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BUREAU OF BUSINESS RESEARCH
COLLEGE OF COMMERCE AND BUSINESS
ADMINISTRATION

BULLETIN NO 17
(Distributed, January, 1928)

CHICAGO AS A MONEY
MARKET



PUBLISHED BY THE UNIVERSITY OF ILLINOIS, URBANA
1928

It is the purpose of the Bureau of Business Research of the University of Illinois—

- (1) to study and as far as possible to explain economic and industrial conditions within the State;**
- (2) to direct attention to experience-tested practices of good business management; and,**
- (3) to investigate methods for securing the best executive control of business.**

BUREAU OF BUSINESS RESEARCH
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BULLETIN NO. 17

CHICAGO AS A MONEY MARKET
Some Factors Favoring the Development of a Middle
Western Money Market

PUBLISHED BY THE UNIVERSITY OF ILLINOIS, URBANA
1928

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PREFACE

The business collapse of 1920 showed strikingly the position of Chicago in the commerce of this country and the tardiness of the Chicago money market in developing independent management of middle western finances. During the development of the Middle West it has been logical enough for Chicago to follow rather than to lead in the money market because the large area surrounding the middle western market had long been a borrowing community; but the productivity of the Mississippi Valley has favored the growth of abundant capital and the great demand for the products of this section of the country at very high prices during the World War changed this area from a borrowing to a lending community. This change placed the Chicago money market in a very different relationship to the Middle West. As long as the Chicago market was itself a borrower, middle westerners as a whole were compelled to get their funds where they could, but now that the Chicago market is a lender, they can get their funds at home.

This turn of position in the money market is calling for increased initiative and direct management. It, therefore, is becoming necessary for the Chicago market to develop the facilities for managing its own financial relations. The larger development of the middle western money market will enable Chicago to accommodate the Mississippi Valley with very little strain and also relieve New York of a part of the hardship of peak loads. Middle western and western demands for accommodation may be expected to be absorbed in part in Chicago instead of being passed on to New York. This would tend to reduce the peaks and valleys of money market irregularity, and thus contribute to stability in the monetary conditions of the country.

Such outstanding needs as these encourage the study of the possibilities of the Chicago money market, and for several years past statistical and factual information about Chicago and middle western commerce have been accumulating at the University of Illinois. Bankers and business men have cooperated to the fullest extent in the collection of these data, and lately the Bureau of Business Research has been lending its support to the work of collecting and analyzing Middle West money market data.

The present bulletin is introductory in nature and aims at little more than opening up the subject. It is expected that much of the material which receives only passing mention here will be made the basis for more detailed study.

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Acknowledgment is made of the interest and hearty cooperation of bankers and business men and for the data supplied by them. Acknowledgment is also made to Professor Ivan Wright of the Department of Economics for the original idea of the bulletin and for his subsequent helpful suggestions, and to Mr. D. M. Dailey and other members of the Bureau staff for the work done on the manuscript.

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I. THE FACTORS INVOLVED IN A MONEY MARKET STUDY

The aim of this initial study is to make an introductory survey of the essential factors which comprise the Chicago money market. At the outset it is noteworthy to reflect that no intensive analysis of the money market in Chicago has been made available. Numerous studies have been made of the London money market, some of which are very complete; now and then there has appeared a contribution covering some phase of the New York credit structure, but scarcely any research on the Chicago market has been undertaken.

A money market has features like other markets. Goods, money, and credit are exchanged in the market places. Like a commodity market, the money market has its beginnings in specialization and division of labor, the purpose being to facilitate the exchange of goods. As barter economy is superseded by money economy, and the latter in turn is supplemented to a very large extent by credit facilities, the money market becomes of increasing importance and there is a constantly growing tendency toward the concentration of credit institutions within a locality which is favorably situated. This favorably situated locality with its growing machinery for the transfer of funds steadily becomes the shopping center for those who have capital to loan or invest and for those who desire funds for productive operations or for speculative purposes. This center, as time goes on, establishes contacts with ever more distant points and thus becomes a market of constantly expanding limits.

In many respects the money market is the most dominating market. Modern commodity markets of every kind depend for the satisfactory facilitation of their exchanges upon highly organized money markets. One of the most noteworthy features of present day economy is the ease and facility with which great money markets carry on their operations. While the fundamental principles of a money market are like those of other markets, its inherent characteristics render it the most difficult of all markets to analyze. The most subtle influences and baffling causal relationships of modern economic society are found in that market which facilitates the exchange of funds and the extension of credit.

There appear to be four fundamental factors to be analyzed in a survey of any money market:

1. *Industrial and commercial resources.* Here is the background of the money market. It is through industrial activity—production—

that funds are made available for the money market. Here, likewise, arises the demand for funds.

2. *Bank and financial resources.* The heart of any money market is the banks. Every transaction of the market is related at some point to a banking operation. It is a banking function which brings together the man with funds seeking investment and the borrowing producer. Again it is the bank reserves which support the vast credit structure of the money market.

3. *Money rates.* The money market is the most sensitive of all markets and no single index of money market conditions is so vital as the rates paid by borrowers for the use of funds. Nothing else so reveals the extent of organization or the competition prevailing in the money market as do the money rates.

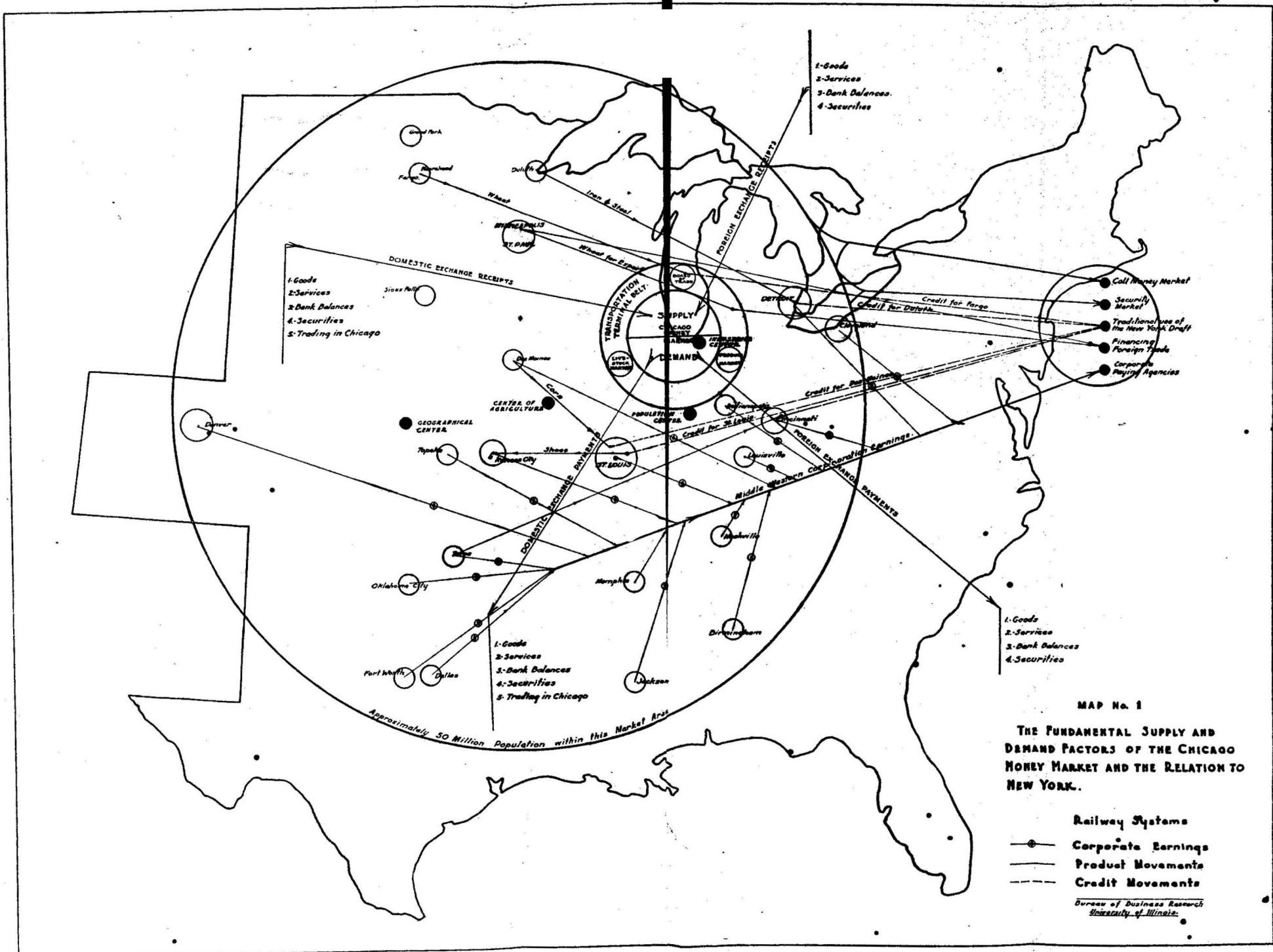
4. *The general price level.* Every exchange today, of whatever nature, takes place in terms of money. Money functioning as the common measure of value, of course, greatly facilitates the exchange of goods. However, inasmuch as money is characteristically a commodity, its value is determined by the same economic laws that determine the value of all other goods. The instability of the purchasing power of money brought about by changes in its demand and supply makes necessary a study of general prices along with money rates. Not only a study of the purchasing power of money but the adoption of a sound and consistent theory of prices is imperative for a rational money and credit policy.

The foregoing with respect to general prices serves merely to point out a problem which is involved in a comprehensive study of any money market. Space in this introductory bulletin will not permit a detailed analysis.

Money market foundations. The motivating force behind all money market transactions is the exchange of economic wealth and property rights. Money and credit play the important rôle in accelerating and facilitating the processes of modern exchange; a second factor of cardinal importance is transportation. Transportation limits the extent to which a market may expand its boundaries.

Chicago owes its unprecedented development to its strategic location with respect to transportation routes. Map 1 clearly shows the way in which 23 of the important trunk line railways from all parts of the United States converge at Chicago and make the city the world's greatest railroad center.¹ Being situated at the foot of Lake Michigan

¹If space permitted, a comparison with New York, Philadelphia, and other transportation centers would be instructive and there is no intention to minimize these.



gives the city an additional advantage with respect to transportation service. As a result of her accessibility, Chicago has become the leading grain and live stock market in the world.

The large circle on Map 1 indicates the approximate Chicago market area with about 50,000,000 population and 1,125,000 square miles. With her railroads penetrating into every portion of this large area Chicago can almost be called the hub of the nation. The center of industry is only a few miles removed; the agricultural and industrial centers are less than 200 miles away; and the geographical center falls well within this area.² The immense slaughtering, wool, and leather industries of Chicago, as well as the iron and steel manufacturing of East Chicago, Joliet, and Gary have been major influences in moving the industrial center westward in the last twenty years.

These conditions have not created heretofore an adequate money market in this area. While there is a concentration of industry and a convergence of transportation at Chicago, there has not been anything like an equivalent convergence of the financing of this commerce. It is evident, even from Map 1 alone, that the lines of transportation converge but that the lines indicating financing and credit point for the most part away from Chicago. The capital requirements of agriculture and industry and the marketing of the products give rise to the demand for investment and banking funds. The relative ease with which money and credit flow from place to place through the smooth operations of national and international money market machinery, makes it possible, even though not the most economical and convenient, for money market transactions to take place far removed from the market handling the physical goods.

The activities of the London money market in financing international trade clearly illustrates this point. Because of the momentum of an early start, New York enjoys much the same position with respect to our national exchange as London does in international exchange. Long-established lines of credit reaching into the East have made the use of the New York draft the traditional method of financing domestic trade. The map referred to above gives some hypothetical illustrations of the use made of the New York draft. As indicated, exchange accumulates in New York and is then drawn upon to settle obligations in the different banking centers all over the United States.

Many corporations, although operating principally in the West, maintain balances and paying agencies in New York. Such an arrange-

²See Map 1 for the exact location of these centers.

ment can be explained, from an historical viewpoint, by the fact that the western country was gradually developed by eastern people. These people who ventured into the West had to rely on eastern capital. Naturally, many of the old credit lines have been maintained and will be for a long time.

An extremely important factor in the prestige of the New York money market is the presence of a stock exchange which has no equal in organization and operation. The stock exchange is a fundamental part of the money market machinery. Its money desk furnishes a remarkably elastic demand for loanable funds. The call market attracts funds from all over the world which are seeking investment and surplus funds employed in call loans can be very readily withdrawn in case of need. The great flexibility of this market is indicated by the rapid and sometimes extreme fluctuation of the call money rate.

Another feature which the New York money market enjoys, by virtue of being in a seaboard town, is that of financing foreign trade. It has been customary for the ocean bill of lading to originate in New York and a prejudice exists on the part of foreign importers against inland bills of lading. Consequently, the financing of foreign trade through New York has developed an acceptance business which is considerably ahead of the feeble beginnings made by Chicago. Yet the Chicago banks with their many foreign correspondents furnish adequate machinery for financing international trade, if the foreign importers and domestic exporters choose these banks as the place for payments.

Map 1 also serves to illustrate the factors of demand and supply in the Chicago money market and to emphasize some of the features of the New York money market which are absent or relatively undeveloped in Chicago. It shows in a hypothetical way: the use of the New York draft in domestic exchange; the development of the acceptance market in New York through its foreign trade advantage; the importance of the call money market in attracting the surplus funds of out-of-town banks to New York for investment; corporation balances and paying agencies in New York into which corporation earnings flow; the stock and bond exchanges which list the securities of most of the large corporations in the country; and the flow of funds to New York in payment for securities bought and also the deposits kept there by the security underwriters.

The map also indicates the principal classes of demand and supply factors in domestic and foreign exchange with reference to the Chicago money market. Under the classification of supply factors of the money

market or those factors which aid the accumulation of funds are the following:

1. *Goods.* The exportation of live stock, grains, raw materials of various kinds, and finished manufactured products are examples of this factor.

2. *Securities.* A large volume of securities is sold by corporations keeping their balances in Chicago banks. The sale of all securities sold on the Chicago stock and bond exchange is at least a temporary factor of supply, although when the funds are withdrawn they cause a demand on the money market. Securities are the most readily marketable forms of property rights.

3. *Bank balances.* Under this heading are considered all of the funds maintained in Chicago, permanently or otherwise, including such as balances of corporations and outside banks which have correspondents in Chicago for the purpose of loaning, financing trade, and travelers, settling interest and dividend payments, and for other correspondent relations.

4. *Services.* Here are included receipts for banking operations transacted by Chicago financial institutions and agencies, brokerages and commissions, profits from branches, transportation charges and amounts received for all personal services rendered.

5. *Trading within the Chicago area.* An increased volume of trade attracts funds to a market. This factor is indirect, and the demand for the additional funds offsets the supply for the most part, but nevertheless this is an important factor when considering the total amount of the medium of exchange used in a money market.

The demand side of each of the listed supply factors are more or less obvious and accordingly will be stated only briefly:

1. The payments made for the importation of goods.

2. Securities sold in the Chicago money market by branches of outside firms.

3. The bank balances maintained by Chicago in other centers for the purpose of settling accounts as a result of correspondent relations.

4. Payments Chicago makes to out-of-town agencies for brokerages, commissions, transportation charges, and amounts paid for all personal services received.

5. Trading within the Chicago money market is both a demand and supply factor. Larger trade creates a demand for money and credit, and a larger supply is drawn to the market.

II. THE RISE OF CHICAGO AS A PRIMARY INDUSTRIAL AND COMMERCIAL CENTER

The abundant natural resources of the Mississippi Valley furnish the basic materials for manufacturing and trade converging at Chicago as the center of distribution. Money and credit are necessary factors for the production and distribution of this wealth. What could be more natural, therefore, than the development of a strong money market at this center of commerce and industry? The wealth of the area constitutes the principal source of the money market funds, and at the same time furnishes the chief demand for money and credit. In the following pages an attempt is made to indicate only some of the broad outlines of economic conditions and forces contributing to this concentration of industry, commerce, and moneyed capital at Chicago.

The greatness of Chicago as the inland seat of manufacturing and commerce lies mainly in her strategic location. Situated at the foot of Lake Michigan the city has become a focal point of national paths of commerce. The terminals of 23 trunk line railroads are located in Chicago; these lines represent approximately 40 per cent of the railway mileage of the entire country.

One of the best indexes of industrial activity is the trend of car loadings. Table I indicates the trend in the number of cars loaded in the Chicago Terminal District.

An analysis of freight tonnage originating with nine of the leading railroads operating for the most part exclusively in the Chicago territory is presented in Table II.

The number of tons of freight loaded by these railroads in 1926 was more than 142¾ millions.

Chicago is as favorably located with respect to raw materials as to transportation. The principal Chicago market area^a as shown on Map 2 produces a large share of the basic materials for industry. Of the total iron ore produced in the United States in 1925 approximately 83 per cent was mined in the Chicago area. As for bituminous coal, which is very widely distributed throughout the country, 38 per cent of the total output comes from Chicago territory. The abundance of these basic minerals, together with unexcelled transportation accommodations, accounts for the production of almost half of the pig iron of the United States in this area and nearly 42 per cent of the total steel

^aFor the purposes of this study the following states are included in the Chicago market area: Illinois, Indiana, Ohio, Iowa, Kansas, Michigan, Minnesota, Missouri, Arkansas, Oklahoma, Tennessee, Kentucky, Nebraska, North Dakota, South Dakota, and Wisconsin.

TABLE I
INDEX NUMBERS SHOWING THE TREND OF TOTAL ANNUAL CAR
LOADINGS IN THE CHICAGO TERMINAL DISTRICT
(1922 = 100)

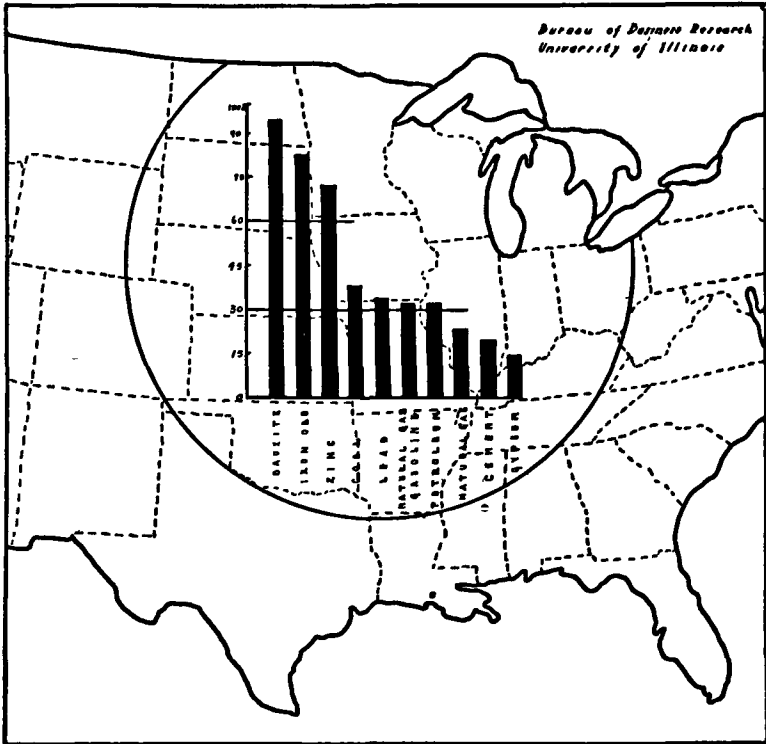
| Year | Index Number | Year | Index Number |
|------|--------------|------|--------------|
| 1923 | 111 | 1925 | 134 |
| 1924 | 113 | 1926 | 141 |

TABLE II
INDEX NUMBERS SHOWING THE TREND OF TOTAL ANNUAL FREIGHT
TONNAGE ORIGINATING ON NINE IMPORTANT RAILROADS OPERAT-
ING ALMOST EXCLUSIVELY IN THE CHICAGO MARKET AREA
(1917 = 100)

| Year | Index Number | Year | Index Number |
|------|--------------|------|--------------|
| 1918 | 103 | 1923 | 105 |
| 1919 | 88 | 1924 | 100 |
| 1920 | 104 | 1925 | 101 |
| 1921 | 80 | 1926 | 107 |
| 1922 | 90 | | |

TABLE III
INDEX NUMBERS SHOWING THE TREND OF THE VALUE OF MANU-
FACTURED PRODUCTS OF CHICAGO, THE CHICAGO MARKET AREA,
NEW YORK, AND THE ENTIRE COUNTRY
(1914 = 100)

| Year | Chicago | Chicago Market Area | New York | United States |
|------|---------|---------------------|----------|---------------|
| 1919 | 247 | 199 | 229 | 257 |
| 1921 | 168 | 156 | 189 | 180 |
| 1923 | 224 | 128 | 233 | 250 |
| 1925 | 232 | 187 | 232 | 259 |

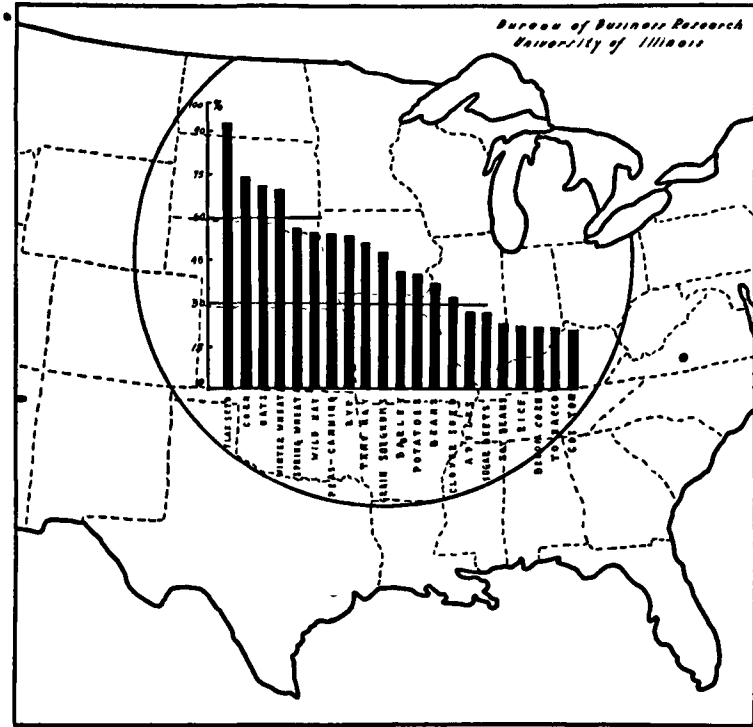


MAP No. 2—PERCENTAGE OF THE MINERAL OUTPUT OF THE UNITED STATES PRODUCED BY THE CHICAGO MARKET AREA IN 1925

rolling mill products. Almost $\frac{1}{3}$ of the petroleum output of the United States comes from this territory.

Map 3 shows how the Chicago market area stands in relation to the total agricultural production of the United States. The Mississippi Valley contains the most fertile expanse of territory in one contiguous area in the country. The territory within what has been here included in the Chicago market area produced in 1925 about $\frac{3}{4}$ of the corn and oats crops of the country and more than $\frac{1}{2}$ of the wheat, hay, and rye crops.

In recent years the manufacturing importance of this territory has come to rival, if not exceed, its relative importance as a source of raw materials (Map 4). About 85 per cent of the agricultural implements,

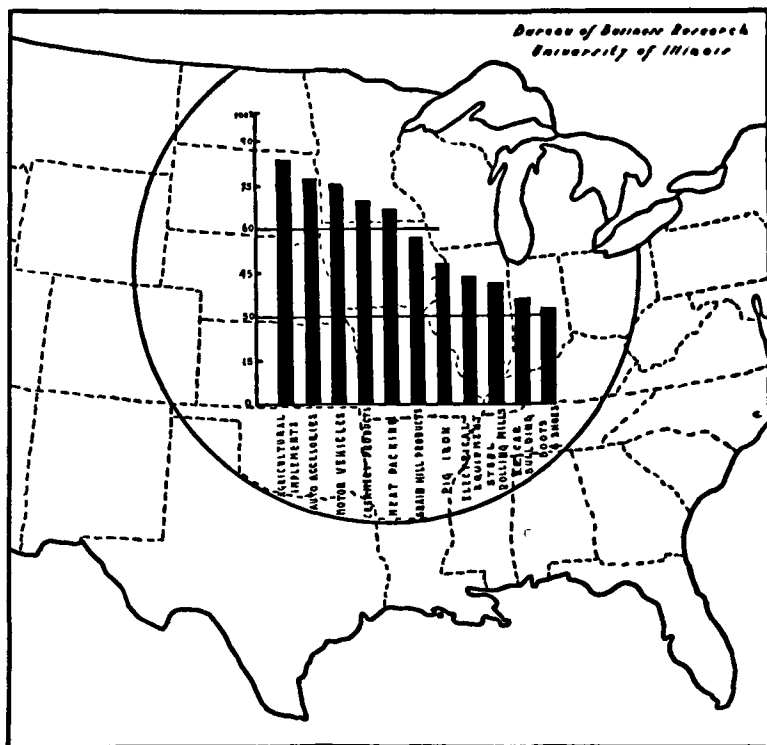


MAP No 3—PERCENTAGE OF THE AGRICULTURAL PRODUCTS OF THE UNITED STATES PRODUCED IN THE CHICAGO MARKET AREA IN 1926

75 per cent of the motor vehicles, 67 per cent of meat packed, and 57 per cent of the flour mill products are manufactured in this area.

With the inviting opportunities offered by agriculture, industry, and commerce, the population of the Chicago market area has steadily increased until at the close of 1926 a census estimate was approximately 46½ millions. This indicates an increase of 24 and 10 per cent since the 1910 and the 1920 census respectively. At the close of 1926 the estimated population of the city of Chicago proper, not including the suburbs, was 3,048,000. This represents a gain of roughly 40 per cent over the 1910 census and 13 per cent over that of 1920.

On Chart 1 is shown the course of electric power production in the major portion of the Chicago market area and also in the United



MAP No. 4—PERCENTAGE OF SEVERAL IMPORTANT MANUFACTURED PRODUCTS OF THE UNITED STATES PRODUCED IN THE CHICAGO MARKET AREA IN 1923

States as a whole. The two curves show almost the same trend. After a decline in 1921 the course upward has been continuous.

The same trend is revealed by comparing the value of manufactured products produced in Chicago, the Chicago market area, New York, and the country as a whole. The value of output declined rapidly during the depression of 1921; by the close of 1923 a marked recovery had occurred except in the Chicago market area which was somewhat later in regaining its former position. (See Table III.)

The trend of the value of manufactured goods of Chicago is very much the same as that of New York. Since 1921 the gain has been somewhat more rapid in the country as a whole than in either Chicago

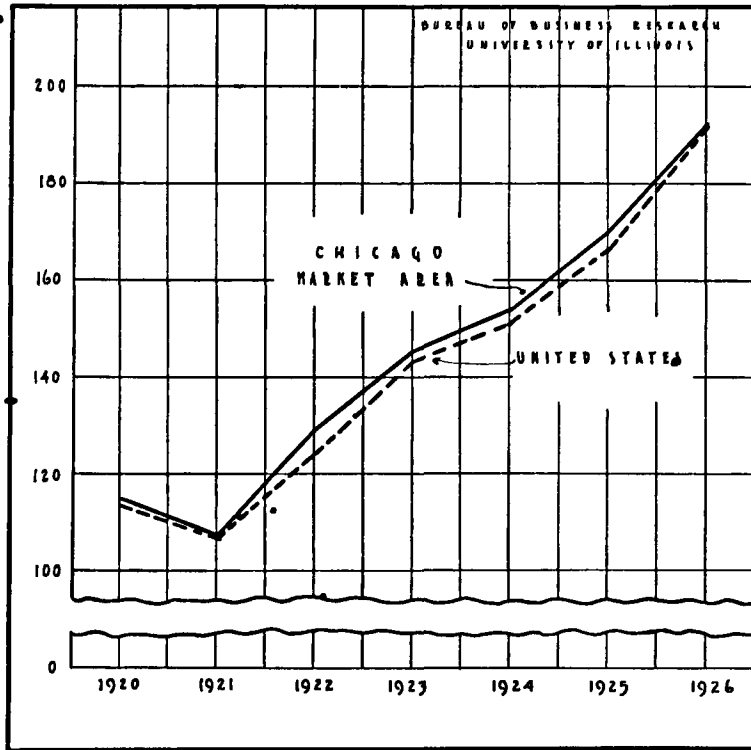


CHART 1—INDEXES OF ELECTRIC POWER PRODUCED IN THE CHICAGO MARKET AREA (NOT INCLUDING OKLAHOMA, ARKANSAS, KENTUCKY, AND TENNESSEE) (1919 = 100)

or New York, and strikingly more rapid than in the Chicago market area. This condition is probably because of the diversification of industry which is characteristic of the first three areas but to a less extent of the Chicago market area. The latter is predominately agricultural and since 1921 has suffered keenly from a depression.

Another good index of general business activity is the number of wage earners. Chart 2 shows the trend in the number of persons employed in Chicago, the Chicago market area, New York, and the United States. By the close of 1919 the number of wage earners reported in Chicago had increased over 1914 by approximately 29 per cent, while the gains for the Chicago market area, New York, and for the country

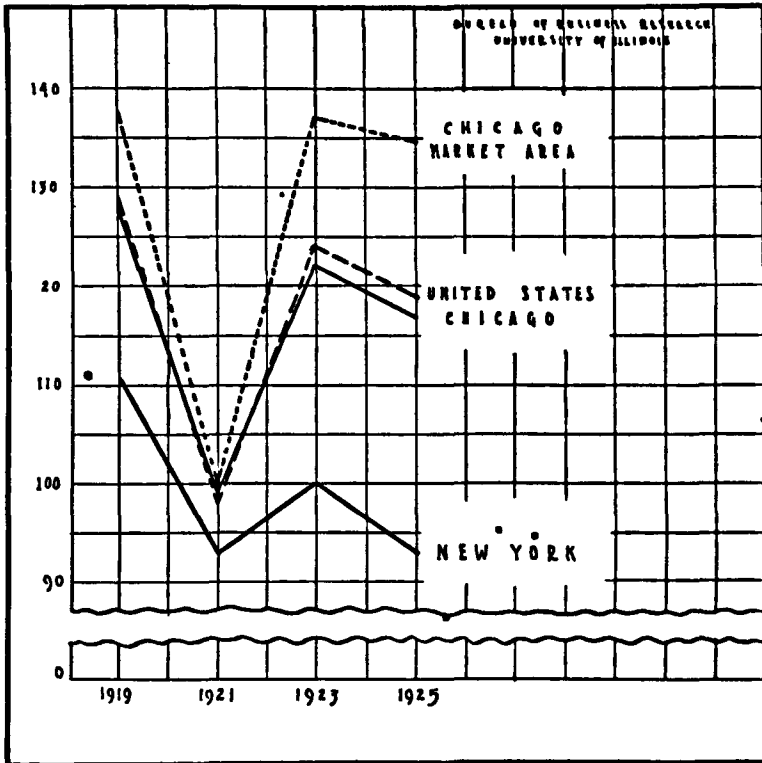


CHART 2—INDEXES OF THE NUMBER OF WAGE EARNERS IN THE CHICAGO MARKET AREA, THE UNITED STATES, CHICAGO, AND NEW YORK (1914 = 100)

as a whole were 39 per cent, 11 per cent, and 29 per cent respectively. By the close of 1923 a recovery had taken place from the depression of 1921. Two years later (at the end of 1925) the wage earners of Chicago were at a figure almost 18 per cent above that of 1914; the corresponding gain for the Chicago market area was nearly 35 per cent, while that for the entire country was just a trifle larger than that of Chicago—19 per cent. The 1925 figure for New York was nearly 7 per cent under that of 1914.

As a supplement to these statements, certain tables of index numbers are presented in Appendix A. No attempt has been made to eliminate seasonal or cycle influences from these data or to associate the movements with fluctuating business conditions.

III. THE EXPANSION OF CHICAGO AS A MONEY MARKET

The Chicago money market is, of course, only in its infancy in comparison with either the London or New York markets, but it has had a phenomenal growth.

A money market is certain to appear at the focal point of paths of commerce. This has always been true; and the wider these paths become and the more they multiply in number, the stronger and the more important the money market at such a center becomes.

It was natural that the East should play the dominant part in financing the settlement and development of the West. That part of the country which develops first is first also in the accumulation of surplus wealth and hence leads in the development of banking and credit institutions; the money market thus developed becomes the financial center of the country.

It is interesting to reflect that Chicago has remained very secondary to New York as a money market long after it has become a center of first rate importance in many other fields. However, a noticeable change has taken place during the past generation; there are unmistakable indications that the Middle West is becoming more and more capable of financing its own community. This trend, it would appear, was inevitable. The Middle West is far advanced in the stage of industrial maturity. The center of industry of the United States is already within a few miles of Chicago; and Chicago is not more than 175 miles from the present center of population (see Map 1). In view of these facts it is to be expected that a money center would eventually arise conveniently available to the concentration of industry

With this development there naturally comes into existence an increasing amount of funds available for investment. More than 9,000 domestic banks keep balances with Chicago banks. The larger banks in Chicago have constantly extended the domain of their operations and have steadily expanded their functions as bankers' banks. One Chicago bank alone has correspondent relations with 22,000 foreign bank offices. The financial resources in the Chicago money market have steadily increased. The resources of Chicago banks now aggregate three and one-fourth billions, not including the Federal Reserve Bank of Chicago, agricultural credit banks with headquarters in Chicago, or insurance companies and building and loan associations. The assets of these latter institutions are in excess of one and one-fourth billion.

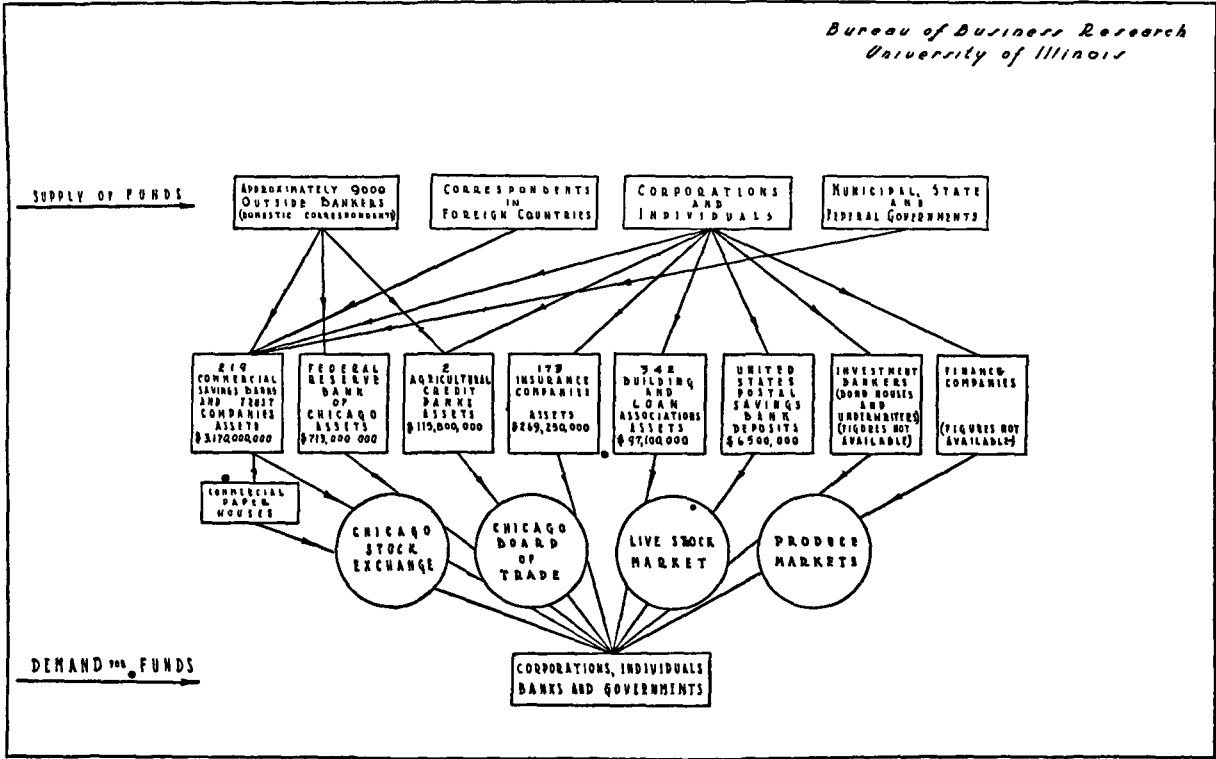


CHART 3—SOME FEATURES OF THE CHICAGO MONEY MARKET STRUCTURE JANUARY 1, 1927

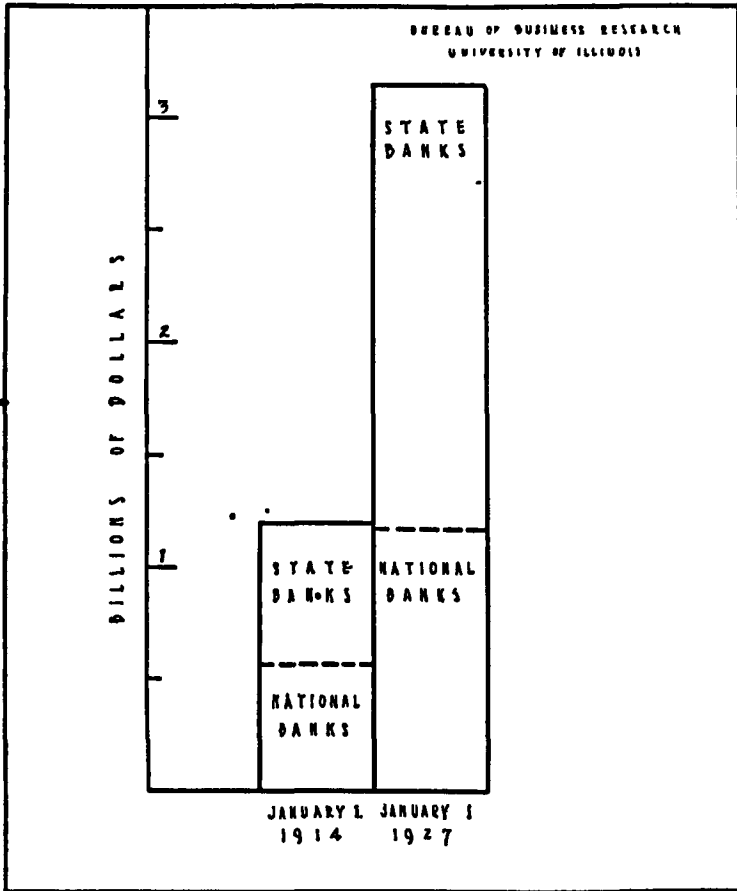


CHART 4—THE GROWTH OF TOTAL RESOURCES OF NATIONAL AND STATE BANKS IN CHICAGO

The financial structure of the Chicago market is outlined on Chart 3. The purpose of this section is to show what the extent of Chicago bank growth has been and to give a cross-section view of total credit resources at the present time. The money market of Chicago in common with every important money market in the world is composed essentially of privately owned and privately managed banks, each competing with the others for its share of the business of the

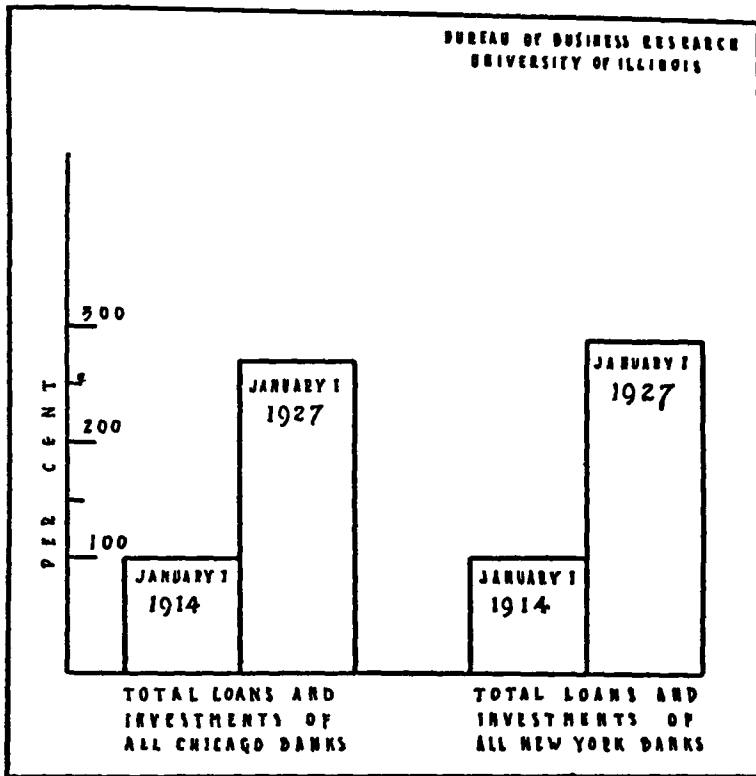


CHART 5—THE GROWTH OF TOTAL LOANS AND INVESTMENTS OF CHICAGO AND NEW YORK BANKS

market. Further, in common with the New York money market, Chicago banks have developed entirely without the influence of a strong central bank. In England and on the continent the banks have developed hand in hand with the central banking institutions, and the relations between them are now firmly fixed by many years of customary practice.

In Chicago, as in the United States as a whole, are a large number of individual banks. The entire Dominion of Canada has but 11 individually chartered banks.* Chicago has 219; 185 state banks and 34 national banks. It is interesting to observe that the Chicago money

*There were in England at the close of 1924, 13 Joint Stock Banks with 8,081 branches and 2 private firms possessing 2 branches.

market is the only important money market in the world which has developed with the complete absence of branch banking (Chart 4)

These Chicago banks forming the backbone of the money market represented at the close of 1926 a proprietors' equity of approximately 386 millions of dollars. This amount is 121 per cent above the figure for 1913.⁵

The total resources of Chicago banks (Chart 4) have shown a consistent growth; during the thirteen years ending December 31, 1926, this growth has been 164 per cent. As might be expected the increase in Chicago bank resources has paralleled very closely the growth of bank resources of the country. It is interesting to know, although the detailed figures are not given at this time, that since 1921 the increase of bank resources in Chicago has been somewhat more rapid than for the entire country.

A study of the total loans and investments of Chicago banks (Chart 5) reveals the extent to which the banks are financing business. Since the evidences of credit advances made by banks constitute the great bulk of their assets, there would be expected a parallel growth between loans and investments and total resources; in the case of the Chicago banks since 1919, the rate of increase of loans and investments has continued larger than that of total assets.

There are a number of indications that the volume of bank business in Chicago has been growing more rapidly than in the territory tributary to Chicago. On December 31, 1923, Chicago banks held 31.5 per cent of the total bank loans and investments of the Seventh Federal Reserve District. Three years later this figure had increased to 33 per cent. The corresponding figure for the New York City banks and for the Second Federal Reserve District remained at 43.3 per cent.

On December 31, 1923, of the total bank loans and investments held in the Chicago market area (sixteen states) 14.4 per cent were held in Chicago. By December 31, 1926, Chicago banks were holding 16 per cent.

A greater concentration of bank resources appears to have taken place in the Chicago territory as a whole than has taken place within the city itself. The total loans and investments of the five largest banks in Chicago today are almost identically the same proportion of the total Chicago bank holdings as was held by the five largest banks thirteen years ago (Chart 6).

⁵The period covered in this initial study is for the most part the 13 year period (1914-1926, inclusive).

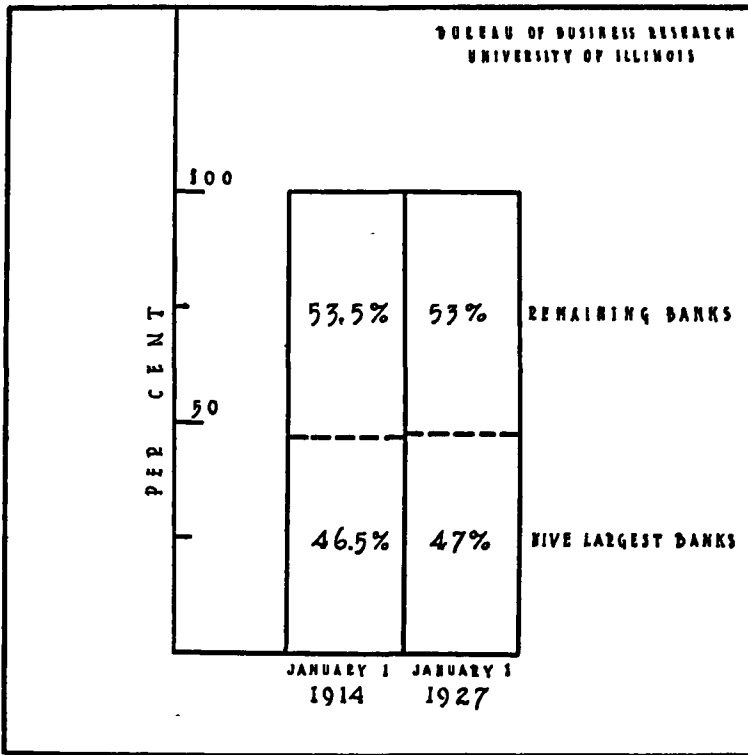


CHART 6—LOANS AND INVESTMENTS OF THE FIVE LARGEST BANKS AND TRUST COMPANIES IN CHICAGO COMPARED WITH THE TOTAL LOANS AND INVESTMENTS OF ALL CHICAGO BANKS

The course of total deposits of Chicago banks shows much the same trend as do bank resources. Table IV indicates the growth of deposits.

Throughout the period under study the increase in the total deposits (Chart 7) has been considerably more rapid than the growth in the number of banks with the one exception of the year 1921.⁶ The demand deposits of Chicago banks show much the same trend, of course, as total deposits, except that in the case of the latter a somewhat greater increase over 1913 has persisted. A comparison of the growth of demand deposits for Chicago with that of New York reveals that since 1918 the Chicago banks show a larger rate of increase than

⁶On January 1, 1921, the state law went into effect prohibiting private banks in Illinois.

TABLE IV
INDEX OF TOTAL DEPOSITS OF CHICAGO BANKS
DECEMBER 31
(1913 = 100)

| Year | Index Number | Year | Index Number |
|------|--------------|------|--------------|
| 1914 | 95 8 | 1921 | 177 8 |
| 1915 | 118 7 | 1922 | 216 3 |
| 1916 | 142 2 | 1923 | 222 2 |
| 1917 | 143 4 | 1924 | 255 1 |
| 1918 | 157 3 | 1925 | 266 6 |
| 1919 | 186 7 | 1926 | 274 1 |
| 1920 | 180 1 | | |

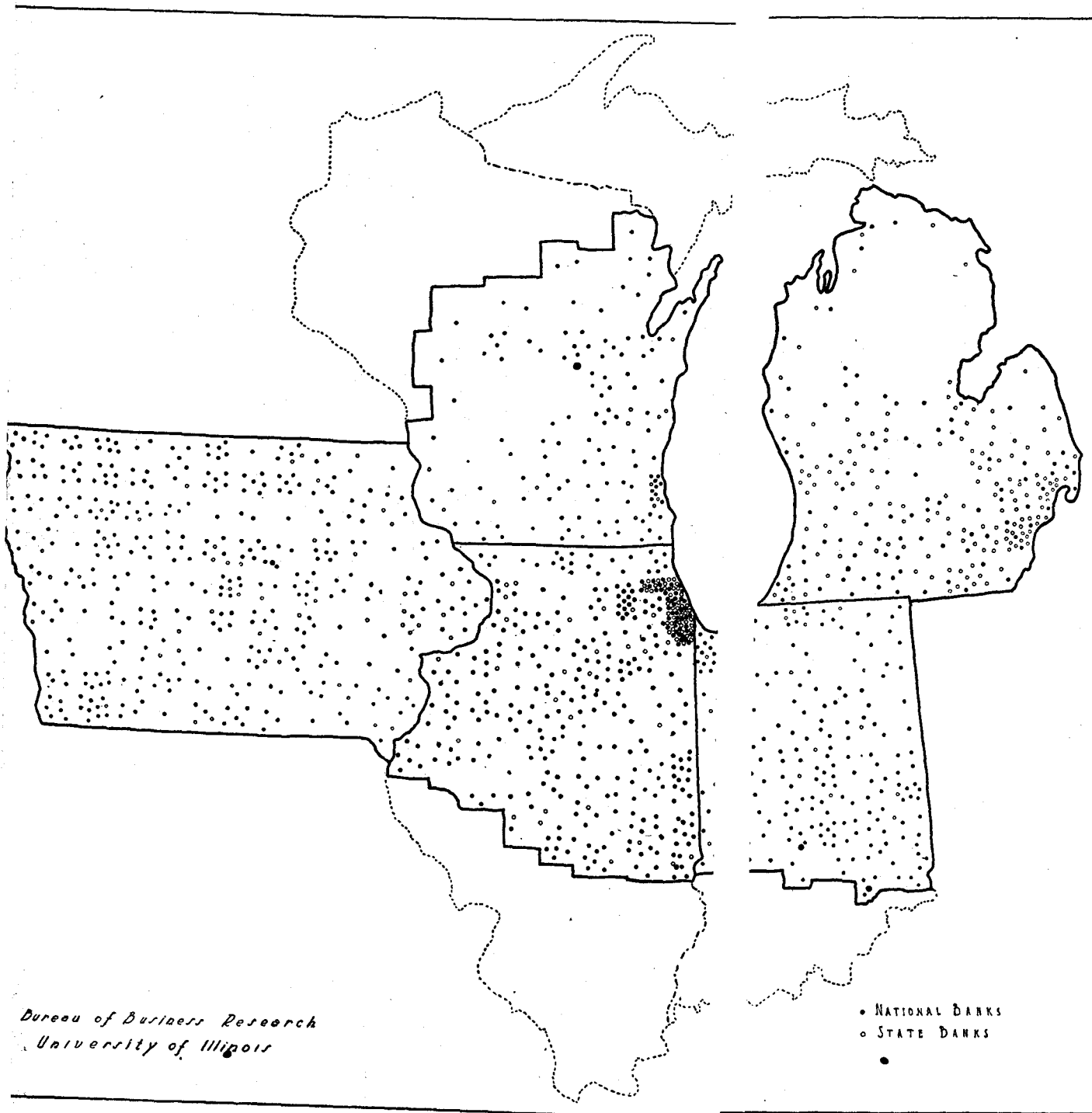
those of New York. By the close of 1923 the demand deposits of Chicago banks (Chart 8) stood at a figure 179 per cent above that of 1913, while the corresponding figure for New York was 100 per cent. Three years later the figures were 188 per cent and 153 per cent respectively. Thus the growth of Chicago bank demand liabilities has been considerably more marked than in the case of New York banks.

An analysis of the ratio of demand deposits to total resources of Chicago banks shows this ratio to be fairly constant between .42 and .45. At the close of 1918 the figure falls to .377 which was approximately the 1914 ratio. By the end of 1926 the figure was again .377. As of this latter date the ratio for all the member banks of the Federal Reserve System stood at .43, a year previous the ratio was .414. Other things being equal, the lower the ratio of demand deposits to resources the stronger the reserve position of the banks.

Of course, demand deposits, which consist almost entirely of "individual" checking accounts,⁷ are but one form of the bank's total demand liability. Another important demand item is "due to banks," in other words, the deposits of banks. Of slight importance today are the outstanding notes of national banks which compose the third form of demand liability. A study of the demand liability of the Central Reserve City Banks of Chicago⁸ shows that since 1913 a decreasing proportion of the total demand liability of the banks consists of bank deposits, and a corresponding proportional increase in demand deposits has taken place. This change has been steady and pronounced. On December 31, 1913, 51.1 per cent of the total demand

⁷"Individual" checking accounts as referred to here include all demand liabilities other than balances "due to banks."

⁸The number of these banks, according to the Comptroller of the Currency, ranges from 9 in 1913 to 14 in 1925. The same class of banks in New York ranges from 36 in 1913 to 33 in 1925.



*Bureau of Business Research
University of Illinois*

• NATIONAL BANKS
○ STATE BANKS

MAP No. 5—MEMBER BANKS OF THE FEDERAL RESERVE BANK OF CHICAGO, JANUARY 1, 1926

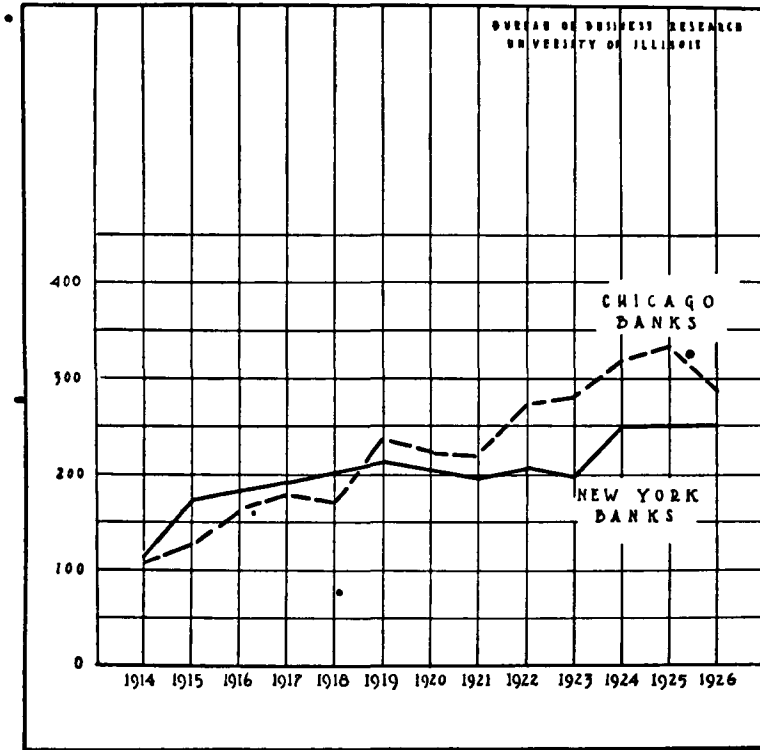


CHART 8—INDEXES OF TOTAL DEMAND DEPOSITS OF CHICAGO BANKS COMPARED WITH NEW YORK BANKS DECEMBER 31 (1913 = 100)

was due to banks. It is very interesting to observe that there is scarcely any seasonal variation in the proportionate size of the demand liability items in either the Chicago or New York banks. This is apparently one indication that the bulk of the fund movement into and out of the two money markets is accomplished chiefly by the city banks acting only in the capacity of agents for the country banks.

For the purpose of the present study we may consider cash and amounts due from banks together with legal reserves on deposit with the Federal reserve bank of the district as composing the banks' cash reserves. A brief analysis of reserves for the central reserve city banks of Chicago for the thirteen year period (1913-1925) shows that there has been a gradual decline in the ratio of reserve to total deposits.

TABLE V
THE NUMBER OF DOLLARS OF DEPOSITS WHICH ONE DOLLAR OF
RESERVE WAS SUPPORTING IN THE CENTRAL RESERVE
CITY BANKS OF CHICAGO AND NEW YORK
DECEMBER 31

| Year | Number of Dollars of Deposits Supported by One Dollar of Reserve | |
|------|---|----------------|
| | Chicago Banks | New York Banks |
| 1913 | \$2 50 | \$2 92 |
| 1914 | 3 08 | 3 80 |
| 1915 | 2 93 | 4 41 |
| 1916 | 3.16 | 4.46 |
| 1917 | 3.42 | 5 93 |
| 1918 | 3.44 | 6.72 |
| 1919 | 3.65 | 6 45 |
| 1920 | 4 12 | 7.27 |
| 1921 | 4.34 | 6.84 |
| 1922 | 4 37 | 8 35 |
| 1923 | 4 38 | 8 94 |
| 1924 | 4 55 | 8 01 |
| 1925 | 5 21 | 9 01 |

At the close of 1913 the above banks' ratio of reserves to total deposits was very near 40 per cent; twelve years later—at the close of 1925—the ratio was approximately 19 per cent. The corresponding figures for the central reserve city banks of New York were 34¼ per cent and 11 per cent respectively. The central reserve city banks in both money markets show a steady decline in reserves relative to deposits.

It follows from these figures that a dollar of reserve in the New York banks was supporting throughout the period under study a greater number of dollars in deposits than the Chicago banks. (See Table V.)

The same trend is observed for the banks in the United States as a whole. At the close of 1914 the ratio of reserves to total deposit liability was approximately 21 per cent. By the end of 1920 the ratio stood at a trifle above 16 per cent; on December 31, 1926, approximately 14 per cent. It is thus seen that the downward course in relative bank reserves has not been so pronounced in the case of the country as a whole as in the case of Chicago and New York. On December 31, 1914, when one dollar of reserve maintained \$3.08 and \$3.80 of total deposits in the central reserve city banks of Chicago and New York, one dollar of reserve was supporting \$4.74 in the banks of the country as a whole. At the close of 1920 one dollar of reserve was supporting \$4.12 of deposits in the Chicago banks, \$7.27 in New York banks, and \$6.06 in the banks of the country as a whole. By the close of 1925 the figures

TABLE VI
 *INDEX NUMBERS SHOWING THE TREND OF RESERVES (TOTAL CASH
 AND DUE FROM BANKS) AND TOTAL DEPOSITS OF THE
 CENTRAL RESERVE CITY BANKS OF CHICAGO
 AND NEW YORK DECEMBER 31
 (1913 = 100)

| Year | Chicago Banks | | New York Banks | |
|------|---------------|----------|----------------|----------|
| | Reserves | Deposits | Reserves | Deposits |
| 1914 | 77 | 95 | 92 | 119 |
| 1915 | 102 | 120 | 133 | 201 |
| 1916 | 115 | 145 | 131 | 200 |
| 1917 | 113 | 155 | 126 | 256 |
| 1918 | 120 | 166 | 119 | 273 |
| 1919 | 127 | 185 | 129 | 285 |
| 1920 | 93 | 153 | 99 | 246 |
| 1921 | 85 | 147 | 96 | 225 |
| 1922 | 99 | 173 | 93 | 267 |
| 1923 | 104 | 182 | 77 | 235 |
| 1924 | 104 | 189 | 105 | 287 |
| 1925 | 93 | 194 | 98 | 304 |

were \$5.21, \$9.01, and \$6.99 respectively. These figures indicate that Chicago banks have not used up their credit resources as fully as the New York banks and the banks of the country as a whole.

Table VI shows that in both Chicago and New York banks the decline in the reserve position has taken place almost entirely through increased deposits rather than a change in the reserves.

In the preceding analysis there is but one reserve ratio shown for each year—that is, as of December 31 each year. Although there is some seasonal movement, the December 31 figure is fairly representative of the position during a twelve month period. A study of the reserve position of the banks in the two money markets on the "call dates" each year—four or five times a year⁹—reveals the tendency of considerably more seasonal variation of reserve ratio during the early years of the period studied, particularly 1913, 1914, 1915, and 1918. During the latter part of the period—notably the years 1920, 1921, 1922, 1923, and 1925—there was a marked lack of variation from season to season and but little change from year to year except the slight trend toward a declining reserve ratio. There appears to be but very little difference between the seasonal range of fluctuation of the Chicago banks and that of the New York banks.

The Federal Reserve Bank of Chicago is the central bank of the Seventh Federal Reserve District. This includes all of the lower

⁹The Comptroller of the Currency made six calls for National Bank Reports in the years 1914 to 1920 inclusive.

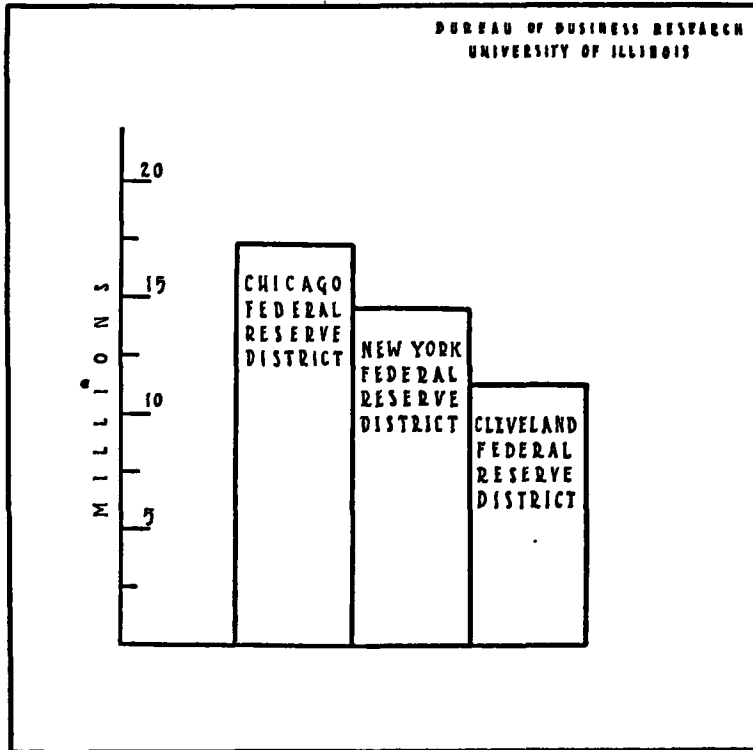


CHART 9—COMPARATIVE POPULATIONS OF THE THREE MOST POPULOUS FEDERAL RESERVE DISTRICTS ESTIMATED JUNE 30, 1926

peninsula of Michigan, Iowa, and the major portions of Illinois, Indiana, and Wisconsin. In so far as the Reserve Bank does business simply with the banks of its own district, its activities do not reflect quite so well the operations of the Chicago money market as do the private banks themselves. It is obvious that a money market is not confined within any arbitrary geographical limits. The Federal Reserve Bank of Chicago is the second largest in size of the twelve regional banks. Of course its operations have steadily grown since it started to function late in 1914. The Chicago Federal Reserve District contains considerably more individual banks than any other district. The Federal Reserve Bank of Chicago has a larger number of member banks than any other Federal Reserve Bank. On January 1, 1926, 1,335 member banks were reported (Map 5).

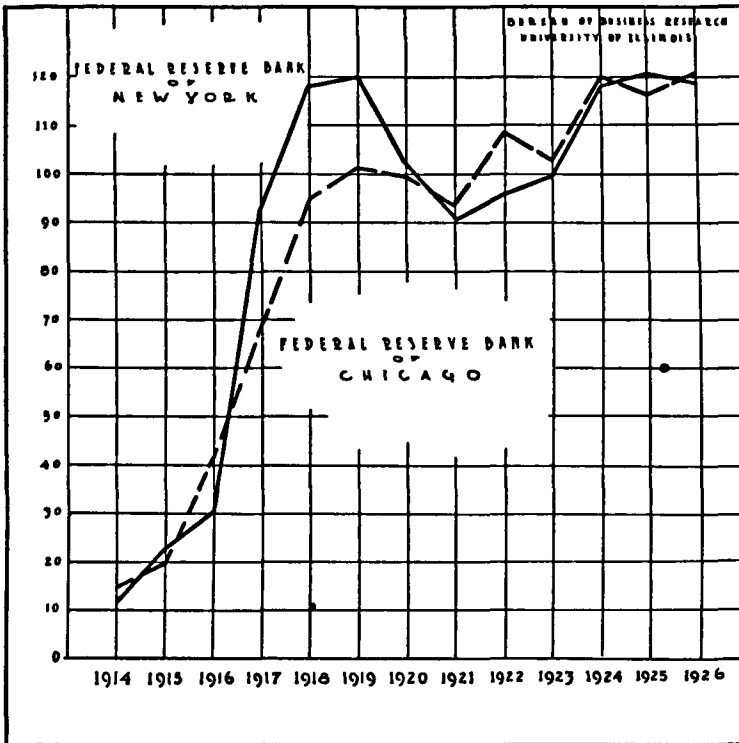


CHART 10—INDEXES OF TOTAL DEPOSITS HELD BY THE FEDERAL RESERVE BANKS OF CHICAGO AND NEW YORK DECEMBER 31
(MEDIAN = 100)

Of the total bank resources of the city of Chicago 76 per cent are in the membership of the Federal Reserve System. The corresponding figure for the country as a whole is 65 per cent. Of Chicago's 185 state banks, slightly more than 1 out of 7 are member banks, while for the entire United States but one state institution out of 14 is a member. The Seventh Federal Reserve District is considerably the most populous (Chart 9). It exceeds the population of the New York District by approximately two and one-half millions, and that of the next most populous district—Cleveland—by nearly six millions.

The trend in the total deposits of the Federal Reserve Banks is a very good index of the course of banking activity within the respective districts. These deposits include, for the most part, the lawful reserve of the member banks. The accompanying Chart 10 indi-

cates the growth of the deposits of the Chicago and New York Federal Reserve Banks.

During the period between 1916 and 1919 the rate of increase in the case of the New York institution exceeded that of the Chicago Bank. With the recovery which took place after the decline of 1920 and 1921, the deposits of the Chicago Federal Reserve Bank tended to expand more rapidly than those of the New York Bank.

In the case of the Federal Reserve Banks' other important liability, namely Federal reserve notes in actual circulation, the outstanding notes of the Chicago Bank show a trifle larger fluctuation. In 1920 the high figure for both the Federal Reserve Bank of Chicago and New York was reached when the index number for the former bank stood at approximately 218, while 209 represented the position of the New York Bank relative to the base (i.e., to the median of the period 1914-1926 inclusive).¹⁰ During the three years which followed, a considerably more rapid decline took place in the case of the New York Bank than in that of the Chicago Bank. It was not until 1924 that the precipitous fall in circulation took place in the case of the Reserve Bank of Chicago. During the year 1926 the note circulation of both banks showed an upward tendency, being the more pronounced with the Chicago Bank.

An analysis of the volume of rediscounted commercial paper held by the Federal Reserve Banks of Chicago and New York shows the trend for both banks to be almost identical. It is interesting to note again, however, that the holdings of the Chicago Bank reveal slightly more fluctuation; in 1920, after a rapid rise in 1918 and 1919, the holdings of rediscounted commercial paper of the Federal Reserve Bank of Chicago were nearly 400 per cent above the median, while the corresponding figure for the New York Bank was approximately 324 per cent. After a very rapid decline in 1921, the course of the volume of paper rediscounted continued irregularly (Chart 11).

In the case of the open market holdings of the two Federal Reserve Banks there is found, as might be expected, a very irregular movement. But here again, as in the cases of notes in circulation and

¹⁰The device used in measuring the trend of the Federal reserve bank data is that of index numbers with the median figure of the period (1914-1926 inclusive) used as the base (100). For example, in showing the trend of deposits the median figure for the Federal Reserve Bank of Chicago is that of December 31, 1920; for the Federal Reserve Bank of New York it is that of December 31, 1923.

As to the volume of rediscounted commercial paper held by the Federal Reserve Banks, the median figure for the Chicago Bank data is that of December 31, 1923; for the New York Bank data it is that of December 31, 1921. The same method is employed in measuring the trend of the Federal reserve notes in circulation and the open market holdings of the two Federal Reserve Banks.

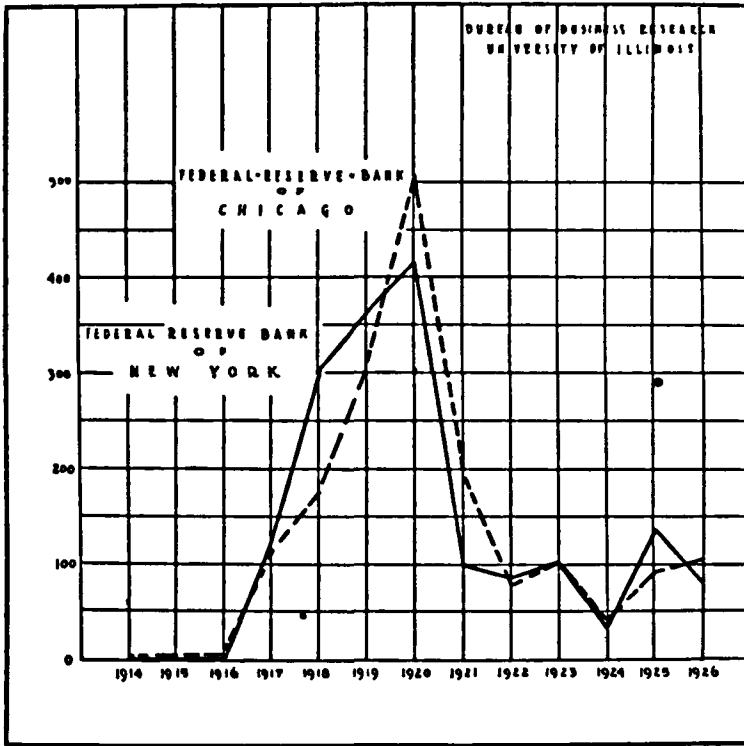


CHART 11—INDEXES OF THE VOLUME OF REDISCOUNTED COMMERCIAL PAPER HELD BY THE FEDERAL RESERVE BANKS OF CHICAGO AND NEW YORK (MEDIAN = 100)

rediscounted commercial paper, the Reserve Bank of Chicago shows more fluctuations.

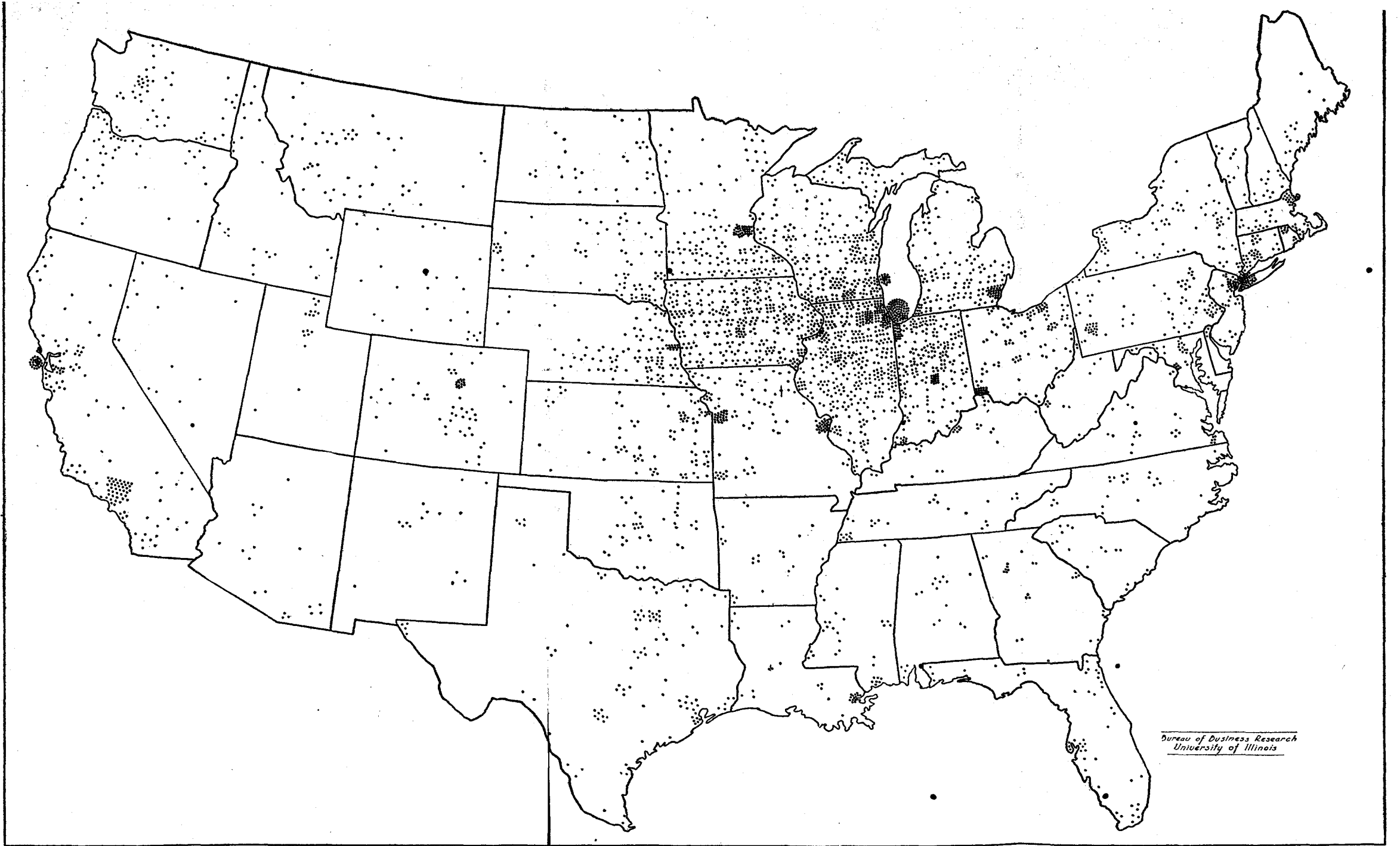
Table VII indicates the fluctuating movement of the open market holdings of the two banks. A marked rise took place in the case of the Federal Reserve Bank of New York during 1917; the upward movement in the holdings of the Chicago Bank did not take place until a year later but was far more pronounced than that of the Federal Reserve Bank of New York. With the decline in the volume of holdings which took place in 1920 and 1921, the fall was more precipitous in the holdings of the Chicago Bank than in those of the New York Bank. From 1922 through 1926 the movement continued irregularly, though much less marked than in the previous period, in the case of both institutions.

TABLE VII
 INDEX NUMBERS SHOWING THE TREND OF OPEN MARKET HOLDINGS OF THE FEDERAL RESERVE BANKS OF CHICAGO AND NEW YORK DECEMBER 31
 (Median = 100)

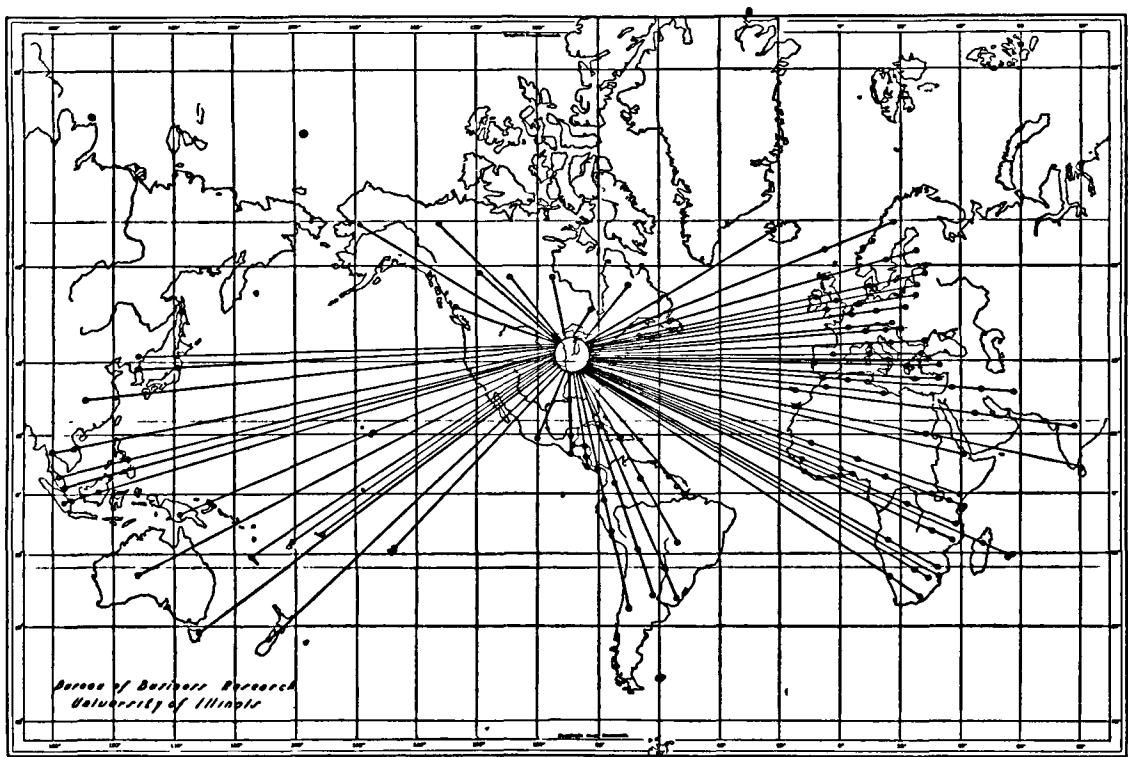
| Year | Federal Reserve Bank of Chicago | Federal Reserve Bank of New York |
|------|---------------------------------|----------------------------------|
| 1914 | 1 | 0 |
| 1915 | 8 | 13 |
| 1916 | 40 | 60 |
| 1917 | 36 | 214 |
| 1918 | 244 | 100 |
| 1919 | 360 | 276 |
| 1920 | 100 | 159 |
| 1921 | 33 | 68 |
| 1922 | 57 | 75 |
| 1923 | 165 | 130 |
| 1924 | 132 | 147 |
| 1925 | 108 | 54 |
| 1926 | 195 | 144 |

This initial survey of the Chicago market would not be complete without a word about the relations which the larger Chicago banks have with banks throughout the country. Practically one-third of all the banks in the country keep balances in Chicago banks. One Chicago bank alone holds deposits of one-sixth of all the nation's banks; and in addition approximately a thousand other banks have transit arrangements with this bank. It is noteworthy that, even though many of the country banks do not have a Chicago correspondent, these smaller banks in many cases deposit with leading banks of their territory, which banks, in turn, maintain balances in Chicago banks. Map 6 shows graphically how the correspondent banks of six representative Chicago banks are distributed throughout the country.

Chicago banks also maintain correspondent relations with banks in foreign countries to aid their customers in foreign commerce and travel. Seven of the larger banks have arrangements with 33,017 foreign bank offices for the drawing of drafts and letters of credit upon them—one of these banks maintains 21,979 foreign correspondent relations. Six other Chicago banks have 11,038 such foreign correspondents, of which 1,349 are in Great Britain, 1,345 in France, 914 in Germany, 702 in Italy, 464 in Switzerland, 385 in Canada, 287 in Czecho-Slovakia, 253 in Sweden, 241 in Spain, 222 in Holland, 206 in Belgium, etc. Map 7 shows graphically the countries with which these Chicago banks maintain contacts through foreign correspondent banks.



MAP No. 6—A REPRESENTATIVE DISTRIBUTION OF CHICAGO CORRESPONDENT BANKS IN THE UNITED STATES •



MAP No. 7—FOREIGN COUNTRIES IN WHICH 7 CHICAGO BANKS MAINTAIN 33,017 CORRESPONDENT RELATIONS

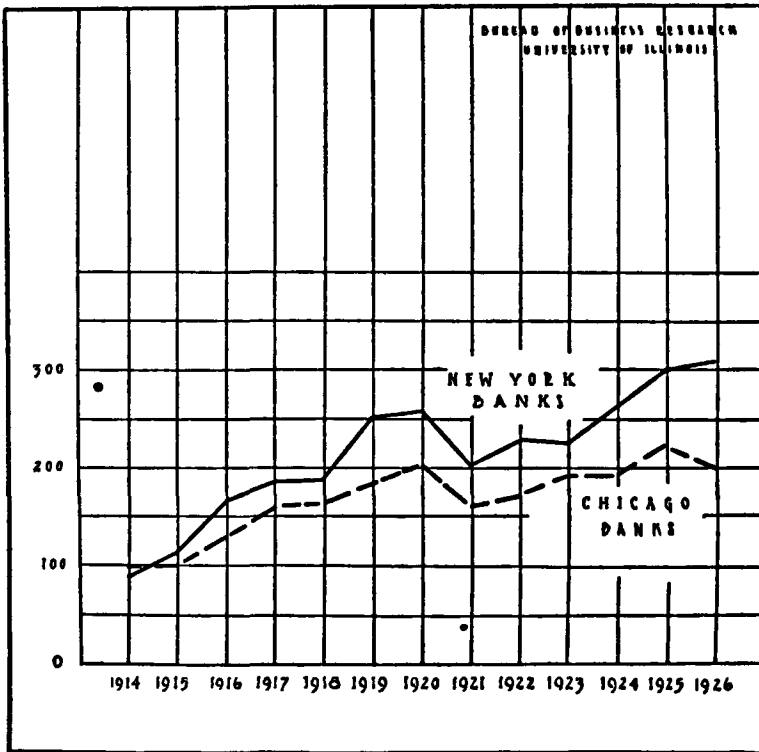


CHART 12—INDEXES OF CHICAGO AND NEW YORK ANNUAL BANK CLEARINGS
(1913 = 100)

Bank clearings, of course, have long been considered an excellent index of general business conditions and banking activity. Chart 12 shows the trend of total annual bank clearings from 1914 to 1926 inclusive for Chicago and New York. The curve shows that the growth of the clearings of the New York banks exceeded those of Chicago banks. In the case of New York the 1919 clearings were almost 150 per cent larger than the 1913 figure; the corresponding gain for Chicago was approximately 85 per cent. The 1925 clearings of the New York banks were very nearly 200 per cent more than the 1913 clearings while those of Chicago showed an increase of 120 per cent over the clearings of 1913. There was a larger gain over 1913 in the case of the 1926 clearings, the percentage increase being 207 and 101 respectively.

TABLE VIII
 INDEX NUMBERS INDICATING THE TREND IN THE NUMBER OF
 TOTAL BANKS, NATIONAL BANKS, AND STATE BANKS IN
 CHICAGO AS OF DECEMBER 31 AND IN THE UNITED
 STATES AS A WHOLE JUNE 30
 (1913=100)

| Year | Chicago Banks | | | Banks in U. S | | |
|------|---------------|----------|-------|---------------|----------|-------|
| | Total | National | State | Total | National | State |
| 1914 | 111 | 90 | 117 | 103 | 101 | 104 |
| 1915 | 117 | 114 | 118 | 104 | 102 | 105 |
| 1916 | 116 | 110 | 118 | 106 | 101 | 109 |
| 1917 | 119 | 110 | 122 | 107 | 102 | 111 |
| 1918 | 120 | 110 | 123 | 111 | 104 | 115 |
| 1919 | 150 | 110 | 160 | 112 | 106 | 116 |
| 1920 | 155 | 114 | 165 | 116 | 109 | 122 |
| 1921 | 185 | 133 | 199 | 118 | 109 | 125 |
| 1922 | 190 | 133 | 205 | 117 | 110 | 123 |
| 1923 | 204 | 148 | 219 | 116 | 109 | 122 |
| 1924 | 207 | 148 | 223 | 113 | 108 | 118 |
| 1925 | 212 | 157 | 227 | 111 | 108 | 116 |
| 1926 | 221 | 162 | 237 | 108 | 106 | 112 |

The number of Chicago banks has steadily increased. At the close of 1926 the number exceeded 1913 by 121 per cent. During this same period, as has been pointed out, bank resources increased approximately 164 per cent.

For the thirteen year period under study the number of national banks increased 62 per cent and that of state banks approximated 137 per cent. (See Table VIII.)

Thus the increase in the number of incorporated banks in Chicago has considerably exceeded that of the entire country.

Taking the banks of Chicago as a whole, 14 per cent are capitalized at from \$100,000 to \$200,000. Forty-four per cent of the banks have a capital stock of from \$200,000 to \$300,000, while nearly 12 per cent have a capitalization of from one million to five million.

At the close of 1914 the total resources of all Chicago banks averaged approximately ten and three-fourths millions per bank; by the close of 1926 this figure had increased to almost fourteen and one-half millions.

The corresponding figures for the total bank resources of the entire country at the close of 1914 and 1926 are approximately one million and two and one-third millions respectively.

Chicago has long been identified as an important agricultural credit center. While Chicago is not a seat of one of the twelve Federal land banks, the city has two joint stock land banks, the com-

bined loans of which were, at the close of 1926, approximately one hundred five and one-half millions. The resources of either of these banks were in excess of those of any other of the 53 operating joint stock land banks.

In 1926 there were 342 building and loan associations doing business in Chicago; these associations reported aggregate outstanding loans to stockholders of nearly ninety-one millions, the total resources were in excess of ninety-seven millions. In 1913, 219 similar associations reported nearly twenty-one and one-fourth millions of loans; the assets aggregated a trifle more than twenty-three millions. Thus during the above period of fourteen years there took place an increase of approximately 322 per cent in the total resources of the Chicago building and loan associations. It is interesting to note that taking the State as a whole there were 881 of these associations functioning with total resources of close to three hundred fifty-five and one-half millions in 1926. The Chicago organizations represented but 36 per cent of the aggregate resources of all of the building and loan associations of the State. At the same time—at the close of 1926—the Chicago banks represented approximately 70 per cent of the total bank resources of the State.

A survey of insurance companies with home offices in Chicago shows that on December 31, 1925, there were 173 such companies including fire and life insurance companies and assessment and fraternal associations. The combined assets of these companies totaled close to two hundred seventy millions, while their holdings in stocks and bonds aggregated nearly eighty-nine millions. At the end of 1913 there were one hundred two local companies doing an insurance business in Chicago with total resources of approximately fifty-seven and one-half millions, among these assets were twenty-two and three-fourths millions in securities.

The operations of the commercial paper house are important in the Chicago money market. These firms are for the most part middlemen facilitating the exchange of funds between those possessing funds for short time investment, mainly banks, and those producers in need of credit accommodation in the normal course of their business.

Chicago possesses a number of nationally-known firms dealing in commercial paper. One representative house with its home office in Chicago has offices in eight important centers from New York to San Francisco, and maintains resident salesmen or representatives in a large number of cities.

Commercial paper bought by Chicago firms originates in practically every state in the union. This paper is purchased, chiefly by Chicago banks, and some of it is resold to correspondent banks.

The growth of the finance company in recent years has been remarkable. Finance companies as specialized credit firms meet a particular need—that of financing the purchase of consumers' goods. It is interesting to note that the first specialized finance company was organized in Chicago in 1905, and functioned for seven or eight years with practically no competition.

The automobile industry gave the great impetus to the organization of finance companies; and between 1920 and 1924 the greatest growth took place. In August, 1927, a study was made of these firms and 573 different finance companies reported. Of this number 95 had home offices in Illinois. This was considerably in excess of that of any other state. Approximately 182—almost one-third—were located in the Seventh Federal Reserve District. The reporting finance companies of the country transacted an aggregate business of more than three and one-fourth billions during the year, 1926. Eighty-one per cent of this business represented the purchase of automobile paper.

It has become customary for the largest finance companies to obtain credit in the open market. This is done by selling their collateral trust notes direct to bankers or commercial paper brokers.

The growth and development of the Middle West created large demands for financing which were supplied mostly by eastern and foreign capital through the investment houses of Boston, New York, and Philadelphia. These firms soon found it expedient to have local offices in the Middle West and branches were established at Cleveland, Detroit, St. Louis, Chicago, and Minneapolis, but as Chicago began to develop into a great railroad and industrial center, these offices began to gravitate toward Chicago.

The growth of Chicago and the development of the railroads here brought the need for real estate financing, both rural and urban. Farm mortgage financing reached great proportions until the passage of the Federal Farm Loan Act, when the private firms went out of business because they could not compete with the Federal and Joint Stock Land Banks whose bonds are exempt from taxation.

The urban real estate business developed with the growth of the city, until now there are a large number of firms engaged wholly or in part in city real estate financing. Specialization in this line has been carried to such an extent that some firms devote their entire resources

to such work as the financing of hotels, apartment buildings, office buildings, or bungalows. The larger firms engage in all branches of real estate financing.

Because of the great wealth of this section of the country, the Middle West has changed from a borrowing community to one capable of financing its own operations, and at the same time of lending to others as evidenced by some recent underwriting of foreign issues. Because of this change eastern investment dealers found it very profitable to distribute their securities in this area, and there arose a network of branches of eastern investment firms throughout the Middle West.

In recent years, however, the situation has changed somewhat and investment houses with Chicago as the principal investment center have developed rapidly until on June 30, 1927, there were 360 investment houses in Chicago including branches of outside firms. However, this number does not include the commercial banks of Chicago which also do an investment banking business.

The geographical distribution of investment securities by Chicago firms would in fact cover all the states and the principal cities as well as reach the principal foreign countries. One of Chicago's largest firms with agents and representatives throughout the country has pushed its branch offices into the investment territory of the East and reports at this time two branch offices in the State of Maine from which its salesmen cover the entire state; one main branch office in New Hampshire; one in Albany, and one in Brooklyn, New York; one in Springfield, Massachusetts; two in the State of Connecticut; two in Pennsylvania; one in Baltimore, Maryland; and one in Washington, D. C. This indicates that Chicago firms are able to reach into the old established investment centers of the East and compete on favorable terms. The network of branches and agencies of Chicago investment firms representing all lines of securities—real estate, public utilities, railroads, industrials, and so on—reach every important city in the United States and bring the people of these cities in daily direct touch with the Chicago investment market.*

Only a few years ago large investment issues were almost always underwritten in the East, and Chicago banks and investment firms were asked to participate in the retailing. The recent development of the Chicago investment market has brought with it direct underwriting by Chicago firms. During the year 1913 Chicago firms offered bonds to the amount of \$3,450,000 while joining with firms in other cities in the retailing of \$470,727,000. In the year 1926, 80 banks and invest-

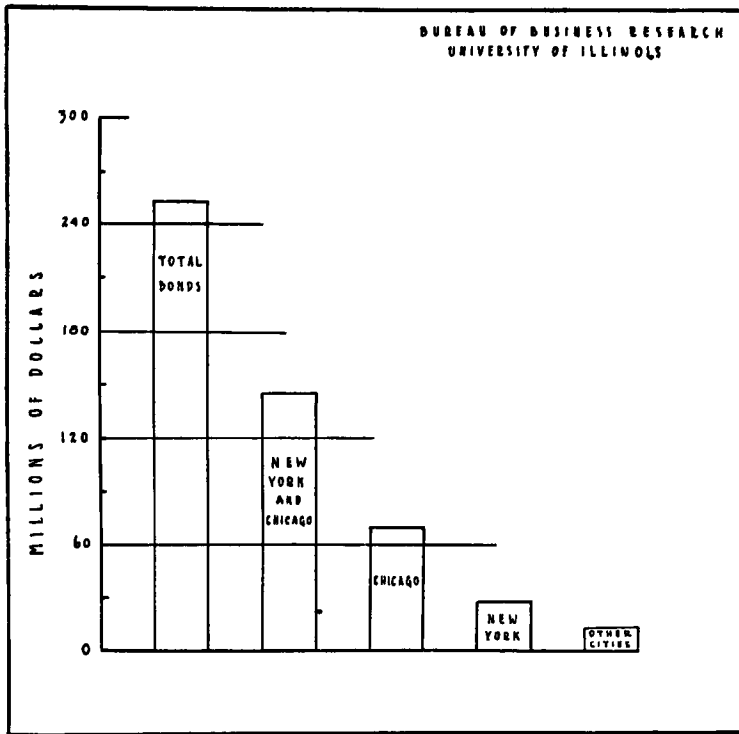


CHART 13—VOLUME OF BONDS SOLD EXCLUSIVELY BY CHICAGO FIRMS AND THE LOCATION OF THE PAYING AGENTS, 1926

ment houses having their main offices in Chicago offered bonds to the amount of \$257,376,000 while joining with firms in other cities in the retailing of \$1,186,432,000. One Chicago trust company reports that its bond department during the first six months of 1927 underwrote issues in 43 of the 48 states of the Union. This same company maintains an active market for municipal securities of every city in America with a population of 5,000 or more and handles obligations from every city in this country of 100,000 or more. The underwriting of investment issues by Chicago firms is not confined to this country. One firm in Chicago reports direct underwriting for fourteen foreign countries. This same company maintains retail distribution offices in many of the important foreign countries, including such as those inside the Arctic Circle, Japan, South Africa, India, and Australia.

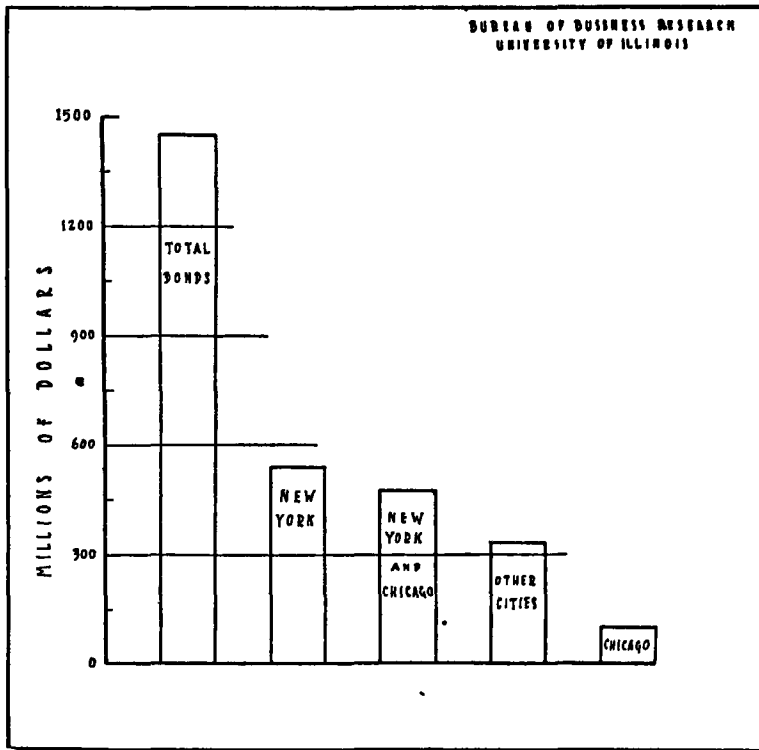


CHART 14—UNDERWRITINGS AND PARTICIPATIONS OF CHICAGO FIRMS AND THE LOCATION OF THE PAYING AGENTS, 1926

An interesting fact to note about the investment market is the location of the paying agents of the corporations whose bonds are sold in this area (Chart 13). It is to these paying agents, of course, that the interest coupons and the bonds at maturity must be forwarded for payment. For 43.5 per cent of the \$3,450,000 of bonds offered by Chicago firms during 1913, corporations maintained paying agents in Chicago and for 56.5 per cent maintained paying agents in other cities. During the same year Chicago firms joined with firms in other cities in the retailing of \$470,727,000 of bonds. The amount sold by each firm was not indicated. Of this amount corporations maintained paying agents in Chicago for 6.8 per cent, in New York for 76.3 per cent, in both New York and Chicago for 3.7 per cent, and in other cities for 13.2 per cent. Taking all the bonds—those offered solely by Chicago

firms and those offered by firms in other cities and Chicago firms—paying agents were maintained in Chicago for 7.1 per cent of the total, in New York for 75.8 per cent, in both New York and Chicago for 3.6 per cent, and in other cities for 13.5 per cent. Of the \$257,376,000 offered during 1926 solely by firms having their main offices in Chicago, the interest and principal of only 26.3 per cent of these are to be paid through agents in Chicago, while 11.1 per cent are to be paid through agents in New York, 56.9 per cent through agents in both New York and Chicago, and 5.7 per cent through agents in other cities (Chart 14). Of the amount paid through both New York and Chicago, the volume paid through New York and the volume paid through Chicago cannot be ascertained. Of the \$1,186,432,000 retailed jointly with other firms, in this year, only 26 per cent are to be paid through Chicago, while 43.4 per cent are to be paid through New York, 28 per cent through New York and Chicago, and 26 per cent through other cities. Taking the total of the two—those offered solely by Chicago firms and those offered also by firms in other cities—\$1,443,808,000, the interest and principal of 6.8 per cent are to be paid through agents in Chicago, 37.6 per cent through agents in New York, 33.2 per cent through agents in New York and Chicago, and 22.4 per cent through agents in other cities.

The payment of the coupons and the bonds retailed by Chicago firms in this area through agents in New York makes it necessary for the corporations issuing the bonds to keep deposits in New York banks to meet these payments, thus increasing the supply of funds in the New York money market. The shipment of these bonds to the East for collection causes inconvenience and loss of interest while the collections are being transferred. Occasionally, an eastern institution is found which insists that western bonds be payable in the East not so much because of the cost of conversion into New York funds, but to avoid the inconvenience and loss of interest entailed by transfers. As more of the bonds retailed by Chicago firms are paid through Chicago, more funds will be made available in the Chicago money market, and economies will result from these savings.

IV. REVIEW OF MONEY RATES IN THE THREE PRINCIPAL MONEY MARKETS

Money rates are properly considered the indexes of the demands for funds. These demands are many and various; they represent "good," "medium," and "indifferent" names; long and short term financing; consumption, production, marketing, and speculation. The moneyed capital in any community or country is subject to rapid increases and decreases relative to demand. The change in the supply of these funds in a given community relative to the demand does not depend alone upon an increase in the demand or need for it but may be affected as quickly and even more durably by the confidence in the reliability of the institutions of the community.

A good example is the high rates in many European, Asiatic, and South American countries at this time compared with the low rates in England, Canada, and the United States. It is a well-known fact that the lenders in many of these high-rate countries have been investing their money in the low-rate countries. While scarcity or an apparent scarcity may be pointed to as the general cause for high money rates in a given community, the causes of scarcity are numerous. Moneyed capital takes flight from a community in which confidence is lacking or declining. New communities must take time to build confidence and reliable institutions. Thus we have a flow of funds from one section of a country to other sections of the same country and, unless prevented by prohibitive legislation, distrust of foreign borrowers or like barriers, a flow from one nation to another, or to many other nations. Apart from the restrictive legislation and the individual's inherent preference for the familiar and near at home, coupled with his limited knowledge of investment opportunities, when he is selecting his investments, the credit market may be thought of as being world-wide. In brief, the rates are determined by the free play of the forces of demand and supply limited by such restrictions as have been mentioned.

Economic society has developed certain more or less specialized institutions which serve as integrating and coördinating agencies in our credit economy of today. A more definite conception of the variety and scope of these institutions will be obtained by referring to Chart 3 which indicates the structure of the Chicago money market. There is, of course, some variation in the organization of the different markets. For example, the stock exchange of Chicago is still too undeveloped to play the active rôle in the money market of Chicago that is played by the New York Stock Exchange and the London Stock

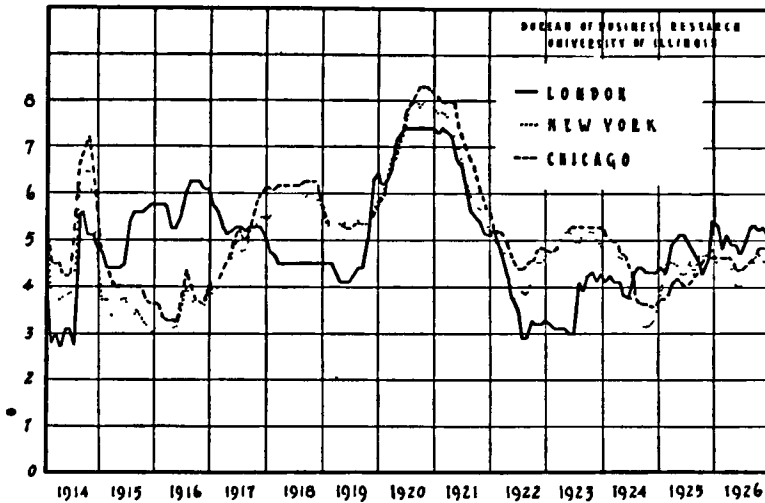


CHART 15—AVERAGE MONTHLY RATES ON 4-6 MONTHS COMMERCIAL PAPER, LONDON, NEW YORK, AND CHICAGO

Exchange in the money markets of New York and London respectively.

The adequacy of the institutions of any money market may be inferred from the degree of sensitiveness which the money rates in that market show to the constantly changing economic conditions throughout the world. That is, a freely competitive money market immediately reflects changes in demand and supply factors in any part of the world. To the extent that such changes do not react upon the rates therein, the market is not one which could be designated as freely competitive. In this connection the charts in the following section will be of interest.

Rates on Four to Six Months Commercial Paper in the Chicago, New York, and London Money Markets

The rates in these three markets present the comparative money and credit conditions. From 1914 down to the present day no comparison seems quite satisfactory because during the War money and credit supplies were managed for necessary purposes in all three markets concerned (Chart 15). After the War the period of readjustment likewise interfered with money market freedom. While the London rates ruled above American rates during the first and a part of

the third quarter of 1920, the American rates passed the London rate, in the third quarter of 1920 and continued to rule above the London rate until the first part of the second quarter of 1921. Temporarily the London rate advanced above the New York rate, and at one time was as high as the Chicago rate and then declined rapidly, falling below the New York rate in the third quarter of 1921 and continuing below until the middle of 1924. Then the London rate advanced sharply, rising above both the New York and Chicago rates before the end of the third quarter of 1924. It has fallen below these rates only twice since. Throughout the entire twelve years under consideration the Chicago rate ruled above the New York rate, falling below occasionally but never remaining below for any long period of time. The study of these rates is essential in the economic analysis of the money market, commerce, and economic history of this period.

Rates on Sixty to Ninety Day Commercial Paper

The trend of rates on sixty to ninety day commercial paper in these markets is identical with the trend on four to six months paper, but the fluctuations are wider in London on the shorter term maturities than on four to six months paper, indicating a more sensitive market. In the Chicago and New York markets the rates rule closer together on the short term paper than on the four to six months paper, and in Chicago the rate on 60 to 90 day paper is somewhat below the New York rate, indicating a condition well-known to be true, that the supply of long term paper in Chicago is relatively larger and consequently does not command as favorable a market as the shorter term maturities (Chart 16).

During the period of post war inflation (1919-1920), the trend was decidedly upward, particularly in 1920; again the trend in the American markets was almost identical. The peak was reached in the spring of 1920 at an average of 8 per cent and remained around that figure throughout the summer. In the London market, the rise took place a few months earlier and did not reach the heights attained in the other two markets. The fall which set in early in 1921 was somewhat more gradual than that in Chicago and New York. The decline continued until the summer of 1922, in both the Chicago and New York markets, when a rise set in which continued until about the middle of 1923, then a decline started; it is to be noted that the rate averaged higher a few months longer in the Chicago market. This fall in the rate persisted until late in 1924 in both markets; through 1925 and 1926 the trend was irregular but mostly upward. In the London money market, the same rate kept at a low level during 1922 and early

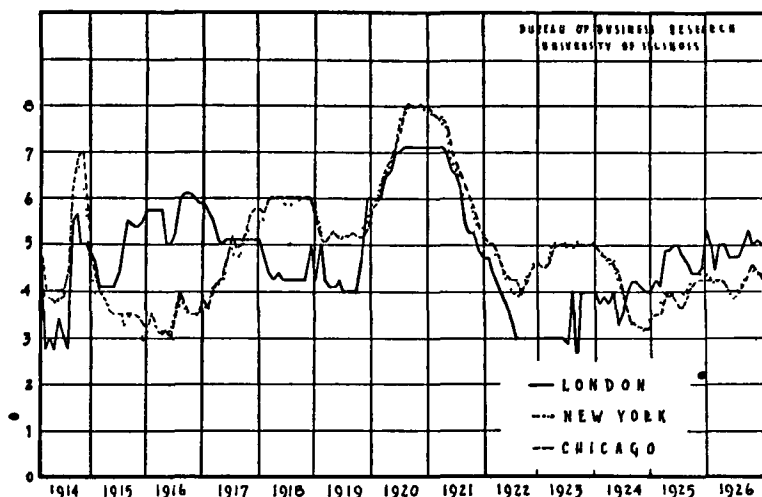


CHART 16—AVERAGE MONTHLY RATES ON 60-90 DAY COMMERCIAL PAPER, LONDON, NEW YORK, AND CHICAGO

1923, when an irregular movement set in which continued through 1926.

Central Bank Rates

Chart 17 presents a comparative picture of the central bank rates in the three money markets under consideration from the opening of the Federal reserve banks to the end of 1926. During this entire period unsettled conditions prevailed in the world's money market. Throughout the War embargoes and restrictions on gold movements and government support by central banks destroyed any movement of the central bank rates as indicators of economic conditions. The removal of the restrictions on credit and exchange operations and gold exports from the United States the last of June, 1919, was followed in a few months by a rapid advance in the central bank rates in this country as well as a more rapid advance by the Bank of England rate. While the Bank of England did not return to an effective gold standard for international exchange until the latter part of May, 1925, it is particularly noticeable that the central bank rates in these three markets moved in the same general direction with the Bank of England's rate leading.

The downward movement in rates beginning in the early part of 1921 was led by the Bank of England rate and reached the low of 3 per cent in June, 1922, then held at that level until July, 1923, when

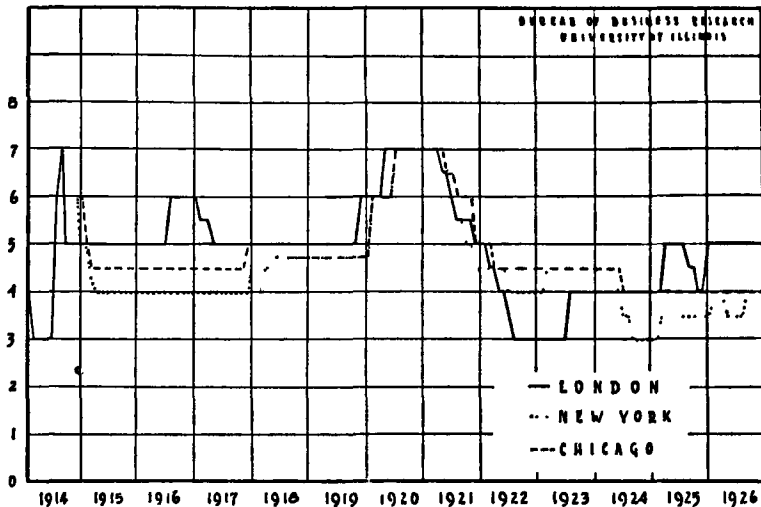


CHART 17—AVERAGE MONTHLY RATES OF THE BANK OF ENGLAND AND THE FEDERAL RESERVE BANKS OF NEW YORK AND CHICAGO

the rate was advanced 1 per cent. The rate at the Federal Reserve Bank of New York did not decline to 3 per cent until August, 1924. The rate at the Federal Reserve Bank of Chicago declined to 4 per cent in June, 1924, but remained at this figure throughout the remaining period under consideration. It is particularly noticeable that the Bank of England rate advanced to 4 per cent in July, 1923, and remained at 4 per cent until March, 1925, when the rate was advanced to 5 per cent. While the Bank of England rate stood at 4 per cent in June, 1924, the New York bank rate was reduced to $3\frac{1}{2}$ and in August, to 3 per cent. Then the New York rate was advanced to $3\frac{1}{2}$ per cent in February, 1925, and the London bank rate from 4 to 5 per cent. No other change was made in the New York bank rate until January, 1926, when the rate was advanced to 4 per cent.

In the meantime, the Bank of England rate had been reduced to $4\frac{1}{2}$ per cent in August, 1925, and to 4 in October, and then advanced to 5 in December where this rate remained throughout the rest of the period under consideration.

The New York Bank rate was lowered in April, 1926, to $3\frac{1}{2}$ per cent and advanced in August to 4 per cent, which rate prevailed for the remaining portion of the period studied.

It is out of the question to say that central bank rates were adjusted to economic conditions during the period of control, but it is

distinctly noticeable that despite control of the gold movements and bank rates all the bank rates moved in the same general direction. It is also noticeable that when the embargo was removed on gold and credit transactions in the United States, that the London and American markets alike tended to become adjusted to economic conditions. With the depression that accompanied the readjustment, rates followed money market expectations with the Bank of England rate showing the more adaptable characteristics and reaching a lower level despite the scarcity of gold in the English market. This lower level, however, may to some extent measure the severity of the crisis which prevailed in England as compared with that in the United States. With the improved business conditions in 1923 the English rate responded immediately while the American rate remained fixed. The wide variations in these rates beginning in May, 1924, with the first decline in the New York rate, a further decline to $3\frac{1}{2}$ in June and to 3 in August, while the London rate remained steady, may be indicative of prevailing conditions in the two countries. The irregularity prevailing from the middle of 1924 to the end of 1926, however, in these central bank rates shows rather clearly the struggle for readjustment in economic conditions in the respective markets. It might best be said that these irregularities are an index of the dissimilar conditions existing in these markets.

The steadiness of the Chicago bank rate from August, 1923, to the end of 1926 shows the inflexible character of the Chicago money market and the failure of the market to register rate changes with the changes in economic conditions indicated by the two principal money markets (Chart 18).

Call Loan Rates

The rates for call money are the spectacular rates in the money market despite the fact they are of the least importance as indicators of trends in commerce, agriculture, industry, investments, and in fact, general business. Call rates merely represent the reserve position of the banks. A small fluctuation in the volume of funds available for the call market may cause a very wide fluctuation in the rates, and it may be only for an hour or a day and it may represent a burst of speculative enthusiasm, an economic change made by the operations of some banking house, government fiscal operations, an unexpected demand for gold, and the like.

Despite the fact that call rates do not represent money market conditions, the popular importance assigned to them justifies their inclusion in a study of the money market. More significant than the

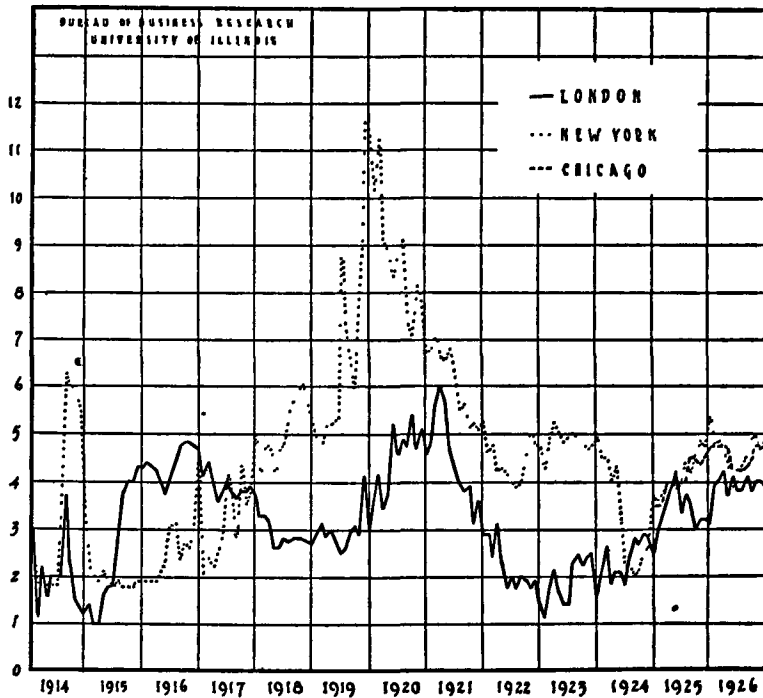


CHART 18—AVERAGE MONTHLY CALL LOAN RATES, LONDON, NEW YORK,
AND CHICAGO

rates in the call market are the demand for and supply of funds which are shown by the rate adjustments. Of course, it is demand and supply that determine the rates. A market with excess funds and a small demand will have very cheap call money. Money will leave such a market and go where it can earn more. Consequently, it develops that any money market, in order to be complete, must maintain a speculative and trading market where surplus funds may be used on call by those who are willing to take a chance in this kind of business until these funds can be more profitably employed in commerce and industry.

Throughout the period of the World War the conditions of the markets under consideration cannot be said to represent either the demand or the supply of funds, because these markets were managed. It is distinctly noticeable when the managed conditions of the markets were relaxed, the New York rates advanced very sharply, because the demand for funds greatly exceeded the supply available (Chart 18).

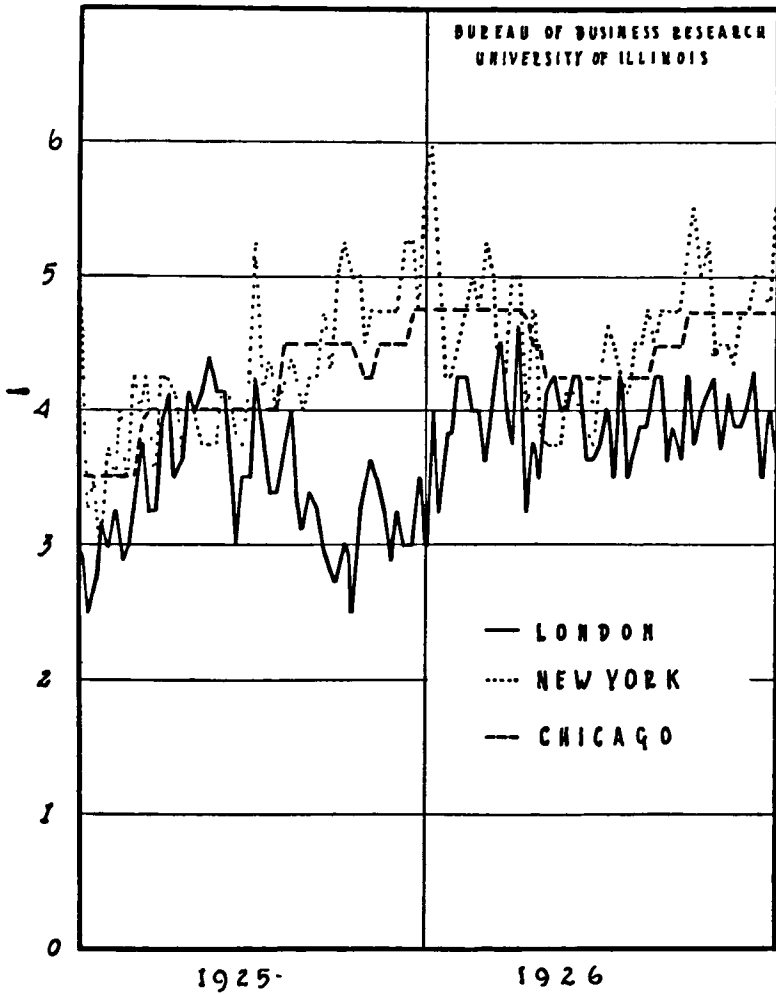


CHART 19—AVERAGE WEEKLY CALL LOAN RATES, LONDON, NEW YORK, AND CHICAGO

The New York rates advanced above the London rates in the last month of 1917 and continued above the London rates until the third quarter of 1924. The London rates never advanced so high as the New York rates. This is because speculation is more conservative in

the London market, and the banking community played a favorable attitude toward commerce, probably due to the fact that the London money market has been built upon the discount of mercantile bills of exchange, and investments.

The imports of gold into the United States have unquestionably had a large influence upon furthering speculation and pouring an ample supply of funds continuously into the call market.

The call rates of Chicago are not as well classified as those of New York and London. For this reason call rates for Chicago, New York, and London in comparison by weeks are presented here for only two years. This study, by comparing the trend of call rates in these three markets in Chart 19, shows the delicate sensitiveness of the New York rate, the less sensitive conditions of the Chicago rate, and the more cautious and guarded conditions of the London rate. While all of these rates follow the same general trend, the irregularity prevailing during these two years would have to be accounted for by the supply of funds in the respective markets. The London money market found it necessary to conserve cash and use it sparingly; consequently, speculation did not fare as luxuriously as in New York where the overflow of gold made speculative funds available to almost any one who cared to use them with reasonable security. While Chicago shared in this abundant supply of funds, the great volume of speculative business in this country is carried on in New York. Middle western banks, corporations, and individuals send their money to the New York call loan market and either loan this money on call through New York banks as agents, or trade and speculate in securities on the New York Stock Exchange. A large part of these funds go direct to New York, but there is a large volume which is deposited in Chicago at a low rate of interest, and Chicago banks relend these funds in New York on call. The reservoir for call money is in New York, and when the demand for funds arises in other parts of the country, the sensitiveness of the New York call loan market quickly indicates it. It is a real question whether a larger development of the call loan market in Chicago would reduce the shock against the money market caused by the seasonal and cyclical character of business in other parts of the country. Should Chicago develop a larger call loan market, a part of the demands from the Middle West would undoubtedly be absorbed by this market, and the full weight of the shock would never reach the New York market. It would seem, therefore, that some stability of money market conditions would be gained by a larger development of the Chicago call money market.

V. SOME OF THE RESEARCH PROBLEMS OF THE CHICAGO MONEY MARKET

In a retrospect of the money markets of history the evidence clearly confirms the fact that dominating financial centers have been the product of economic forces convergent at a strategic place in the path of economic trade routes of commerce. In these respects Chicago is endowed with the characteristics common to the development of the leading money markets of the world. Moreover, these common characteristics and economic forces which have been the underlying background upon which money market centers have grown and thrived elsewhere are more fertile with possibilities for Chicago than those of other money markets were originally.

The financing of the fixed capital requirements and the marketing of the commodities of the entire Mississippi Valley center in Chicago by the natural laws of economy. In the early development the needs for capital were supplied from outside markets, just as in the early development of this country, capital was obtained from the older countries. However, with the growth of industry and commerce which has taken place during the last half century in the Middle West this area has become more self-sufficing in capital, and in recent years has contributed largely to the capital needs of less developed areas and to the rehabilitation of the older countries whose capital deteriorated during the World War. Just as the United States sprang from a debtor to a creditor nation because of the large demand for American products as a result of the War, the Middle West with Chicago as its commercial center has developed from a capital-borrowing community dependent upon other money markets to a capital-lending community serving other money markets as well as its own.

The demand for funds in the Chicago money market is determined by the volume of trade. Among the large demands may be pointed out: the loans to bank correspondents, industrial corporations, and business men who assist in bringing to market these vast supplies of commercial products; the trading in commodities such as upon the grain, cotton, and produce exchanges; the originating of securities for capital financing; the buying and selling of commercial paper; the financing of the exports to and imports from foreign countries; the trading in stocks, bonds, and other securities in the Chicago market; the exportation of funds from Chicago to other markets to pay for purchases by middle western investors and speculators.

The source of funds in the Chicago market would include the cash resources of the Chicago banks, the deposit balances of corre-

spondent banks both domestic and foreign, the cash deposits of traders and investors in the Chicago market, the uncollected deposits due from other banks, the funds of corporations held for the redemption of debt or for the payment of coupons and dividends, and residue balances. This does not pretend to enumerate all the sources but merely to point out some of the origins of the market's money. Of course, there may be imports of gold or an increase in the currency by the issue of Federal reserve notes, or a deposit from another market or central bank, or the purchase of securities in the Chicago market from other centers.

Many banking changes have been witnessed in the Chicago district during the last quarter of a century. The Federal Reserve Bank providing a bankers' bank for that market has been one of the outstanding developments. The amalgamation of many of the banks into a few large banks has enabled these to take care of the expanding needs of commerce and industry.

Chicago money rates compare favorably with those of other money markets. Frequently, New York rates are below Chicago rates. This is probably due to the concentration of investment, trading, and speculative funds in New York for use on the stock exchange and in the bond and commercial paper markets which have been developed more extensively there than in Chicago. In fact, the surplus funds of the Chicago district are sent to New York and employed in this way. The securities bought and sold in New York in a large part originated in the Middle West and West, and it has become a matter of comment among the students of Chicago finance that Chicago money is exported to New York to buy Chicago securities, and the rates in New York are thus lower than in Chicago. The reasons are mainly provincial in the failure to develop organized trading markets in Chicago to serve the middle western public and to take up the surplus funds. The disorganized character of the money market transactions in Chicago inevitably adds expense and risk and increases the cost over New York.

Up to the present time, Chicago cannot be said to have a call loan market. The grain, cotton, and produce trades have never developed the use of call loans to the same extent that the securities markets have. The Chicago Stock Exchange does not have a money desk. It may be said, however, in justice to the plan under way that a money desk is contemplated in the near future. The present call money rates in Chicago are largely the rates made by two or three of the principal banks to brokers. These rates are naturally about the same. Chicago

money in very large volume is loaned upon call in New York against prime stock exchange collateral. The Chicago stock exchange collateral is not held as favorably as that of New York. In fact, it has been said that Chicago names in New York will command a lower rate than in Chicago. A larger development of trading and market analysis in Chicago would relieve this difficulty.

The seasonal flow of money to and from Chicago is very pronounced because of the movements of country funds out of Chicago for the planting and harvesting of crops and back into Chicago when the crops are marketed. There is also a seasonal demand of commerce peculiar to the Great Lakes region. This is particularly noticeable in the grain export business. The foreign buying of grain and provisions in Chicago is seasonal as well as the traffic on the Great Lakes. This seasonal movement of funds draws heavily upon the bank deposits and affects the investment and trading in the money market.

Exact statistics of the amount of funds used in the securities, grain, cotton, and other markets cannot be obtained. In the first place, statistical information on these subjects has never been organized and compiled for the Chicago markets as it has been for the New York Stock Exchange. At any event exact information for any market cannot be obtained because the volume of funds borrowed increases and decreases with the resources of the firms and individuals carrying on the business. It is believed, however, that there is a tendency in Chicago to do more cash business than in the security markets of New York. This may be due to different habits built up in the two centers or it may be due to the lack of organization and the development of credit facilities for trading purposes in Chicago comparable to those of New York.

It would be a matter of interest to know to what extent Chicago banking and investment houses furnish the credit advances, commercial paper, and long term finance of the automobile industry, the steel mills, the railroads, the merchandising houses, and the mineral production of the district. It is a well-known fact that New York finances figure largely in these industries, but as pointed out above, these New York funds are or may be, in large part, a return to the Middle West of middle western deposits in New York.

While the extent to which New York enters into Chicago financing cannot be determined, some indication is exhibited by the Chicago branches of New York banking and brokerage firms, insurance companies, manufacturing and selling agencies in the Chicago district. The

leading New York investment houses have Chicago offices and distribute in this district a large portion of their New York underwritings. Many of these firms have taken on the characteristics of Chicago firms and prefer to be known as such.

Many of the major middle western corporations and particularly the railroads maintain their trustee, transfer, and paying agencies in New York. This is probably due in part to the requirement of the New York Stock Exchange for securities listed. At any rate, this concentrates the earnings of these corporations in New York banks and increases the loanable capital of New York. In part, this accounts for the lower money rates in New York at times. The deposits of these funds earned by middle western corporations in Chicago together with the development of Chicago securities markets to serve the middle western people and still use these funds in the same way that they are now being used would bring these increased deposits to Chicago banks. Moreover, the cost of collecting New York drafts by middle western banks and the public is more expensive than would be the cost of collecting these same drafts from Chicago. The requirement of the New York Stock Exchange would not interfere with this readjustment of financial settlements.

Another point that might be raised here is the failure of these middle western corporations whose securities are owned largely by middle western people to list their stocks and bonds upon the Chicago Exchange. It is said that the listing on the New York Exchange makes it undesirable to have these stocks listed on the Chicago Exchange also, because it would set up arbitrage between the two markets. This argument is very faulty when we consider the securities which are listed on the New York Exchange and also on London and the European exchanges.

Similar comments might be made concerning the insurance companies who do most of their business in the Middle West and maintain their entire bank deposits in New York and do most of their investment buying on New York security markets. The development of the Chicago security markets serving these investors would be a very great convenience and economy to the investors as well as increase the volume of business and profits for Chicago banks and brokers.

The relation of agriculture to the Chicago money market cannot be adequately pictured if confined to the middle western states. Since Chicago is the principal national and international market for these products, the crops and live stock of the Middle West, Southwest, Northwest, and in fact of the entire area between the two mountain

ranges find that the price base point is the Chicago price. It is probable that the price of these products and their volume affect directly the loans and deposits of Chicago banks and the entire money market through the in- and out-flow of the volume of purchasing power.

Money flows to and from a market as it does a central bank. The market where money will purchase the most is the market toward which funds will flow. The market in which money purchases the least not only ceases to attract outside buyers but drives its own people to other markets. The advantages of a market being a trading place and, consequently, the center of money activities was stated by the well-known English economist, R. H. Inglis Palgrave: "We reap a great advantage from the fact that our money market is a point where so many monetary transactions are carried on."¹¹

This same distinguished economist also noted that "a full supply of loanable capital at a moderate and fairly uniform charge is at least as important to the traders as a full supply at reasonable prices of the goods he deals in or of the raw materials he uses in his manufactures."¹²

The laws of the State of Illinois are for the most part unfavorable to the best economic interests of the State and the community. This may be illustrated particularly by the tax laws, and the corporation, and the banking laws. For example, the State imposes a tax upon the trading in securities of corporations not organized under the laws of the State. This, in itself, is a factor that tends to drive the securities markets outside of the State. The heavy property taxes which fall upon cash and corporate securities is particularly unfavorable. The corporation laws of the State do not encourage enterprises to maintain their head offices in Chicago because more favorable terms may be obtained from other states. The banking laws are particularly unfavorable as indicated by the prohibition of branch banking, a form of bank organization upon which all money markets have been built.

BUREAU OF BUSINESS RESEARCH
UNIVERSITY OF ILLINOIS

BULLETIN No 17, CHICAGO AS A MONEY MARKET

Errata

Page 57, line 22, insert word *property* before word *tax*.
line 23, strike out words *trading in*

In order to avoid a misunderstanding at some later reading of the bulletin, please insert this correction in the proper place.

APPENDIX A

**ELECTRIC POWER PRODUCTION IN
CHICAGO (1914-1926)**
(1913 = 100)

| Year | Index Number of Kilowatt Hours Produced |
|------|---|
| 1914 | 120 |
| 1915 | 129 |
| 1916 | 144 |
| 1917 | 160 |
| 1918 | 162 |
| 1919 | 175 |
| 1920 | 203 |
| 1921 | 208 |
| 1922 | 240 |
| 1923 | 277 |
| 1924 | 300 |
| 1925 | 333 |
| 1926 | 375 |

**SALES ON THE CHICAGO STOCK
MARKET* (1914-1926)**
(1913 = 100)

| Year | Index Numbers | |
|------|---------------------------------|-------------------|
| | Number of Shares of Stock | Value of Bonds |
| 1914 | 39 | 97 |
| 1915 | 72 | 98 |
| 1916 | 161 | 127 |
| 1917 | 169 | 96 |
| 1918 | 195 | 49 |
| 1919 | 740 | 56 |
| 1920 | 737 | 50 |
| 1921 | 517 | 44 |
| 1922 | 994 | 107 |
| 1923 | 1328 | 128 |
| 1924 | 1083 | 241 |
| 1925 | 1408 | 93 |
| 1926 | 1024 | 85 |

*Stock Exchange closed from July 31 to November 23, 1914.

**LAKE TRAFFIC OF THE CHICAGO
DISTRICT* (1914-1925)**
(1913 = 100)

| Year | Index Number of Tonnage of Arrivals |
|------|---|
| 1914 | 91 |
| 1915 | 94 |
| 1916 | 106 |
| 1917 | 101 |
| 1918 | 96 |
| 1919 | 85 |
| 1920 | 96 |
| 1921 | 77 |
| 1922 | 98 |
| 1923 | 126 |
| 1924 | 103 |
| 1925 | 135 |

*The district includes Chicago, Michigan City, Waukegan, Gary, and Indiana Harbor.

**GRAIN FUTURE SALES ON THE CHICAGO
BOARD OF TRADE (1922-1926)**
(1921 = 100)

| Year | Index Number |
|------|--------------|
| 1922 | 84 |
| 1923 | 67 |
| 1924 | 85 |
| 1925 | 128 |
| 1926 | 89 |

INDEXES OF GRAIN MOVEMENT
IN CHICAGO (1914-1925)
(1913 = 100)

| Year | Index Numbers | |
|------|---------------|-----------|
| | Receipts | Shipments |
| 1914 | 109 | 115 |
| 1915 | 97 | 109 |
| 1916 | 110 | 107 |
| 1917 | 78 | 76 |
| 1918 | 97 | 78 |
| 1919 | 81 | 78 |
| 1920 | 64 | 73 |
| 1921 | 97 | 95 |
| 1922 | 108 | 110 |
| 1923 | 78 | 72 |
| 1924 | 85 | 74 |
| 1925 | 63 | 59 |

INDEX OF NEW BUILDING CON-
STRUCTION IN CHICAGO (1914-1926)
(1913 = 100)

| Year | Index Numbers | | |
|------|------------------|---------|-------|
| | Feet of Frontage | Permits | Cost* |
| 1914 | 90 | 91 | 101 |
| 1915 | 99 | 95 | 116 |
| 1916 | 102 | 94 | 105 |
| 1917 | 50 | 45 | 46 |
| 1918 | 27 | 23 | 23 |
| 1919 | 65 | 61 | 56 |
| 1920 | 42 | 34 | 34 |
| 1921 | 72 | 72 | 84 |
| 1922 | 123 | 115 | 151 |
| 1923 | 147 | 142 | 195 |
| 1924 | 149 | 149 | 189 |
| 1925 | 166 | 165 | 202 |
| 1926 | 137 | 263 | 243 |

*Deflated by dividing the computed index for each year by an index number of construction costs for that year.

INDEX OF THE MEAT PACKING
INDUSTRY IN CHICAGO (1914-1926)
(1913 = 100)

| Year | Index Numbers | |
|------|------------------------|---------------------|
| | Receipts of Live Stock | Animals Slaughtered |
| 1914 | 88 | 92 |
| 1915 | 91 | 99 |
| 1916 | 105 | 113 |
| 1917 | 99 | 95 |
| 1918 | 120 | 118 |
| 1919 | 118 | 119 |
| 1920 | 104 | 92 |
| 1921 | 104 | 96 |
| 1922 | 107 | 96 |
| 1923 | 118 | 111 |
| 1924 | 116 | 107 |
| 1925 | 101 | 93 |
| 1926 | 101 | 89 |

REAL ESTATE TRANSFERS IN COOK
COUNTY, ILLINOIS (1918-1926)
(1917 = 100)

| Year | Index Number of Transfers |
|------|---------------------------|
| 1918 | 86 |
| 1919 | 127 |
| 1920 | 147 |
| 1921 | 144 |
| 1922 | 175 |
| 1923 | 208 |
| 1924 | 209 |
| 1925 | 225 |
| 1926 | 223 |

LIVESTOCK RECEIPTS AT THE PRINCIPAL PACKING CENTERS OF THE CHICAGO MARKET AREA (1914-1926)
(1913=100)

| Year | Index Number of Receipts |
|------|--------------------------|
| 1914 | 93 |
| 1915 | 97 |
| 1916 | 111 |
| 1917 | 103 |
| 1918 | 124 |
| 1919 | 127 |
| 1920 | 110 |
| 1921 | 106 |
| 1922 | 111 |
| 1923 | 131 |
| 1924 | 132 |
| 1925 | 116 |
| 1926 | 113 |

NEW BUILDING CONSTRUCTION IN THE CHICAGO MARKET AREA* (1914-1926)
(1913=100)

| Year | Index Number of Permits |
|------|-------------------------|
| 1914 | 115 |
| 1915 | 173 |
| 1916 | 193 |
| 1917 | 184 |
| 1918 | 157 |
| 1919 | 224 |
| 1920 | 159 |
| 1921 | 209 |
| 1922 | 292 |
| 1923 | 287 |
| 1924 | 315 |
| 1925 | 437 |
| 1926 | 469 |

*The figures used in the above chart not include data for Minnesota, North Dakota, South Dakota, and Northern Michigan until 1915, and Tennessee and Arkansas until 1923.

PIG IRON AND FERRO-ALLOY PRODUCTION IN THE CHICAGO MARKET AREA (1920-1926)
(1915=100)

| Year | Index Number |
|------|--------------|
| 1920 | 132 |
| 1921 | ... |
| 1922 | 104 |
| 1923 | 151 |
| 1924 | 117 |
| 1925 | 146 |
| 1926 | 153 |

COKE PRODUCTION IN THE CHICAGO MARKET AREA (1919-1926)
(1915=100)

| Year | Index Number |
|------|--------------|
| 1919 | 213 |
| 1920 | 242 |
| 1921 | 141 |
| 1922 | 208 |
| 1923 | 280 |
| 1924 | 236 |
| 1925 | 281 |
| 1926 | 308 |

PASSENGER CAR REGISTRATION IN THE
CHICAGO MARKET AREA (1923-1926)
(1922 = 100)

| Year | Index Number |
|------|--------------|
| 1923 | 121 |
| 1924 | 138 |
| 1925 | 154 |
| 1926 | 169 |

NET CORPORATE INCOME IN THE
CHICAGO MARKET AREA (1919-1925)
(1918 = 100)

| Year | Index Number |
|------|--------------|
| 1919 | 150 |
| 1920 | 98 |
| 1921 | 52 |
| 1922 | 89 |
| 1923 | 100 |
| 1924 | 93 |
| 1925 | 120 |

NET INDIVIDUAL INCOME IN THE
CHICAGO MARKET AREA* (1918-1925)

| Year | (1918 = 100) | (1917 = 100) |
|------|--|---|
| | Index Number of Income from all Sources | Index Number of Income from Invest- ments only |
| 1918 | .. | 77 |
| 1919 | 123 | 86 |
| 1920 | 147 | 95 |
| 1921 | 115 | 87 |
| 1922 | 124 | 98 |
| 1923 | 147 | 120 |
| 1924 | 147 | 124 |
| 1925 | 120 | 113 |

*Income in the Various States, Leven, Maurice National Bureau of Economic Research, 1925. The figures taken from this source give a far more complete picture of the personal income situation than do figures taken from income tax returns. Consequently, they are used to supplement the chart which shows personal income. Unfortunately, the study covered only three years.

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