for a considerable period during the regime of the national banking system. As an extreme example, attention may be drawn to the fact that loans on government bonds in the early days were somewhat analogous to loans based on short sales at present. In both cases, the real borrower—the party for whom the borrowing was most important—was the borrower of the security. Call loans with United States government bonds as collateral were made by banks to obtain bonds to deposit with the United States Treasury, in order that the bank might issue currency. They were primarily loans of government bonds, not loans of money.[19]

In the earlier period the call loan market was not developed to anything like its present degree. The call loan was not so strictly 'call'

(Footnote [18] concluded)

July 8, 1865, p. 42

". . . . Dry goods bills are current at 6½ to 7½ per cent; grocers 6½ to 7½; produce commission 7½ to 9 per cent."

July 15, 1865

"Discounts are dull. There is a larger supply of bills, especially of grocers, but the demand is quiet, the rates ranging from 6 to 10 per cent. We quote the best grades of the several classes of paper as follows:—

Dry Goods	6½ to 7	Bankers	6 to 7
Grocers	6½ to 7	Produce Commission	9 to 10"

November 11, 1865

"Prime bills pass at 7 to 9 per cent, and second class names at 10 to 15 per cent. Bankers bills are current at 7 to 8 per cent, dry goods commission at 8 to 10, produce commission at 9 to 12 per cent, grocers at 9 to 10 per cent."

March 31, 1866, p. 394

"The following are the rates for the various classes of loans:

	per cent
Call loans	5 to ..
Loans on bonds and mortgage	6 to 7
Prime endorsed bills 2 months	6½ to 7½
Good endorsed bills 3 and 4 months	7 to 8
" " —single names	9 to 10
Lower grades	10 to 15"

These last quotations are in a form distinctly easier to handle than the form in which the preceding quotations appeared. By 1868 the *Chronicle* quotations are all relatively easy to use.

[19] Compare . . . . "the demand for Government Bonds was so large to put in the Treasury as collateral that the rates to Government Bond dealers fell off 3 per cent, although this transaction is rather a loan of Government Bonds than a loan of money" (*Commercial and Financial Chronicle,* March 29, 1879), p. 317.

as at present, and the market was not so impersonal as it has become.[20]

In the period January 1890 to December 1923 almost complete reliance was placed on the time money figures contained in the *Financial Review* though for numerous dates these were checked and compared with the *Chronicle's* figures and text. This was especially true in periods when 'commissions' were being paid. The *Chronicle's* text was then used to help us to measure their effect on the rate actually paid. Throughout the period January 1890 to date the time loan rates are for loans with 'mixed collateral'.

In the period from 1857 to about 1910 our 'commercial paper' may be thought of as rather strictly rates for 60–90 day paper. After this period this short maturity paper becomes more and more rare, and the rates are, more and more, rates for 3 to 4 month paper. However, in this later period, what 60–90 day paper was made commonly went at the 3–4 month rate. After 1890, and until the very recent period, the quotations used were usually entitled 'double name choice 60–90 day paper'. In the early days where there were quotations for prime endorsed bills 2 month, and good endorsed bills 3 and 4 month, the method by which 'double name choice 60–90 day paper' was estimated was to use the quotation for 'prime endorsed bills 2 month' as the more important single piece of evidence, but sometimes to adjust the figures in the light of changes in the quotations for 'good endorsed bills 3 and 4 month", and sometimes in the light of the text. 'Prime paper' seemed usually to mean A No. 1 short time (2 month) endorsed notes.

Nearly all commercial paper is at present single name. In the earlier period there was a certain amount of extra fine two name paper. Present day newspaper and magazine quotations for 'double name choice 60–90 day paper' are really quotations for commercial paper that is neither 60–90 day nor two name. They are really quotations for 4 to 6 month high grade single name paper.

Commercial paper is made by the larger department and men's furnishing stores, jobbers of dry goods, hardware, shoes, groceries,

[20] Compare . . . . "The precautionary feeling among lenders is naturally on the increase as the Fall months draw nearer, and its working is fairly illustrated in a circumstance we recently heard of a bank's calling in a loan from one party and lending to another at a much lower rate, simply because the latter was a better borrower and would pay up on call, without asking any extension" (*Ibid.,* August 16, 1873), p. 213.

floor coverings, etc., the manufacturers of cotton, silk and woolen goods, clothing, etc.

In constructing monthly average rates from weekly averages for call money, time money or commercial paper, if the week-end (Saturday) occurred on the 1st or 2d of the month, it was considered as a week entirely in the preceding month. If the week-end occurred on the 4th, 5th or 6th of the month, the week was considered as entirely in the later month. If it occurred on the 3d of the month, the weeks average was considered a quotation for half a week in the earlier month and half a week in the later month.

Most of the monthly rates were constructed from weekly figures, except when conditions were so disturbed as to make it necessary to examine daily rates. In such disturbed times the *Chronicle* generally quoted daily rates or at least discussed them. When the *Chronicle* quoted them, no other source was commonly referred to.

In constructing monthly call rate averages from weekly rates, the first operation (with the data before 1890) was to obtain a set of *weekly* average rates. The *Chronicle* commonly quoted a high rate and a low rate for the week. If, for any particular week, the range between these rates was quite small, their arithmetic average was considered to be the weekly average rate.

But the actual 'high' and 'low' and estimated 'ruling' weekly rates given by the *Financial Reviews* back to the beginning of 1890 show in figures a condition that the *Chronicle* in the earlier years had so often verbally described. Almost invariably, when the difference between the 'high' rate and the 'low' rate is at all large, the 'ruling' rate is much closer to the 'low' than the 'high' rate. As we were unable to invent an 'average' (beyond the harmonic, for example) that gave a good description of the relation, we constructed a nomograph (designed to fit the *Financial Review* figures as closely as possible) from which, given a 'high' and a 'low' rate, it was possible to read a 'ruling' rate. When, in the period *before* 1890, the weekly range was large and reliable daily rates were not obtainable, we used this nomograph (in conjunction with any *verbal* comment) to calculate a weekly average or 'ruling' rate. If reliable daily rates were obtainable we used them to construct the weekly average, having first used the nomograph (and verbal comment) to obtain a daily average for any *day* in which the range was abnormally large.

We believe this procedure gives a much better approximation to a weighted average of the rates of all the loans of the week than can be obtained by a blind use of arithmetic averages of high and low rates. But it naturally results in a series with no such stupendous peaks as series based on arithmetic averaging.