

Monthly Review



TWELFTH FEDERAL RESERVE DISTRICT

FEDERAL RESERVE BANK OF SAN FRANCISCO

March 1958

The Current Reporting Series as a Guide to Business Activity	34
Review of Business Conditions	48

The Current Reporting Series as a Guide to Business Activity¹

THE task of predicting movements in business activity is a hazardous one, and the way of the predictor is hard. Nevertheless, that branch of theoretical economics dealing with the explanation of business cycles and forecasting fluctuations in the level of activity has not wanted for laborers in the vineyard. The theoretical approaches have varied from explanations of cyclical fluctuations in terms of sunspots to descriptions of the economic system in terms of formal mathematical structures of a forbidding number of equations. Truly, the investigator in this area will not lack for guidance.

A series such as the Weekly Reporting Member Bank Series prepared and released by the Federal Reserve System could easily be construed as an important indicator of business conditions. The series is not intended to be interpreted in this fashion. It is a measure of banking operations—nothing more. However, the line of distinction between purely banking statistics and indicators of general economic activity tends to become blurred. Banking is such an integral part of the general scheme of production that the movements of banking data follow a path roughly parallel to that of the level of business activity. It is the work of this second part of the study to determine how rough this path is and how smooth the correspondence between the two sets of data.

In brief summary, the following relationships have been found to exist between the current series for Weekly Reporting Member Banks and certain indicators of business activity:

1. Total loans and business loans of reporting banks show a tendency to lag behind downturns in general activity.

¹ This is the second part of a study of banking statistics made available by the Federal Reserve System and taken from the "Principal Resource and Liability Items of Reporting Member Banks in Leading Cities," a report released each Wednesday noon by the twelve Federal Reserve Banks for their respective districts and by the Board of Governors of the Federal Reserve System for the nation. The first part of the study was published under the title "The Current Reporting Series as a Guide to Banking Activity" in this *Review*, September 1957, pp. 114-126.

We wish to acknowledge our indebtedness to Dr. Geoffrey H. Moore of the National Bureau of Economic Research for making available data of the National Bureau and for substantive and editorial comments on a draft of this article.

2. No significant relation was found to exist between Weekly Reporting Member Bank Series and business upturns.
3. Industrial stock prices, wholesale prices of commodities, and the index of industrial production all tend to turn down before total loans and business loans.
4. Industrial stock prices generally turn down before loans for carrying securities and usually turn up before security loans do.
5. Business loans tend to lead inventories.

The business cycle

What is the business cycle? First, we may disavow a persistent notion that there is a singularly unique pattern of fluctuations, a regular rhythmical movement of economic activity that corresponds in some manner to the cyclical patterns of the natural processes. Statistical studies have shown, however, that there is a periodicity attachable to many types of business activity. It has been suggested that there is not one business cycle, but rather three: a long cycle of about fifty years duration, a cycle about eleven years long, and a short cycle of three to four years. Many business series, of course, do not follow any of these general fluctuations with regularity. This study will be concerned with an examination of the behavior of the Weekly Reporting Member Bank Series, hereinafter abbreviated WRMBS, in the shorter or "minor" cycle as it is sometimes called.

There are clearly perceptible patterns of cyclical behavior in particular industries or sectors of the economy. Fluctuation in the production of pig-iron is a classical example of cyclical movements. It is widely considered that the construction industry has a cycle peculiarly its own with a duration of about 18 years.¹ But still the question of why there are business cycles is a much disputed one and even the positive identification of cycles is an uncertain business. It is clear to most observers that the economy as a whole is usually in a stage of expansion or contraction,

¹ See, for example, Long, C. D., Jr., *Building Cycles and the Theory of Investment* (Princeton: Princeton University Press), 1940.

but it is much less clear where one stage passes into the other. The turning points of crisis and contraction at the peak of the cycle and depression and expansion at the trough of the cycle are not readily discernible. There is no surefire indicator that will at all times tell the turning point.

It is an easier task to determine whether the economy is prosperous or depressed—all one need do is look about him. If all who seek it can find employment, if prices are advancing and production is increasing, we are in the expansive phase. If jobs are scarce and production in general is low, if prices are falling and unsold goods glut the shelves of sellers, we are in the contractive phase of the cycle. This much is apparent even to the most casual observer. But to the questions of how far advanced we are in the particular phase and how soon we may expect a turning point, the answers are seldom clear and never certain. The spectres of the predictions of unending prosperity in 1929 and the auguries of mass unemployment in 1946 return again and again to haunt the prophets.

Indicators of activity

The WRMBS have what would appear to be ideal qualities for business indicators since they are available on both a national and a regional basis and are published with a reporting lag of only one week. How well they will serve in this capacity depends, of course, upon the relative strength or weakness of the relation between banking activity and general business activity. In the complexity of a modern commercial and industrial economy, it is only a single remove from the money market to the market place where final products are bought and sold. Ours is a money economy and information concerning the money market implies information about the business sector of the economy. The direct contribution of banking activity to the total production of final goods and services—the Gross National Product—is very small, amounting only to net interest paid and wages and salaries paid by banks. However, the banking system is a very necessary adjunct to production and, in general, an expansion or contraction in general economic activity will be paralleled by an expansion or contraction in banking activity. The most sig-

nificant indicators of business activity are often available only on a monthly or quarterly basis and then only after a considerable time lag. The movements which they describe may already have taken place, thus nullifying their value as predictive indicators. Therefore, if it could be established that the WRMBS describe a typical pattern in the business cycle, current banking data would provide a basis for interpreting the cycle. If this should prove not to be the case, it would prescribe limitations to the use of such data in analyzing the current situation.

The National Bureau approach

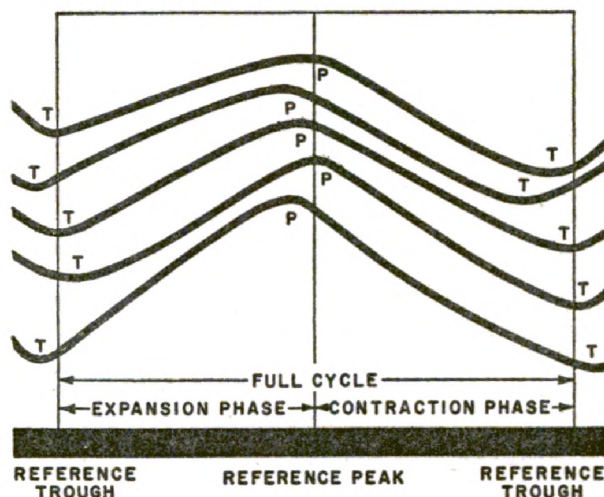
This part of the analysis will be based in large part upon techniques developed and used by the National Bureau of Economic Research in their studies of the cyclical behavior of certain series of economic data. In analyzing 800 time series, some of them spanning 75 years and more, the National Bureau has recognized certain specific cyclical patterns (or the lack of such patterns). The behavior of these patterns taken in the aggregate determines the behavior of business cycles. There is no one particular series whose fluctuations may be called “the business cycle.” The business cycle as defined by the National Bureau represents the aggregative movement of all economic series; that is, an expansion is defined as a phase in which the majority of economic series are expanding, though not all of them nor at the same rate. And, similarly, the contraction of activity represents the aggregative contractive movement produced by the decline of the majority of all series. To serve as a touchstone for comparing various series, the National Bureau has set up “reference cycles.” These consist of the dates at which the peaks and troughs of total activity occur and the phases of expansion and contraction included between these turning points.

It should be emphasized that the term “reference cycle” is an abstraction bearing no precise correspondence to particular economic series, though many broad aggregates, such as the Federal Reserve index of industrial production, usually move very closely in accordance with it. The reference cycle is indicative of the aggregative movement of the total of all “specific cycles,”

the designation given to the individual cycles peculiar to each series. The National Bureau reference cycle dates have been determined by an exhaustive study of business annals and of the turning points of specific series. Chart 1 gives a simple illustration of how the reference dates are selected.

CHART 1

ILLUSTRATION OF THE DETERMINATION OF REFERENCE CYCLE TURNING POINTS FROM SPECIFIC CYCLES



The reference peaks and reference troughs represent the points in time around which the peaks and troughs of the specific series tend to be clustered. No attempt is made to construct a composite curve from the specific curves. The reference cycle is a consensus rather than an actual cyclical pattern. A reference peak depicts the month by which most of the series have started to turn down and similarly the reference trough represents the date by which a majority of specific series have started to turn up. Table 1 gives the National Bureau reference turning points for the period to be considered.

WRMB Series To Be Considered

The procedure to be followed in this inquiry will be to examine the various series of the WRMBS for the cycles for which data are reported. The WRMBS to be studied have been plotted on a monthly basis from 1919 to the present, using the average figures for the month. The data are drawn from *Banking and Monetary Statistics* for the period 1919 to 1941, and

from the *Federal Reserve Bulletin* on a currently reported basis since 1942. They have not been adjusted for seasonal variation or trend because they are not currently published nor used by analysts in adjusted form. We are concerned with their interpretation as presently published. Chart 2 shows the WRMBS for the period following World War II.

The series "Total Loans and Investments," most comprehensive of the asset items of Reporting Member Banks, has not been included for exploration in this portion of the study because the behavior of loans differs from that of investments during the business cycle. Movements in the loans and investments of banks may and do occur in opposing directions. A fitting example of this is the behavior of total loans and investments of commercial banks in the period 1945 to 1950. The series showed a sharp decline from the 1945 high, reaching this level again only in 1950. This movement masked two significant changes in the structure of commercial bank assets: an abrupt decline in the holdings of United States securities and a brisk rise in total loans extended by banks. Chart 2 gives a striking illustration of these movements since 1945. This series, then, may conceal about as much as it discloses.

Total loans

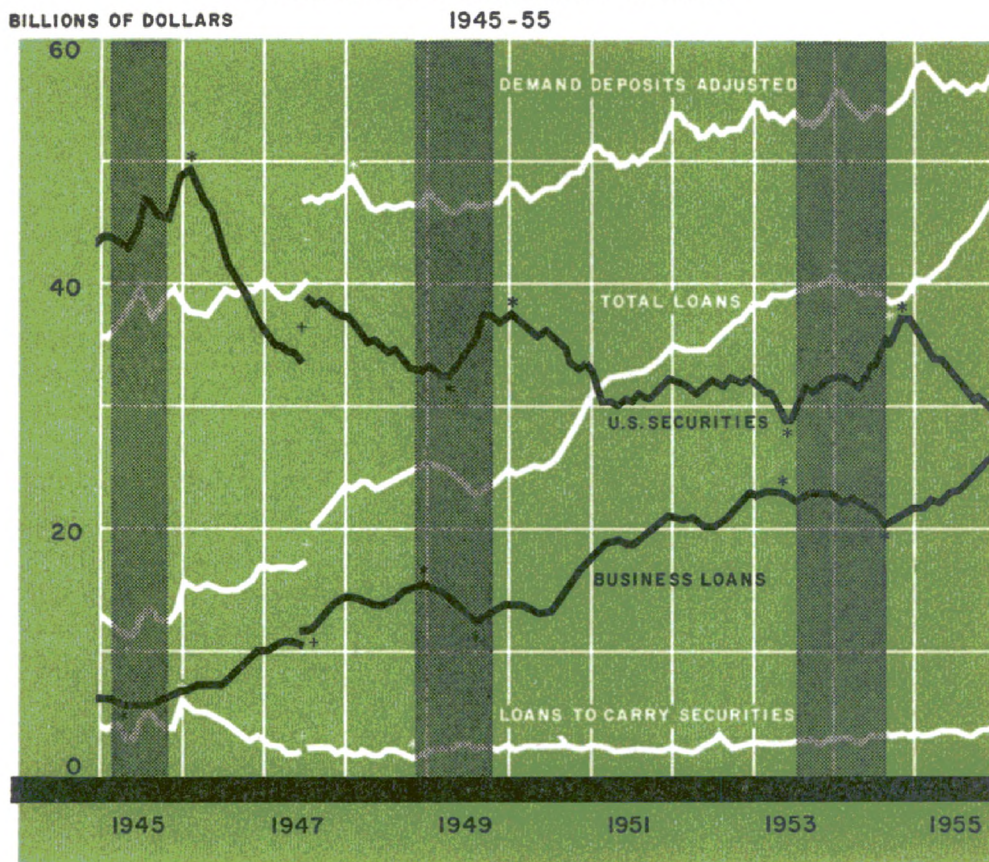
To gain a perspective of how fluctuations in the level of general banking activity conform to movement in over-all activity, we will start with a consideration of total loans of reporting banks.

TABLE 1
DATES OF REFERENCE CYCLE PEAKS AND TROUGH IN THE UNITED STATES, 1919-54

Monthly Reference Dates		Duration in Months		Cycle
Peak	Trough	Expansion	Contraction	
	April 1919			
Jan. 1920	July 1921	9	18	27
May 1923	July 1924	22	14	36
Oct. 1926	Nov. 1927	27	13	40
June 1929	Mar. 1933	19	45	64
May 1937	June 1938	50	13	63
Feb. 1945	Oct. 1945	80	8	88
Nov. 1948	Oct. 1949	37	11	48
July 1953	Aug. 1954	45	13	58

Source: Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles*, (New York: National Bureau of Economic Research) Table 16. Revisions of some dates and dates subsequent to 1938 were supplied by the NBER.

CHART 2
SELECTED REPORTING SERIES
1945-55



Source: Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*.

Loans represent the extension of credit by banks to the other sectors of the economy. Making loans is a major part of the normal business operations of a commercial bank. The bank serves also as a depository for the public's funds, but its principal activity is trafficking in claims on its own good name. An increase in loans is reflected in an increase in demand deposits, since the bank usually credits the proceeds of the loan to the checking account of the borrower. Traditionally, the "proper" sort of loan that a bank should make is the self-liquidating type of loan to a businessman. This loan enables the businessman, say a merchant, to lay in a stock of goods, the subsequent sale of which provides receipts out of which the loan is retired. Bank loans were never to be made for the purpose of providing capital to the firm, since this was the function of the securities market. In other words, every loan presumably led to an expansion of trade. If the total of loans outstanding was high, it was so because the level of economic activity was also high.

But suppose that the scope of bank lending is widened, as it has been since this early tradition was established. Suppose that loans are made for purposes other than for trade and by persons outside the business community. Consider, for example, consumer loans. If loans are contracted to buy *new* autos, appliances, etc., this is a fair indication that business is expanding (1) because consumer income is high or rising and (2) because sales of consumer goods are high or rising. But suppose a loan is used to buy an old house or a used car, or to buy shares of outstanding securities. In this case, the money supply has been expanded by

the amount of the loan, but there is no corresponding increase in the production of new goods. Inclusion of these categories, then, weakens but does not destroy the case for using total loans as a measure of business activity. Since production is used as an important gauge of economic activity, total loans, some of which are made merely to facilitate a transfer in the ownership of existing goods, may generally be broadly sympathetic with the movement in the business cycle but can not be expected to pin down its turning points.

Business loans

We may obtain a closer correspondence to business activity by shifting our attention from total loans to the WRMB series "Commercial and Industrial Loans" (to be referred to from this point on as "business loans").¹ There are

¹From June 1937 to January 1956 the business loan series used was "Commercial, Industrial and Agricultural Loans." Prior to June 1937, it is assumed that business loans make up the greatest part of the difference between reported "Total Loans" and "Loans on Securities."

FEDERAL RESERVE BANK OF SAN FRANCISCO

260 standard classifications of types of business in this grouping, so it cannot be expected that the aggregate movement of the series will reflect changes in each and every component class of business. The traditional short-term, self-liquidating business loan has been modified considerably over the years. One of the qualifications is the increased resort to the business "term loan" in recent years, accounting for over a third of all business loans in member bank portfolios in 1955.¹ These are loans having a maturity of from one to five years. They are usually repayable in instalments rather than in lump sum payments. How would the increasing use of term loans affect cyclical movements in loans outstanding? It would seem that upward movements of loans in an expansion of the economy would be more pronounced, while, if the loans are to be retired in instalments, declines would be more gentle than if loans were to be repaid in a single payment. Term loans also tend to be larger than single-payment, self-liquidating loans.

As a further modification, not all short-term business borrowings are transacted with the banking system. Businesses may obtain credit from their suppliers, and book credit may be extended by business firms to their customers; or, if the firm is sufficiently well known, it may make use of its own paper in the money market. However, there is no reason to believe that the cyclical behavior of these types of non-bank credit will show a significant difference from the pattern of bank credit extended to the business community.

Loans for carrying securities

This series was the largest specific loan series in the WRMBBS prior to 1934. In the postwar years it has been relatively unimportant in the total of loans outstanding, possibly because of the higher margin requirements imposed upon securities purchases. Pronounced movements in stock market activity are not solely the result of sharp increases or decreases in *production*, but rather are due in large part to reactions to heightened or depressed expectations of the future course of affairs. A breath of uncertainty about the political situation or about events overseas may trigger a short but sharp turn and, as a result, a change

in loans for securities. This again is for the most part a loan to facilitate an exchange of existing assets. If loans for carrying new securities issues could be separated out from all loans on securities, this series might move sympathetically or precede rises or declines in production activity. Since this breakdown is not feasible, little may be expected from loans on securities as an indicator. It should be noted that changes in margin requirements may affect the demand for loans for carrying securities quite apart from changes in business conditions.

Bank holdings of United States securities

A consideration of United States securities holdings by reporting banks would appear at first glance to hold no relevance for a study of the business cycle. It should be remembered, however, that commercial banks are profit-motivated institutions and their earnings derive from the assets that they hold. These assets may consist of loans to business or to individuals, or they may consist of bonds purchased by the bank. The prudent banker will arrange his asset portfolio with an eye to earnings as well as safety, so that he will have a source of income at all times. To do this, he may purchase securities, either government issues or corporate bonds when borrowers are disinclined to borrow, as in the 1930's, or he may sell securities or let them mature when the demand for loans is brisk, as has been the case since World War II. Since banks will alter their portfolios in response to changing business conditions, this series may reflect these changing conditions.

Demand deposits

Thus far we have mentioned only the asset side of the banks' balance sheet. How does the cyclical behavior of demand deposits compare with that of loans and investments? Since, for the banking system, increases in loans outstanding give rise to increases in demand deposits, it would seem the one might be as reliable an indicator as the other. This is true, although consideration of demand deposits brings to light an important additional factor which is attributable only to deposits, not loans. A loan represents a claim against the individual, the borrower, which

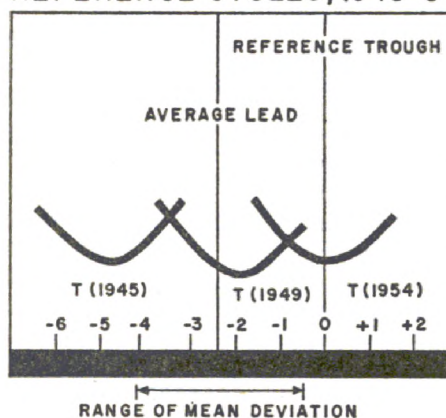
¹"Business Loans of Member Banks," *Federal Reserve Bulletin*, April 1956, pp. 332-334.

is not negotiable or transferable, and which is offset by an initial claim against the bank—the increase in his checking account—in favor of the borrower, which is negotiable and transferable. It is this element of transferability, or the property of passing as money, that is important. The demand deposit arising out of the loan transaction can turn over slowly or quickly, while the loan itself is fixed. This possible variation in the rates of use of demand deposits is not reflected in the total figures for deposits outstanding, but must be sought in estimates of the velocity or turnover of money, most of which consists of bank deposits.

Behavior of the WRMBS in the Business Cycle

Having defined the business cycle as the National Bureau reference cycle for the purpose of this study, the WRMBS will be overlaid upon this cycle and compared with it in three ways. The first and perhaps most significant test will be to compare the timing of the turning of the WRMBS to the turning points of the reference cycle. The second comparison will be made between the general movements of the WRMBS and the reference cycle between turning points. The third test is a comparison of the average du-

CHART 3
COMPARISON OF BUSINESS LOAN TROUGHS TO REFERENCE TROUGH IN TWO REFERENCE CYCLES, 1945-54



rations of the WRMBS cycles and their phases with the average length of the reference cycle and its component parts.

The method of comparison used in the first test will be to compare the dates of the peaks and troughs of the WRMBS to the corresponding reference peaks and troughs. This is done by taking the average of the algebraic sum of the differences in months between the specific WRMBS turning points and the reference turning points. An examination of the relationship of the turning points of business loans and reference turning points in the two cycles following World War II should serve to illustrate the method of comparison that is employed.

To illustrate the method of comparison further, the business loans troughs or lower turning points are pictured in Chart 3 using the reference trough as a levelmark and plotting the business loan troughs relative to this mark. Reading from the preceding table, we see that in the two cycles following World War II, business loans turned up an average 2.3 months in advance of the general business recovery. The mean or average deviation defines a lead range of from -4.1 months to -0.5 months about this average. This is obviously not the range of observations, since some of the original observations lie outside of it. But as the average is a measure of central tendency, the mean deviation describes the average amount by which the figure given, the average lead in this case, varies from the original observations.

TABLE 2
ILLUSTRATION OF METHOD
DIFFERENCES IN MONTHS BETWEEN BUSINESS LOAN AND REFERENCE CYCLE TURNING POINTS TWO POST-WORLD WAR II CYCLES, PEAKS AND TROUGHS

	Differences at Peak Months ¹	Deviation of Observation From Average of Observations ²	Differences at Trough Months ³	Deviation of Observation From Average of Observations
Cycle 1	+ 1	1.5	- 5	2.7
Cycle 2	+ 4	1.5	- 2	0.3
AVERAGE	+ 2.5	(1.5)	- 2.3	(1.8)

¹ The minus and plus signs refer to the number of months by which the business loan turning points precede or follow the reference turning points. A zero indicates that the two turning points coincide, that is, occur in the same month.

² For explanation, see text and Chart 3.

³ There is always one more trough than the number of cycles, since the fluctuations are measured from trough to trough.

FEDERAL RESERVE BANK OF SAN FRANCISCO

TABLE 3
COMPARISON OF TURNING POINTS OF REFERENCE
CYCLES AND SELECTED REPORTING SERIES

	Total Loans		Business Loans		Loans For Carrying Securities		Holdings of U. S. Securities (Straight)		Holdings of U. S. Securities (Inverted)		Demand Deposits	
	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average	Average Months Lead (—) or Lag (+)	Mean Deviation Around Average
7 Cycles, 1919-38, 1945-54												
Reference Peak	+4.8 (1.8)		+4.8(1.8)		+ 2.6 (6.9)		-18.8(13.2)		+0.7 (12.7)		- 3.8(4.5)	
Reference Trough	+6.0(10.0)		+7.0(9.3)		+18.8(13.9)		- 2.0(8.8)		+3.7 (5.9)		- 3.1(2.8)	
2 Cycles, 1945-54												
Reference Peak	+3.0(2.0)		+2.5(1.5)		- 1.0(11.0)		-37.5 (4.5)		+1.5 (3.5)		-10.0(0) ¹	
Reference Trough	-3.0(2.0)		-2.3(1.8)		+17.0(18.0)		-10.5 (4.5)		+3.3 (0.4)		-45.0(1.5) ¹	
6 Cycles, 1919-27, 1933-38, 1945-54												
Reference Peak	+5.0(2.0)		+4.8(2.2)		+ 2.5 (8.5)		-20.6(13.7)		+6.8 (5.2)		- 1.5(5.0)	
Reference Trough	+0.4 (5.0)		+1.2(5.6)		+14.2(16.2)		- 1.2(11.3)		+6.9(5.0)		- 3.8(3.4)	

¹ Only one cycle.

The mean deviation serves two purposes. First, it gives a clue to the degree of dispersion of observations about the average. Second, if the mean deviation does not exceed the average lead (as it does not in the above case), the turning points of the tested series have generally led the reference turning point. In the event that this average deviation exceeds the average lead or lag of the WRMBS turning point, the range straddles the reference turning point and the WRMBS has both led and lagged the reference turning point in the course of the several cycles examined.

Behavior of the WRMBS at the turning points

We are now ready to examine Table 3, which summarizes the comparisons of the timing of the turning points of five selected WRMB series with those of the reference cycles in three different combinations of cycles between 1919 and 1954. The first comparison includes all seven of the cycles of this period with the exception of the World War II years. In the second, the two post-war cycles are considered apart from the prewar cycles and presented in the fashion in which they best correspond to the reference cycle. Third, the cycle from 1933 to 1938, which began with the trough of the Great Depression, is omitted from this grouping of cycles because the low level of activity during this cycle makes it very unlike the others examined. The differences apparent in a

single series caused by a selective grouping of cycles clearly illustrate that each cycle differs from every other cycle. The omission of the 1933-38 cycle has a considerable effect on the timing of the lower turning point of total loans and business loans.

In an examination of the selected WRMB series in seven cycles, there are three series which demonstrate a distinctive and consistent pattern at the turning points. Total loans and business loans lag the reference peak by identical intervals of 4.8 months. Demand deposits lead the reference trough by an average of 3.1 months. These are the only instances in which the points all fell on one side of the reference turning point. The deviations of the loans for carrying securities describe such a wide range within which the turning points may precede or follow the reference turning points that nothing can be said with certainty about their characteristics.

Bank holdings of United States securities led the reference cycle by such a wide margin that it was thought advisable to test this series by inverting it, that is, by comparing the peaks of the specific series with reference troughs and the troughs of this series with reference peaks. While the straight peak to peak comparison showed that in every instance bank holdings of Government securities turned down before the ref-

erence peak, the lead was at least 18 months with a mean deviation of over a year. When the series is shown as inverted, most of the leads now become lags, with the average lag being much closer to a reference turning point than was the average lead with a peak to peak and trough to trough comparison. The typical behavior of the peaks of the specific cycles for bank holdings of United States securities would thus appear to occur soon after a reference trough and far in advance of a reference peak. The smaller mean deviations that are obtained by using the inverted series justify this manner of treatment.

In the two postwar cycles total loans and business loans show a much more distinctive and consistent pattern than any of the other series at both the upper and lower turning points. Total loans, for example, lag by three months at the peak with a mean deviation of two months and lead at the trough by exactly the same amounts and deviation. Business loans in these two cycles have moved closer to the reference turning points in these two cycles than in the other comparisons and show a tendency to lead at the trough. These two were the only series in the two most recent cycles studied that showed a consistent pattern of behavior at both of the turning points.

Comparison of the turning points of the five WRMB series in six cycles shows the most distinctive patterns of behavior. Total loans lag behind the reference peak within the narrow range of three to seven months. Business loans, on the average, decline at the upper turning point before total loans but show a wider range of variability relative to the reference peak. Both of these series are much less reliable at the

trough, and tend to lag; but, as the mean deviation demonstrates, they have led the reference upturn in some cyclical recoveries. The inverted series, holdings of United States securities, shows the most consistent timing. In the six cycles examined, the turning points of this series lag the reference cycle at both the peak and the trough, though within a rather wide range of from about 1.5 months to almost a year. Indeed, this series is the only one of the five WRMB that shows a consistent pattern of behavior at both of the cyclical turning points. Demand deposits of reporting banks turn up at the trough before general activity experiences a recovery, but within a rather wide range.

The WRMB examined between turning points

Table 4 is concerned with the behavior of the WRMB examined between the turning points; that is, during the expansive and contractive phases of the reference cycle.

Chart 4 serves to illustrate the behavior of total loans in the reference cycle with the individual cycles identified by date.

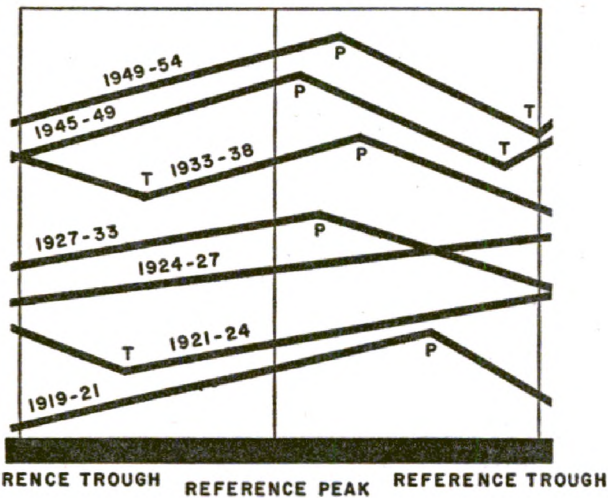
The behavior of total loans in the expansion phase supplements what was said about the timing of the turning points of this series. In the expansion phase—from reference trough to peak—this series either rose throughout the entire interval, or fell at the beginning of the phase and then started to rise for the rest of the expansion. In the first instance, that of a continual rise, there were no turning points in the expansion phase. The trough of the series might have coincided with the trough of the reference cycle, or it might have preceded it; and the peak of this

TABLE 4
**GENERAL BEHAVIOR OF SELECTED REPORTING BANK SERIES
 DURING THE REFERENCE CYCLE, 7 CYCLES, 1919-54**

Behavior	Total Loans		Business Loans		Loans for Carrying Securities		Holdings of U. S. Securities		Demand Deposits	
	Expansion	Contraction	Expansion	Contraction	Expansion ¹	Contraction	Expansion	Contraction	Expansion	Contraction
Rose	5	2	5	2	1	2	...	1	3	2
Rose-Fell	...	5	...	5	1	3	4	1	3	2
Fell-Rose	2	...	2	...	4	...	1	4	1	3
Fell	...	...	...	...	...	2	2	1	...	...

¹ Data available for only six expansions.

CHART 4
CYCLICAL BEHAVIOR OF TOTAL LOANS
DURING SEVEN REFERENCE CYCLES



series either coincided with the reference peak or followed it. In the case where the series fell and then rose during the expansion phase, the lower turning point of the series clearly lagged the reference trough. In no case did the upper turning point or peak of the total loans series precede the peak of the reference cycle. The behavior of total loans in the contraction of the reference cycle, while less characteristic than the expansion, also has a story to tell. The most typical behavior of this series is to rise and then fall in the contraction. This means that the upper turning point most often falls in the contractive phase, which squares with what has been said earlier about the timing of the peaks of this series. The instance in which this series rose during a reference contraction was in the 1920's when both total loans and business loans expanded from 1923 to 1929, extending over more than two complete reference cycles.

Demand deposits, while rising throughout most of the expansion phases, also showed a tendency to rise in a good share of the contractive phases. In two cases this series moved contra-cyclically in the contraction, rising throughout. In three other cases the series reached a trough early in the contraction and rose for the rest of this phase.

Loans for carrying securities give the appearance of contracting during a considerable part of the boom. There seems to have been a change in

the cyclical behavior of this series since World War II. If the turning points for the postwar series are inverted, a somewhat better fit is obtained for this period. Bank holdings of United States securities conform rather well to the reference cycle with four of seven peaks in the expansion phase and four of seven troughs in the contraction. But as was mentioned, the peaks of this series tend to occur so early in the expansion that they might better be treated as lagging the reference trough.

Comparison of WRMBS with reference cycle lengths

The timing of the turning points and their behavior during the separate phases of the reference cycle indicate that the specific cycles of the WRMBS do not correspond or coincide with the reference cycle. Table 5 gives the average length of the expansion and contraction phases of the reference cycle, together with the average length of the specific cycle for the seven cycles considered and for the postwar cycles.

The average length of the reference cycle during seven complete cycles from 1919 to 1954 was 48 months, with the expansion phase about one and one-half times the length of the contraction. In the two postwar reference cycles, the cycle averaged 53 months, with the expansion about four times as long as the contraction. These postwar contractions were, of course, of a much milder nature than the sharp dips of 1920 and 1937 and the severe and protracted decline from the 1929 heights. They were more in the nature of pauses in the general postwar expansion than

TABLE 5
COMPARISON OF THE AVERAGE DURATION OF EXPANSIONS AND CONTRACTIONS OF SELECTED REPORTING SERIES WITH REFERENCE CYCLES

Reference Cycle	7 Reference Cycles, 1919-54			Number of Specific Cycles	2 Reference Cycles, 1945-54		
	Expansion	Contraction	Cycle		Expansion	Contraction	Cycle
Total Loans	29.9	18.1	48.0	5	44.0	12.0	53.0
Business Loans	45.8	25.2	71.0	5	48.5	7.5	56.0
Loans for Carrying Securities	44.8	24.6	69.4	5	47.0	8.5	55.5
Holdings of U. S. Securities	37.5	33.2	70.4	5	9.5	20.5	30.0
Demand Deposits	22.1	22.3	44.4	7	13.5	39.0	52.5
	36.2	18.6	54.8	5	30.0 ¹	15.0 ¹	45.0 ¹

¹ One cycle.

retreats. In general, the specific cycles for the loan series are longer than the reference cycles. The relative proportions of the separate phases of the total loans and business loans cycles are nearly identical to the proportions of reference expansions to contractions, while the expansions of the loans for carrying securities cycle were shorter relative to the contractions. In the two postwar cycles, total loans and business loans expansions were both absolutely longer and also proportionally greater relative to their contractions than the reference.

The phases of holdings of United State securities are almost evenly divided between expansion and contraction when all of the cycles are considered. In the two cycles following World War II, contractions averaged about three times as long as expansions due to the fact that there have been heavy sales by banks since 1946. The demand deposit series in the 1919-54 interval shows a complete cycle shorter than the reference cycle, though the lengths of expansions relative to contractions is about the same.

**Summary of comparisons:
WRMBS with reference cycle**

What general conclusions may be drawn from the relationship of the WRMBS to the National Bureau reference cycles as representative of the business cycle? It has been seen that the timing of the WRMBS in certain cases seems to fall into a distinctive pattern: total loans and business loans turn down from their peaks after the reference cycle peak has done so. Demand deposits usually recover from a contraction trough before the reference cycle does. Bank holdings of United States securities follow a well defined course if the series is considered as inverted, but still this series lags behind the reference cycle. None of the WRMB series considered can give us that clue more sought after than the Holy Grail—an accurate and dependable guide to the end of the boom.¹

The behavior of the WRMBS in the separate phases of the reference cycle is somewhat varia-

ble, again except for these three series, total loans, business loans, and demand deposits, each of which exhibits a fairly stable pattern of behavior in only one phase of the cycle. The expansion and contraction phases of the WRMB series differ sufficiently in duration from those of the reference cycle so that, as in the 1920's, more than an entire reference cycle may be contained within the cycle of one of the WRMB series. (Chart 4)

It is perhaps not the most appropriate comparison to put the WRMBS against a series which actually represents a consensus of general activity and which is not available on a current basis, containing as it does many series which are available only after a wait of several months. It might prove more enlightening to compare the WRMBS with series of general scope which are available on a more current basis.

The WRMBS and Specific Indicators

In an effort to isolate certain specific series which might call the turns of fluctuations in general business activity, Geoffrey Moore of the National Bureau of Economic Research has selected 21 series of which 8 showed a tendency to lead general activity, 8 coincided with reference cycle turning points, and 5 lagged.¹

It would be too ambitious an undertaking for this study to attempt to match the selected WRMBS against all 21 of Moore's indicators, so it is proposed to compare two of the WRMBS, total loans and business loans, against three of these indicators: the Federal Reserve index of industrial production, the Bureau of Labor Statistics index of wholesale prices excepting food and farm products, and the Dow Jones index of industrial stock prices. These two loan series have been chosen because, of all the WRMBS, they show the strongest link with business activity. The method of comparison will be the same as that used in examining the timing of the turning points of the selected WRMBS relative to the reference cycle. In this instance, however, the turning points of the total loans and business loans series will be used as the point of reference for the turning points of the selected

¹ This is consistent with the results in a study by Geoffrey Moore, *Statistical Indicators of Cyclical Revivals and Recessions*, Occasional Paper No. 31, National Bureau of Economic Research (New York, 1950) in which most of these series were tested and found not acceptable as indicators.

¹ *Ibid.*

FEDERAL RESERVE BANK OF SAN FRANCISCO

indicators. Table 6 presents a comparison of the timing of the turning points of the three indicators in seven cycles, the two postwar cycles, and six cycles, omitting the Great Depression.

TABLE 6

COMPARISON OF TURNING POINTS OF SELECTED ECONOMIC INDICATORS WITH TOTAL LOANS SERIES

	Federal Reserve Index of Industrial Production		Bureau of Labor Statistics Index of Wholesale Prices		Dow Jones Index of Industrial Stock Prices	
	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average
7 Cycles 1919-38, 1945-54						
Total Loans Peak	-4.2 (1.8)		-14.0 (10.4)		- 6.4 (3.7)	
Total Loans Trough	-7.6 (11.8)		- 8.5 (11.5)		-14.8 (7.7)	
2 Cycles 1945- 54						
Total Loans Peak	-3.0 (2.0)		-17.0 (14.0)		- 8.0 (2.0)	
Total Loans Trough	+3.3 (4.4)		- 5.5 (10.5)		- 6.0 (5.0)	
6 Cycles 1919-33, 1945-54						
Total Loans Peak	-4.2 (2.2)		-16.2 (10.8)		- 7.5 (3.5)	
Total Loans Trough	-1.0 (6.0)		- 6.0 (9.0)		- 9.5 (4.2)	

In only one case is there a tendency for a series to lag behind the total loans of reporting banks. This is for the index of industrial production, which for the two postwar cycles shows an average lag of some three months at the trough. This lag is washed out when averaged in with either six or seven cycles. All of the series turn down from their peaks before total loans makes its turn. The indexes of industrial production and industrial stock prices lead quite consistently at the peak with a relatively narrow range of deviation. Wholesale prices lead by the greatest average figure, but the mean deviation around the upper turns of this series in 6 cycles ranges from 5 months to 27 months, centering about an average lead of 16 months. The index of industrial stock prices shows a consistent tendency to lead total loans of reporting banks at both the peak and the trough, while the other two series generally lead at the trough also; but, as seen by their average deviation, they have on occasion lagged at the trough. It might be noted that rather than using the WRMBS as an indi-

cator of the future movements of these selected business series, these series might be used to predict downturns in total loans. Note that wholesale prices, industrial stock prices, and industrial production turned down an average 16 months, 8 months, and 4 months, respectively, in advance of the downturn in total loans.

It is to be expected that WRMB business loans will show much the same pattern of timing at the turning points relative to the indicators to which they are being compared as did total loans. Table 7 shows the turning points of these series in the three groupings of cycles using business loans of reporting banks as a point of reference.

The same general pattern of turns at the peaks and troughs is present, even to the single instance of an average lag of industrial production at the trough in the two postwar cycles. It is to be noted that business loans show a somewhat closer correspondence than did total loans. Looking at the indicators just tested, it might be concluded that if the wholesale price index has turned down, prices of industrial shares have been falling, and industrial production is faltering, that total loans or, more particularly, business loans may well be expected to turn down.

TABLE 7

COMPARISON OF TURNING POINTS OF SELECTED ECONOMIC INDICATORS WITH BUSINESS LOANS SERIES

	Federal Reserve Index of Industrial Production		Bureau of Labor Statistics Index of Wholesale Prices		Dow Jones Index of Industrial Stock Prices	
	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average
7 Cycles 1919-38, 1945- 54						
Business Loans Peak	-4.4 (1.9)		-14.0 (10.0)		- 7.4 (2.7)	
Business Loans Trough	-7.3 (11.0)		- 7.7 (12.0)		-14.3 (7.9)	
2 Cycles 1945-54						
Business Loans Peak	-3.0 (2.0)		-16.5 (13.5)		- 7.5 (1.5)	
Business Loans Trough	+2.7 (4.2)		- 5.0 (11.0)		- 6.5 (4.5)	
6 Cycles 1919-33, 1945-54						
Business Loans Peak	-4.2 (2.2)		-16.0 (10.5)		- 7.2 (3.2)	
Business Loans Trough	-1.2 (5.5)		- 5.5 (9.0)		- 9.5 (3.8)	

Securities loans and stock prices

The nature of these two series suggests that there may be a close correspondence in the course of their cyclical movements. Table 8 compares the turning points of the index of industrial stock prices with the turns of loans for carrying securities in the seven-cycle, two-cycle, and six-cycle comparisons made earlier.

TABLE 8

TURNING POINTS OF INDUSTRIAL STOCK PRICES COMPARED WITH LOANS FOR CARRYING SECURITIES

	Industrial Stock Prices					
	7 Cycles 1919-38, 1945-54		2 Cycles 1945-54		6 Cycles 1919-33, 1945-54	
	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average
Loans for Carrying Securities Peak	- 5.2 (5.8)		- 4.0 (11.0)		- 5.0 (7.0)	
Loans for Carrying Securities Trough	-20.8 (13.4)		-15.0 (14.0)		-12.3 (11.1)	

Industrial stock prices turn up from a trough on the average of about a year before securities loans hit bottom. But the mean deviation describes a range from a one-month lead to a lead of almost two years about this average. With a variation of about two years, even the knowledge that the turning points of the two series follow this prescribed sequence is not sufficient ground to accept this series as an indicator. Looking back to Tables 6 and 7 it is seen that there is a closer correspondence between both total loans and business loans and industrial stock prices than there is here. The reason, perhaps, for this considerable disparity in the timing of the turns of the two series is that loans for carrying securities accounts for loans to buy bonds as well as stocks, and the motivations for buying bonds are quite different from those for buying stocks and will not necessarily respond only to factors affecting trading in stocks.

Business loans and inventory stocks

Inventories play a very vital role in the production process. To maintain continuous operations, the manufacturer will try to accumulate

stocks of raw materials to offset irregularities in delivery of these items, and he will also hold a certain stock of finished goods to ensure that he may meet the requests of retailers, wholesalers, or other manufacturers for his product. Wholesalers, in their turn, will build stocks of goods in order to be able to meet the demands of retailers with a minimum of delay. Retailers will want to stock quantities of a variety of goods to accommodate their customers. Inventories held at the various stages of production and distribution allow sufficient flexibility to smooth out the day-to-day fluctuations in operations that would otherwise disrupt and hinder the flow of goods from producers to consumers.

The stocks of inventories held by the business community represent a substantial investment—some \$90 billion in December 1957. The net changes in the level of inventories held is among the most volatile elements contributing to changes in business investment and, consequently, may be looked upon as a key factor in fluctuations of business activity. Loans to carry inventories would seem to exemplify the “correct” loan to be made by banks, discussed in the introduction. An examination of the relationship of business loans to inventories would seem to be a proper subject for this study. Unfortunately, comparable data are not available for the entire period 1919 to 1954, and the investigation must proceed on a piecemeal basis. The Department of Commerce series dates back only to 1939 and can only be compared to loans in the postwar cycles. The National Industrial Conference Board supplies an index of the value of manufacturers’ inventories for the period 1929 to 1940, which excludes industries tied to agriculture or the extractive industries. This series is not comparable with the later Commerce series. To provide some common ground for analysis, inventories of durable goods are used here for both series. Table 9 gives the timing of the turning points of these series relative to business loans.

The first set of turning points, which covered the period of the Great Depression, appears to be at odds with the postwar series in which the inventory series showed a lag at all four turning points. Chart 5 shows how closely the inventories

TABLE 9

TURNING POINTS OF DURABLE GOODS INVENTORIES COMPARED WITH BUSINESS LOANS

	Average Months Lead (-) or Lag (+)	Mean Deviation Around Average
Durable Goods Inventories		
1 1/2 Cycles 1929-39		
Business Loans Peaks	0	(0)
Business Loans Troughs	-9	(20)
2 Cycles 1945-54		
Business Loans Peaks	+4.5	(1.5)
Business Loans Troughs	+1	(0)

series, together with "Purchased Materials," "Goods in Process," and "Finished Goods" correspond with business loans. The Commerce series on inventories shows a relationship to business loans which offers promise. Admittedly, the data for only two cycles are not enough to establish a significant cyclical relationship between the two series. There is, however, other evidence that would lend support to this conclusion. In his examination of manufacturers' inventories at business cycle turns in the period 1919-38, Abramovitz found a tendency for inventories to lag behind general activity by a period of three to six months.¹ In his study as in ours the National Bureau reference cycle dates are used as a measure of business activity. Since business loans similarly lag behind reference peaks by an average of 4.8 months, this would imply that inventories may turn down either with business loans or, as post-World War II experience indicates (see Chart 5), slightly after business loans have turned down.

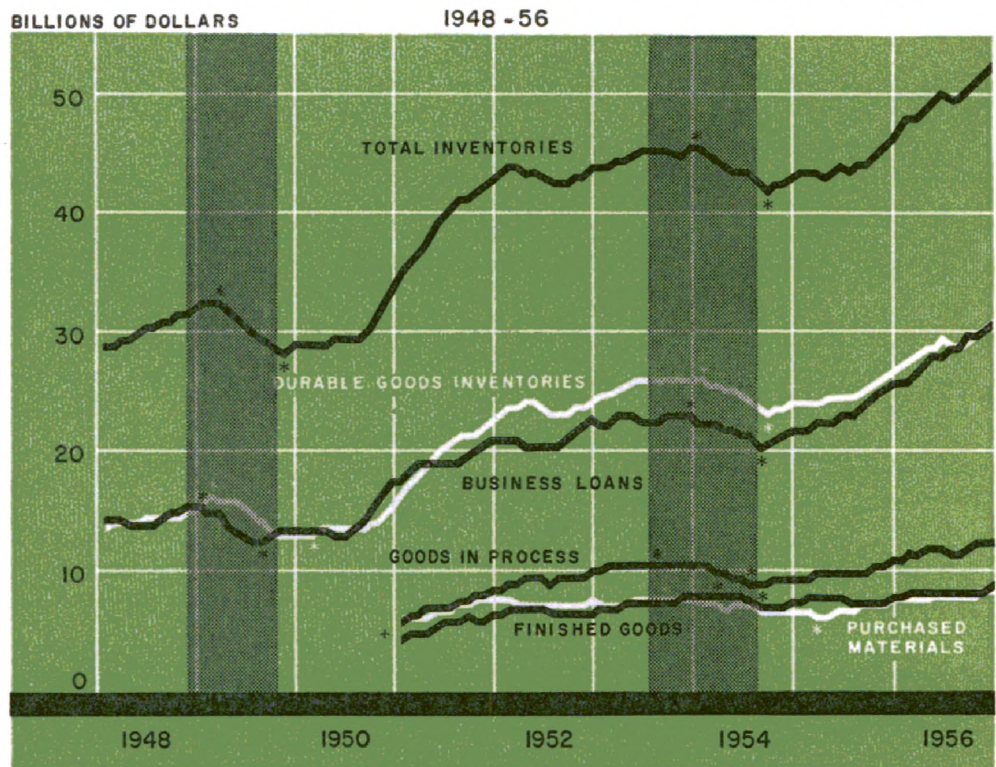
¹ Moses Abramovitz, *Inventories and business Cycles* (New York: National Bureau of Economic Research, 1950), pp. 80-87. See also Doris M. Eisemann, *Bank Credit & Inventory Cycles* (Santa Monica, California: The Rand Corporation, 1957), 12 pp.

Conclusion

Summing up, movements in the WRMBS are a poor tool to use alone as a basis for calling the turn in business activity. This is not said to discredit the series, but rather to call attention to the fact that these series are not published with this end in mind. It was established in the first part of this study that the WRMBS is an acceptable indicator of changes in the disposition of the resources of the banking system. It would impose an unfair burden upon the series to ask of it a task it is not equipped to perform. That the services of the banking system are indispensable to the general scheme of production cannot be denied, but it is necessary to point out that all of the sectors of the economy do not develop at the same pace nor do they necessarily prosper at the same time. The banking series here examined tend to follow rather than lead the changes in the majority of business series.

It is, nevertheless, a useful endeavor to highlight the behavior of the banking system in the business cycle. One point of particular interest

CHART 5
BUSINESS LOANS AND SELECTED INVENTORY SERIES



Sources: Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*; Department of Commerce, *Survey of Current Business*.

is the consistent tendency of loans outstanding to turn down some time after business activity in general has turned down. There is not a direct one-to-one correspondence between production activity and the demand for credit. Businessmen generally demand credit upon their expectations of the future, based in large measure on present activity. If production is expanding and there is a strong demand for goods, loans outstanding will also expand. The fact that loans outstanding continue to climb while production has started to decline might be attributed to either of two causes: an increase in new loans or a decrease in repayments. It is most likely due to the latter, for it has been found that there is a sharp rise in the liabilities of business failures late in the boom. And as sales fall off, collections become slower, and requests for extensions on notes become more numerous. In general, the expected receipts which served as the basis for making the loans and out of which the loans were to be retired, have failed to materialize. The turning of loans outstanding at the trough relative to the reference cycle is not consistent enough to permit analysis of its behavior.

The movements of bank holdings of United States securities are conditioned in large part by movements in general business activity and the resultant effects on loans outstanding. The movements of this series are symptomatic of business contraction and expansion rather than causal.

The relationship of the selected economic indicators compared to business loans as examined in Tables 6 and 7 supports the earlier evi-

dence of a consistent tendency of loans outstanding at reporting banks to lag at the peak of the cycle and a less consistent tendency to lag at the trough of the cycle.

It is also noted that the WRMBS is not sufficiently selective to pinpoint changes in specific sectors outside the sphere of banking activity. It is possible, however, that the business loan series, in view of its correspondence to business inventories, may prove to be of value in detecting fluctuations in inventory stocks. This relationship deserves further investigation.

Does this seeming inability of the WRMBS to foresee the turns in the tide of economic activity rule out its usefulness in assessing the business situation? Not at all. Insofar as it is able to indicate turns in the activity of the banking sector, it is an adequate tool of analysis. The modern industrial economy is such a complex organism that there is no one single indicator that can describe it accurately. The health and vigor of the economy depends upon the functioning of its component parts. No single indicator can give a sufficiently accurate picture of the over-all condition of the economy without neglecting oftentimes important developments in certain areas of activity. Any true estimate of the situation must draw upon several sources of information, one of which is the banking statistics, to complete the picture.

The techniques used in foretelling future events in the affairs of men have come a far piece since the Etruscan oracles predicted the future by examining the entrails of the sacred geese, but even now as then there is no single easy answer to complex and compelling questions.



Review of Business Conditions

BUSINESS activity nationally and in this District during the opening months of 1958 continued to recede from the advanced level reached in the late summer of 1957. January output of the nation's mines, mills, and factories declined over 2 percent from December and was 9 percent below a year ago. A further drop of 2 percent occurred in February. As in other recent months, the output declines in early 1958 were mostly among hard goods producers—manufacturers of both producers' equipment and consumer durables. Employment of wage and salary workers in durable goods industries fell over 11 percent in the twelve months ending in February, compared with a drop of about 3 percent in nondurables. Ingot steel output continued to fall in January and February; in fact, during February it was below its low point in the previous business downturn in mid-1954. Production of other primary and fabricated metals and most types of machinery also fell in January and February. The number of automobiles assembled in the first two months of the year was approximately 27 percent under the year-ago level, while sales of automobiles lagged even more. Although sales of nondurable goods manufacturers were unchanged between December and January after seasonal adjustment, sales of durable goods manufacturers recorded another sharp decline. Retail sales fell moderately in January, and the preliminary estimate for February indicates another drop, mostly in durable goods. Inventory holdings by manufacturers were reduced further in January after seasonal adjustment, although stocks at retail outlets showed no net change from December. However, automobile dealers experienced steady increases in their inventories early in 1958, which reached a total of almost 900,000 cars at the end of February. Construction outlays during January and February declined somewhat more than the seasonal amount.

Total employment across the nation fell sharply between December and January. Although the decline in February was more moderate, the number of persons holding jobs in mid-February was below the level of a year ago by about 1,200,000. In addition, the number of full-time non-farm job holders working less than their accustomed work schedules in February was over

2 million—more than twice the average of the past few years. Unemployment increased to 6.7 percent of the civilian work force in February after adjustment for seasonal factors; this was the highest rate of unemployment since the late months of 1949. The wholesale and consumer price indexes continued to show increases in January despite the slide in business activity; rising prices of farm products and food have more than offset scattered declines in the prices of raw materials and manufactured goods. The rather severe winter weather in many Eastern and Southern areas during February, which ruined crops and generally disrupted business activity, should also be reflected in higher food prices in the February indexes.

The experience of several other sectors of the national economy was more encouraging. New defense contracts awarded, after being a depressive force for several months, increased in November and December, and they are expected to expand rapidly during the first half of 1958. It must be recognized, however, that there will be an appreciable time lag before many of these commitments are translated into actual money expenditures. New machine tool orders picked up in January after an extremely poor December, and some tool makers reported an even better inflow of orders in February. New private housing starts in January, at a seasonally adjusted annual rate of 1,030,000 dwelling units, exceeded all months of 1957 except August in annual terms. In February, new housing starts slumped to an annual rate of 890,000 units primarily because of the winter storms.

Excess reserves have exceeded member bank borrowings at Federal Reserve Banks since the first of the year, and the reduction in member bank reserve requirements by 0.5 percent in late February freed reserves amounting to about \$500 million. Short-term interest rates have declined further in response to a lessened demand for credit and moderate easing in the supply of bank reserves by the Federal Reserve System. The gradual fall, which longer term rates had experienced since October and November, changed to fluctuation within a narrow range between late January and early March. This was largely a reflection of renewed Treasury borrowing at

extended maturities and increased corporate and municipal security offerings.

District business decline moderated in early 1958

In the Twelfth District, there are indications that the decline in over-all business activity during early 1958 was moderate when compared with the experience of the previous six months. The decline so far this year also appears to have been less than that which occurred nationally. Before these recent developments are discussed, however, it may be beneficial to review briefly several ways in which the Twelfth District economy differs from the national economy.¹ Because of the difference in industrial composition between the Twelfth District and the nation as a whole, forces affecting the level of business activity nationally are not transferred to the economy of this region with an exactly corresponding impact. Depending on the industries involved, changes in business activity nationally may induce greater or lesser changes in the level of District activity. These structural differences between the Twelfth District and the entire nation may be illustrated by an examination of the sources of personal income.

Income payments from government and farm sources in 1956, the most recent year for which comparable data are available, were a larger proportion of total income payments in this District than they were nationally—24 percent versus 21 percent, respectively. Within the private nonfarm sector in 1956, commodity producing industries—manufacturing, mining, and construction—comprised a smaller part of total income payments in the Twelfth District (36 percent) than they did nationally (42 percent). Manufacturing alone contributed 26 percent of private nonfarm income in this District in contrast with 33 percent nationally. Commodity producing industries, and manufacturing in particular, are ordinarily more subject to cyclical swings in economic activity than are distributive and service industries.

These figures indicate that there may be some “built-in” resistance to sharp fluctuations in private business activity in the Twelfth District

compared with the nation as a whole. On the other hand, this District is highly vulnerable to changes in Government spending policies, particularly with respect to its important aircraft and related industries. Major aircraft fabricators and firms subcontracting the production of components and equipment expanded rapidly from late 1956 to mid-1957 in response to orders for new weapons systems. However, revised Government procurement policies in mid-1957 resulted in the cancellation of a substantial volume of orders and the stretching out of delivery schedules in many continued contracts. The sharp decline in District aircraft activity which followed more than offset the gains which had occurred since late in 1956.

The leveling off and succeeding downturn in business spending for plant and equipment and a continuation of the general weakness in consumer spending for durable goods have affected other parts of the nation somewhat more than they have this District in the past six to eight months. Downward adjustments in defense spending have had a greater impact, though, on the Twelfth District than on the nation. Indeed, during the late summer and early fall of last year, manufacturing activity in this District was falling off more rapidly than in the nation because of the initial sharp cuts in defense spending. More recent developments have not been quite so unfavorable; cutbacks continue in a number of industries in the Twelfth District, but the over-all impact appears to have moderated.

District nonfarm employment shows only seasonal decline in January

Total nonfarm employment in the Twelfth District declined only the usual seasonal amount between December and January. More than seasonal cutbacks occurred in manufacturing and mining employment, but these were offset by losses smaller than usual for the season in contract construction and wholesale and retail trade employment. The drop in manufacturing employment between December and January was the smallest since mid-1957, affecting for the most part firms in primary and fabricated metals, machinery, and transportation equipment. Almost half of the decline in transportation equip-

¹ See also this *Review*, December 1957, pp. 154-159.

ment occurred in automobile assembly plants. Aircraft industry payrolls on the Pacific Coast were pared by little more than 2,000 workers, compared with average monthly declines of about 9,000 workers between July and December. This does not signal an end to cutbacks among aircraft firms, however. While some rehiring has already begun at Seattle's aircraft plants, Southern California aircraft firms indicate that further layoffs should occur over the next few months. Present indications from labor market reports, though, are that the average reductions over the next two to four months will be less than half those in late 1957.

Pacific Coast unemployment rate declines

Total employment and unemployment in the three Pacific Coast states changed according to their usual seasonal patterns between December and January. After seasonal adjustment, unemployment was down slightly, which lowered the rate of unemployment to about 5.3 percent of the labor force. Although the method by which employment and unemployment are estimated is less precise than the method used for national estimates, it appears probable that there was no counterpart on the Pacific Coast to the much sharper than seasonal rise in unemployment nationally in January. The rate of unemployment in Pacific Coast states in December and January was, however, about as high as during the peak months of August and September 1954 in the previous business downturn.

The number of persons drawing weekly benefit payments under state and federal unemployment insurance plans in Twelfth District states during January remained at about the level of the previous two months after adjustment for seasonal factors. Joblessness covered by these unemployment insurance plans averaged almost 80 percent above the level of a year ago and was higher than in any period since early 1950.

Man-hours continue downward movement

Broad indications of current production trends in the three Pacific Coast states are provided by data on man-hours of manufacturing production workers. Further nonseasonal declines in man-hours were reported by most durable goods man-

ufacturing firms during January. The drop of 2 percent between December and January reported by firms making durables was about equal to the average monthly declines during the second half of 1957. While aircraft firms reduced their manpower usage somewhat less than in previous months, there were continued cutbacks among firms producing lumber, metals, autos, and machinery. Nondurable goods industries showed a small net increase in man-hours between December and January after seasonal adjustment.

Production of steel declines; lumber improves slightly

Steel producers in the Western Region (including Colorado) reduced output almost 10 percent between December and January. Western utilization, which was 65.6 percent of the enlarged January 1, 1958 capacity, was 9 points above national utilization. Since late January, further sizable cuts have been made in output at Twelfth District steel mills, and the rate of output may have fallen closer to the average rate of mills in the rest of the nation.

The lumber industry in January and February showed little change from early 1957. The extent to which recovery may come for the industry cannot be determined until spring weather allows a real test of the market for residential housing across the nation. Redwood production and orders in January were up 3 and 15 percent, respectively, from a year ago. Western pine production and orders for the first seven weeks of this year were running slightly above the year-ago levels also. Douglas fir production, and to a small extent orders, were down for the same period.

Douglas fir plywood production through mid-February remained at a record level, but the inflow of new orders in this period was substantially below production. Consequently, order backlogs declined somewhat from early January. Between mid-January and late February four successive price cuts were made by a number of manufacturers, dropping the price of the index grade from \$72 to \$64 per thousand square feet. The latest price cut is reported to have induced a number of mills to cut production schedules

sharply or to shut down completely. Almost immediately, however, new orders picked up briskly, and some mills have begun to quote higher prices.

Building activity mixed

Construction activity in the Twelfth District during January, as in late 1957, reflected moderate improvement in residential housing and declines in other types of construction. Both building permit awards and construction contract awards for residential housing showed seasonal gains from December and slight gains from January a year ago. The number of dwelling units covered by Government-insured mortgages increased between December and January, responding to seasonal influences but also indicating renewed interest among lenders in these programs. Applications for VA appraisals rose over 75 percent from December's very low level, although they were still 36 percent below January last year. Requests for FHA commitments, however, were not only up 14 percent from December but were also 31 percent higher than a year ago. Permits and contract awards for non-residential construction experienced some seasonal rise from December but failed by a small amount to match the year-ago level. Contract awards in the public works and utilities sector, which held up well during most of 1957, were

down 15 percent from December and 45 percent from a year ago.

District department store sales decline, but less than nationally

Weekly department store sales in the Twelfth District were down about 6 percent from a year ago in the four-week period ending February 22. Reversing the pattern of recent months, department store sales in the nation for the same period declined more than in this District. The national drop of 9 percent was in large part a reflection of poor weather in many Middle Western and Eastern areas in mid-February. Both this District and the nation as a whole show a 4 percent decline this year compared with January and February in 1957.

Total retail sales in the Twelfth District during January may not have fallen as much as those at department stores, since retail trade employment declined less than the usual seasonal amount from December. Automobile sales, both in this District and across the nation, appear to have been quite disappointing, however. In California alone, sales were almost 19 percent below January 1957, while the drop nationally was about 22 percent. State sales figures for February are not yet available, but automobile sales nationally dropped an estimated 32 percent from a year ago.

Reprints of the series of three articles on the aluminum industry recently published in this *Review* are now available for distribution. Requests for copies should be directed to the Federal Reserve Bank of San Francisco, 400 Sansome Street, San Francisco 20, California.

FEDERAL RESERVE BANK OF SAN FRANCISCO

BUSINESS INDEXES—TWELFTH DISTRICT¹
(1947-49 average = 100)

Year and month	Industrial production (physical volume) ²							Total nonagricultural employment	Total mfg employment	Car-loadings (number) ³	Dep't store sales (value) ⁴	Retail food prices ^{5, 6}	Waterborne foreign trade ^{7, 8}	
	Lumber	Petroleum ⁹		Cement	Lead ⁴	Copper ⁹	Electric power						Exports	Imports
		Crude	Refined											
1929	95	87	78	54	165	105	29	....	....	102	30	64	190	124
1933	40	52	50	27	72	17	26	....	....	52	18	42	110	72
1939	71	67	63	56	93	80	40	....	55	77	31	47	163	95
1949	100	99	103	100	101	93	108	99	97	94	98	100	85	121
1950	113	98	103	112	109	113	119	103	105	98	107	100	91	137
1951	113	106	112	128	89	115	136	112	120	100	112	113	186	157
1952	116	107	116	124	87	113	144	118	130	100	120	115	171	200
1953	118	109	122	130	77	111	161	121	137	100	122	113	140	308
1954	116	106	119	132	71	101	172	120	134	96	122	113	131	260
1955	124	106	122	145	75	118	192	127	143	104	132	112	164	308
1956	116	105	129	156	79	129	210	134	152	104	141	114	195	443
1957	106	101	132	149	77	126	224	138	157	96	141	118	....	....
1957														
January	...	102	131	120	78r	125	220	138	157r	105	137	116	237	421
February	...	102	130	127	87r	137	211	138	158r	96	141	117	269	417
March	...	101	132	140	88	133	221	138	158r	100	146	116	267	489
April	...	101	132	154	82r	135	228	138	158r	103	137	117	298	534
May	...	101	138	157	83r	126	229	138	158r	99	141	117	283	698
June	...	101	131	152	78r	130	239	139	159r	100	148	118	252	511
July	...	101	133	162	69r	113	238	138	159	94	141	118	188	770
August	...	101	137	160	75r	115r	233	138	158r	97	144	119	210	572
September	...	102	135	169	75r	127	217	138	156r	93	141	119	173	607
October	...	101	132	161	76r	126	223	138	155r	84	134	119	199	684
November	...	101	131	146	63	125	221	137	152	95	139	118	210	582
December	...	101	124	139	62	125r	211	137	151r	93	139	119	....	....
1958														
January	...	100	122	135	63	...	...	137	150	94	132	121	....	....

BANKING AND CREDIT STATISTICS—TWELFTH DISTRICT
(amounts in millions of dollars)

Year and month	Condition items of all member banks ¹					Bank rates on short-term business loans ²	Member bank reserves and related items					Bank debits index 31 cities ^{12, 13} (1947-49=100) ¹⁴
	Loans and discounts	U.S. Gov't securities	Demand deposits adjusted ⁷	Total time deposits	Reserve bank credit ⁸		Factors affecting reserves:				Reserves ¹¹	
							Commercial ¹⁰	Treasury ¹⁰	Money in circulation ⁹			
1929	2,239	495	1,234	1,790	....	- 34	0	+ 23	- 6	175	42
1933	1,486	720	951	1,609	....	- 2	- 110	+ 150	- 18	185	18
1939	1,967	1,450	1,983	2,267	....	+ 2	- 192	+ 245	+ 31	584	30
1950	7,093	6,415	9,254	6,302	3.35	+ 39	-1,141	+1,198	- 14	2,026	115	
1951	7,866	6,463	9,937	6,777	3.66	- 21	-1,582	+1,983	+ 189	2,269	132	
1952	8,839	6,619	10,520	7,502	3.95	+ 7	-1,912	+2,265	+ 132	2,514	140	
1953	9,220	6,639	10,515	7,997	4.14	- 14	-3,073	+3,158	+ 39	2,551	150	
1954	9,418	7,942	11,196	8,699	4.09	+ 2	-2,448	+2,328	- 30	2,505	154	
1955	11,124	7,239	11,864	9,120	4.10	+ 38	-2,685	+2,757	+ 100	2,530	172	
1956	12,613	6,452	12,169	9,424	4.50	- 52	-3,259	+3,274	- 96	2,654	189	
1957	13,178	6,619	11,870	10,679	4.97	+ 31	-4,164	+3,903	- 83	2,686	203	
1957												
February	12,556	6,356	11,279	9,690	....	+ 41	- 816	+ 494	- 139	2,517	200
March	12,576	6,177	11,129	9,794	4.74	- 37	- 170	+ 170	- 9	2,495	200	
April	12,649	6,520	11,622	9,839	....	- 35	- 445	+ 430	- 31	2,560	202
May	12,694	6,315	11,210	9,995	....	+ 56	- 261	+ 209	+ 54	2,526	200
June	12,911	6,249	11,310	10,155	4.81	- 29	- 374	+ 402	+ 20	2,483	203	
July	12,912	6,319	11,407	10,188	....	- 49	- 426	+ 320	+ 6	2,457	205
August	12,945	6,313	11,329	10,220	....	+ 50	- 145	+ 292	+ 39	2,592	197
September	13,178	6,293	11,561	10,301	5.21	- 109	- 434	+ 480	- 30	2,581	204	
October	13,064	6,433	11,570	10,417	....	+ 76	- 322	+ 159	- 8	2,517	200
November	13,185	6,357	11,770	10,304	....	+ 14	- 298	+ 447	+ 37	2,652	202
December	13,178	6,619	11,870	10,679	5.13	- 18	- 454	+ 480	- 23	2,686	217	
1958												
January	13,106	6,573	11,601	10,761	....	- 16	- 258	+ 180	- 137	2,662	211
February	13,002	6,884	11,305	10,992	....	+ 12	- 427	+ 298	+ 17	2,520	203

¹ Adjusted for seasonal variation, except where indicated. Except for department store statistics, all indexes are based upon data from outside sources, as follows: lumber, California Redwood Association and U.S. Bureau of the Census; petroleum, cement, copper, and lead, U.S. Bureau of Mines; electric power, Federal Power Commission; nonagricultural and manufacturing employment, U.S. Bureau of Labor Statistics and cooperating state agencies; retail food prices, U.S. Bureau of Labor Statistics; carloadings, various railroads and railroad associations; and foreign trade, U.S. Bureau of the Census.
² Daily average. ³ Not adjusted for seasonal variation. ⁴ Los Angeles, San Francisco, and Seattle indexes combined. ⁵ Commercial cargo only, in physical volume, for Los Angeles, San Francisco, San Diego, Oregon, and Washington customs districts; starting with July 1950, "special category" exports are excluded because of security reasons. ⁶ Annual figures are as of end of year, monthly figures as of last Wednesday in month. ⁷ Demand deposits, excluding interbank and U.S. Gov't deposits, less cash items in process of collection. Monthly data partly estimated. ⁸ Average rates on loans made in five major cities. ⁹ Changes from end of previous month or year. ¹⁰ Minus sign indicates flow of funds out of the District in the case of commercial operations, and excess of receipts over disbursements in the case of Treasury operations. ¹¹ End of year and end of month figures. ¹² Debits to total deposits except interbank prior to 1942. Debits to demand deposits except U.S. Government and interbank deposits from 1942. ¹³ Preliminary. ¹⁴ Revised.