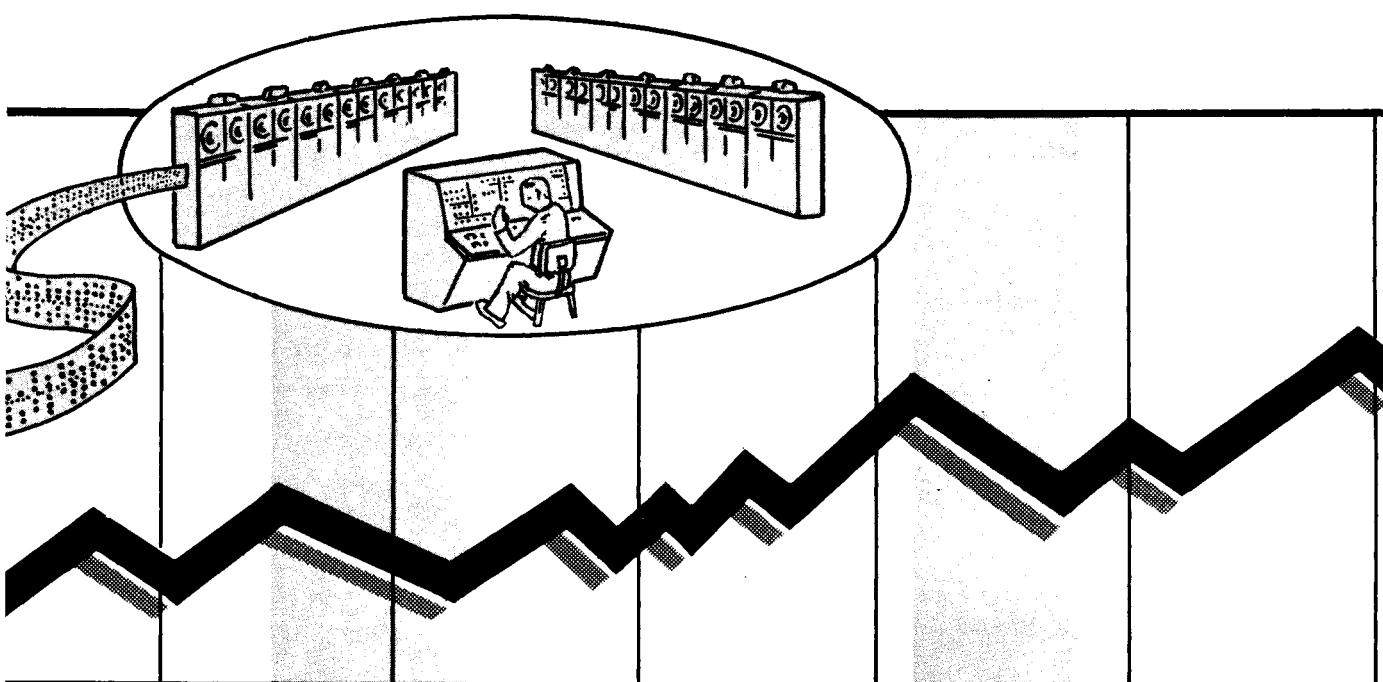


SEPTEMBER 1963

# Business Cycle Developments



U.S. DEPARTMENT OF COMMERCE



BUREAU OF THE CENSUS

# Business Cycle Developments

SEPTEMBER 1963

DATA THROUGH AUGUST

Series ESI No. 63-9

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The cooperation of the various government and private agencies which provide data for the report is gratefully acknowledged. Credit is given to these agencies in the list of series and sources on the back cover of this report.

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# Preface

This report has been prepared to bring together many of the available economic indicators in convenient form for analysis and interpretation by specialists in business cycle analysis. The presentation and classification of series in this report follows the business indicators approach. The classification of series and the business cycle turning dates are those designated by the National Bureau of Economic Research (NBER) which, in recent years, has been the leader in this field of investigation. However, this publication is not to be taken as implying acceptance or endorsement by the Bureau of the Census or any other government agency of any particular approach to business cycle analysis. It is intended only to supplement other reports of the Department of Commerce that provide data for analyzing current business conditions.

The unique features are the arrangement of data according to their usual timing relations during the course of the business cycle and the inclusion of special analytical measures and historical cyclical comparisons that help in evaluating the current stage of the business cycle.

About 70 principal indicators and over 300 components are used for the different measures shown. The movements of the series are shown against the background of the expansions and contractions of the general business cycle so that "leads" and "lags" can be readily detected and unusual cyclical developments spotted. The exact number of series included for the total and important classes of series may vary from month to month because of additions of new series and revisions in the composition of indexes. Almost all of the basic data are available in published reports. A complete list of the series and the sources of data is shown on the back cover of this report. All the data shown are seasonally adjusted where seasonal variations appear to exist.

The chief merits of this report are the speed with which the data for indicators are collected, assembled, and published and the arrangement of the series for business cycle studies. Electronic computers are used for many of the computations, thus making early publication possible. Publication is scheduled for around the 20th of the month following the month of data.

# New Features and Changes for This Issue

A limited number of changes are made from time to time to reflect the change from one stage of the business cycle to another, to show new findings of business cycle research and newly available economic series, or to emphasize the activity of a particular series or series group. Such changes may involve additions or deletions of series used, changes in placement in relation to other series, changes in components of indexes, etc. These changes will be listed in this section each month. The changes made in this issue are as follows:

1. Retail sales data (series 54) have been revised back to 1953 by means of new seasonal adjustment and trading day factors developed by the Bureau of the Census. The new seasonal factors are based upon Census Bureau ratio-to-moving-average method of seasonal adjustment (Method II, X-9 variant). The new trading day factors were computed from internal evidence provided by the irregular component of the seasonally adjusted series.
2. Series 1, 2, 3, and 41 have been revised back to January 1948 throughout the report. These changes reflect the adoption, by the Bureau of Labor Statistics, of a new benchmark date (March 1962) for estimating current establishment statistics.
3. The diffusion indexes in chart 2 and table 4 and the directions of change in table 6 have been revised for series D-1, D-41, and D-54 to reflect the revisions in components of the aggregate series (see items 1 and 2, above).
4. MCD moving averages are shown (chart 1) for series 7, New Private Nonfarm Dwelling Units Started, for the period April 1959 to present and for series 9, Construction Contracts Awarded for Commercial and Industrial Buildings, for the period 1948 to present. In addition, monthly seasonally adjusted data are shown for series 7 from 1948 to present and for series 9 from January 1958 to present.
5. To aid users of Business Cycle Developments, appendix H has been added to this issue. It consists of a paper which explains what is known about business cycle indicators, the problems of using them, and the research needed to improve their usefulness. This paper, "Business Cycle Indicators: The Known and The Unknown," by Julius Shiskin, was presented at a meeting of the International Statistical Institute on August 24, 1963.

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The October issue of Business Cycle Developments is scheduled for release on October 22, 1963.

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# Descriptions and Procedures

## Business Cycle Series

Intensive research over many years has provided a record of the typical sequence of changes in economic processes during a business cycle; more specifically, a list of significant series that usually lead, those that usually move with, and those that usually lag behind cyclical movements in aggregate economic activity. The series have been grouped, in accordance with the NBER classification, as "leading," "roughly coincident," or "lagging" indicators. In addition, other series are included in this report for a more complete coverage of the national economy. The series are described as follows:

NBER Leading Indicators.—Around 30 series usually reach peaks or troughs before those in aggregate economic activity as measured by the roughly coincident series (see below). For this reason, they are designated as "leading" series. One group of these series pertains to activities in the labor market, another to orders and contracts, and so on.

NBER Roughly Coincident Indicators.—About 15 series are direct measures of aggregate economic activity or move roughly together with it; for example, nonagricultural employment, industrial production and retail sales. For this reason they are referred to as "roughly coincident" series.

NBER Lagging Indicators.—Some series, such as new plant and equipment expenditures and manufacturers' inventories, usually have reached turning points after they were reached in aggregate economic activity, and for this reason, they are designated as "lagging" series.

Other series.—Additional U.S. series with business cycle significance are also shown. Some of these series, such as change in money supply, merchandise trade balance, and cash surplus or deficit, represent important factors in the economy, but they have not qualified as indicators for various reasons, such as irregularity in timing. Finally, industrial production indexes for several countries which have important trade relations with the United States are presented.

## Method of Presentation

Data are shown in this report in three general categories, as follows:

Basic data (chart 1 and table 1).—Over 50 business cycle indicators and 20 additional series with business cycle significance are included. Together they provide a broad view of current and prospective business cycle fluctuations in the economy as well as the basis for making an economic interpretation of these fluctuations.

Analytical measures (charts 2-3 and tables 2-6).—These are measures which aid in forming a judgment of (1) the magnitude of current changes compared to previous changes, (2) the imminence of a turning point in the business cycle, and (3) the extent of current changes in different parts of the economy. They also aid in pointing to developments in particular industries and places.

Cyclical patterns (charts 4-5 and tables 7-9).—The current cyclical change is compared with changes at corresponding stages of earlier cycles. These comparisons are made in different ways depending upon the phase of the business cycle.

In addition to the data shown as part of the regular report, certain appendix materials are presented. These materials include historical data, key information, and adjustment factors.

## Designation of Business Cycle Turning Points

The historical business cycle turning points are those designated by the NBER. They mark the approximate date when aggregate economic activity reached its cyclical high or low levels. As a matter of general practice, a business cycle turning point will not be designated until at least 6 months after it has occurred.

## Seasonal Adjustments

Official seasonally adjusted data are used in this report wherever they are available. However, for the special purposes of business cycle studies, a number of series that are not ordinarily published in seasonally adjusted form are shown on a seasonally adjusted basis in this report. These series are as follows:

4. Number of persons on temporary layoff, all industries
5. Average weekly initial claims for unemployment insurance, State programs
9. Construction contracts awarded for commercial and industrial buildings, floor space

## Descriptions and Procedures

- 13. Number of new business incorporations
- 14. Current liabilities of business failures
- 15. Number of business failures with liabilities of \$100,000 and over
- 17. Price per unit of labor cost index
- 18. Profits (before taxes) per dollar of sales, all manufacturing corporations
- 30. Nonagricultural placements, all industries
- 55. Index of wholesale prices, all commodities other than farm products and foods
- 62. Index of labor cost per unit of output, total manufacturing
- 81. Index of consumer prices
- 82. Federal cash payments to the public
- 83. Federal cash receipts from the public
- 84. Federal cash surplus or deficit
- 90. Defense Department obligations, procurement
- 91. Defense Department obligations, total
- 92. Military prime contract awards to U.S. business firms
- 97. Backlog of capital appropriations, manufacturing
- 128. Japan, index of industrial production

Seasonal adjustments for these series were developed by either the Bureau of the Census or the NBER. The adjustment factors used are shown in the appendix table D, except for series 97 which is the sum of seasonally adjusted components, and series 9 which is based on unpublished source data. Seasonally adjusted data prepared by the collecting agency will be substituted for the series mentioned above whenever they are published.

### MCD Moving Averages

MCD (months for cyclical dominance) is an estimate of the appropriate span over which to observe the cyclical movements in a monthly series. This span is usually longer than a single month because month-to-month changes are often dominated by erratic movements, but shorter than the frequently used 12-month span (change from the same month a year ago), and is different for different series (see appendix C for MCD values and method of computation).

MCD is, on average, the first interval of months for which the average amplitude of the cyclical factor is greater than that of the irregular factor and remains so. It is small for smooth series and large for irregular series. The differences between moving averages of the period equal to MCD are commensurate with the differences between seasonally adjusted values separated by the same MCD span; thus, the month-to-month differences in a 3-month moving average are commensurate with differences in seasonally adjusted values over 3-month spans. MCD moving averages all have about the same degree of smoothness. Consequently, MCD moving averages of highly irregular series, such as business failures and Federal cash payments, will show their cyclical movements about as clearly as the seasonally adjusted data for such smooth series as industrial production and

personal income.<sup>1</sup> MCD moving averages are shown for some series in chart I. To provide an indication of the variation about these moving averages, seasonally adjusted data are also plotted for years beginning with 1960.

Because of advance reporting and preliminary seasonal factors, the MCD's for current data are usually larger than those computed from historical series and shown in appendix C.

### Analytical Measures of Current Change

Four kinds of analytical measures are presented—rates of change, diffusion indexes, timing distributions, and direction-of-change tables. These measures aid in forming a judgment of the magnitude of current changes compared to previous changes, the imminence of a turning point in the business cycle, and the extent of current changes in different parts of the economy. They also point to developments in particular industries and places.

Rates of change.—There is considerable interest in the rate of acceleration during expansions and the rate of retardation during recessions.<sup>2</sup> For this reason, rates of change for the principal monthly and quarterly business cycle series are included in table 2 of this report. Rates of change are helpful in judging and appraising trends of acceleration or retardation in a current business cycle phase, despite the fact that the erratic nature of month-to-month rates of change often makes it difficult to determine the significance of a change until some months after it has occurred. For series, such as unemployment and layoffs, which usually move down during expansions and up during recessions, the changes are inverted so that, in table 2, rises are shown as declines and declines as rises.

Diffusion indexes.—Diffusion indexes are simple summary measures of groups of economic series. They express, for a given group, the percent of the series which has risen over given intervals of time. Their turning points tend to lead the turning points of the aggregate and they measure how widespread a business change is. They vary between the limits of 100 (all components rising) and zero (all components falling). Widespread increases are often associated with rapid growth in aggregate activity, and widespread declines with sharp reductions.

The diffusion indexes in this report are grouped according to the timing classification of the NBER. For monthly series, comparisons are made over

<sup>1</sup>For a more complete description of MCD and its use in studying economic series, see Business Cycle Indicators, Geoffrey H. Moore, editor; National Bureau of Economic Research, Inc., vol. 1, ch. 18, "Statistics for Short-Term Economic Forecasting," by Julius Shiskin (Princeton University Press: 1961).

<sup>2</sup>Various terms are used to describe the phases of the business cycle. In this report both "contraction" and "recession" are used to describe the declining phase. No difference in meaning is intended.

1-month intervals (January-February, February-March, etc.) and generally for either 3- or 5-month intervals depending upon the irregularity of the series. Quarterly series are shown at 1-quarter or 4-quarter intervals. The indexes based on 1-month intervals are more "current" but they are also more irregular than the 3- or 5-month indexes (see chart 2). Quarterly series are compared over 1-quarter intervals and 4-quarter intervals.

Series numbers preceded by the letter "D" designate diffusion indexes. When one of these numbers corresponds to a basic indicator series number, it means that the diffusion index has been computed from components of the indicator series; for example, the diffusion index numbered "D6" is computed from components of series number 6. Diffusion indexes not computed from basic series components are assigned new numbers.

This report includes 29 diffusion indexes based on 16 indicator series (see tables 4 and 5). Seventeen of these indexes are computed by the Bureau of the Census utilizing nearly 300 components of 9 indicators (D1, D5, D6, D19, D23, D41, D47, D54, and D58). Indexes for 8 of these indicators show comparisons for components over 1-month and either 3- or 5-month spans while, for 1 indicator (D58), comparisons are over 1-month spans only. The 12 other diffusion indexes are based on 7 indicators closely related to the above 9 indicators. They include two indexes on capital appropriations (602 companies and 15 industries)—NBER indexes based on data from the National Industrial Conference Board; the Chicago Purchasing Agents Association index based on monthly reports of changes in profits (200 companies); and First National City Bank of New York index based on quarterly profit reports (700 companies); and 8 NBER diffusion indexes—actual and anticipated—for the following: Manufacturers' sales (800 companies) and new orders (400 companies), based on data from Dun and Bradstreet, Inc.; carloadings (19 commodity groups), based on data from the Association of American Railroads; and new plant and equipment expenditures (16 industries), based on data from the Office of Business Economics and the Securities and Exchange Commission.

Diffusion indexes that are based on anticipations show what proportion of business enterprises (or industries) are forecasting a rise in activity. Comparisons with indexes based on actual changes show whether there is a generally optimistic bias or a lag in recognition of actual developments.

Diffusion indexes constructed on the basis of current data are often highly irregular and require careful judgment in their use and interpretation.

Timing distributions.—Distributions of current "highs" appear to be helpful in appraising the evidence for a prospective business cycle turning point. Each month a timing distribution is constructed which shows the number of series reaching high values during each month of the expansion. The timing distribution is summarized by showing the number of series reaching new highs and the percent currently high for each of several recent months (see table 3). Similar distributions of "lows" will be prepared during contractions.

To provide historical perspective for interpreting the distribution of current highs, such distributions are also shown for leading and coincident series as they appear 3 months and 6 months before the peak of each of the earlier post-World War II expansions and at their peaks.

To compile timing distributions for the current cyclical phase, the data for the principal business cycle indicators are scanned each month. During a business cycle expansion, the high value for each series is recorded. (For inverted series, that is series with negative conformity to the business cycle, low values are taken during expansions and high values during contractions.) If the values for 2 or more months are equal, the latest date is taken as the high month. In selecting these values, erratic values are disregarded, although it is, of course, difficult to identify an erratic value, particularly for the current month.

The letter "H" is used in the basic data table (table 1) to identify and highlight the current high values during the expansion, and the letter "L" to identify the low values preceding the current highs. The highs designated during the current cyclical phase will not necessarily be the specific cycle peaks. Thus, as new high levels are reached during the expansion, the current highs will be moved ahead. On the other hand, lows preceding current highs are usually specific cycle troughs. Comparisons of the current timing distributions with those for periods around earlier business cycle troughs and peaks are helpful for appraising the evidence of a prospective business cycle turning point.

Interpretations of timing distributions must be made in light of the fact that a contraction following a high value reached several months ago may be the result of an erratic fluctuation and that a new high may be reached in some future month. In short, when the percent currently high falls below 50 percent for both the leading and roughly coincident series, this does not necessarily signify that a business cycle peak has occurred. It may do so, but it may also simply reflect a short reversal in the upward movement.

Direction-of-change tables.—Direction-of-change tables show directions of change ("+" for rising, "0" for unchanged, and "-" for falling) in the components used for the diffusion indexes. These tables provide a convenient view of changing business conditions and are helpful in making an economic interpretation of the movements in the more highly aggregated statistical measures. That is, they show which economic activities went up, which went down, and how long such movements have persisted. They also help to show how a recession or recovery spreads from one sector of the economy to another.

Directions of change for each index component are shown for consecutive months and, depending upon the irregularity of the series, for either 3- or 5-month spans.

## Comparisons of Cyclical Patterns

In forming a judgment about the current intensity and probable ultimate character of a cyclical fluctuation, some economists find it helpful to compare

## Descriptions and Procedures

the behavior of the indicator series and diffusion indexes in the current business cycle phase with their behavior during the corresponding phase of previous business cycles. These comparisons are made in different ways depending upon the phase of the business cycle.

Contractions are compared by computing changes over the span from the most recent business cycle peak to the current month and over equal spans from previous reference peaks. This type of comparison is designated as representing changes from reference peak levels and from reference peak dates.

Expansions may be compared by measuring changes from the immediately preceding peak levels. In this report the current expansion is related to the May 1960 reference peak. For earlier expansions, percentage changes are also computed from their respective reference peaks to dates which are the same number of months beyond the succeeding reference troughs as the current expansion is beyond its reference trough. This type of comparison is designated as representing changes computed from reference peak levels and from reference trough dates. Although the spans from reference trough dates are the same for each expansion, the spans from the preceding peak dates are different, depending on the length of the contractions. This type of comparison answers the question whether, and by how much, the current level of activity exceeds or falls short of the level at the preceding business cycle peak, a given number of months after the recovery began, and how the current situation compares in this respect with earlier recoveries.

Expansions also may be compared by computing changes from reference trough levels and from reference trough dates. This type of comparison measures the extent of the rise from the trough level so many months after the upswing began.

In addition to comparing cyclical fluctuations on the basis of reference dates (which are the same for all series), comparisons are made on the basis of specific peak and trough dates identified for each series. For example, the specific peak in retail sales corresponding to the May 1960 reference peak is April 1960; the specific peak in stock prices is July 1959.

Recent performance in several individual indicators is compared graphically with that in earlier business cycles. In making graphic comparisons, the reference peak or trough levels are set equal to 100, and the reference peak or trough dates are aligned depending on the phase of the business cycle.

In order to make historical comparisons, it is frequently necessary to use data for a closely related series for cycles prior to the initial date covered by the series used currently. Such comparisons are, therefore, to be considered only approximate. Nearly all series have undergone change in definition, coverage, or estimation procedure since 1919. The principal cases of this sort are as follows:

- 7. New private nonfarm dwelling units started (prior to 1939: Residential building contracts, floor space)
- 41. Number of employees in nonagricultural establishments (prior to 1929: Employment in manufacturing)
- 52. Personal income (prior to 1929: Quarterly data as published by Barger and Klein)
- 54. Sales of retail stores (prior to 1935: Department store sales)
- 62. Index of labor cost per unit of output, total manufacturing (prior to 1946: Production worker wage cost per unit).

## Charts

Two types of charts are used to highlight the cyclical patterns of the business cycle indicators: Historical time series and cyclical comparisons.

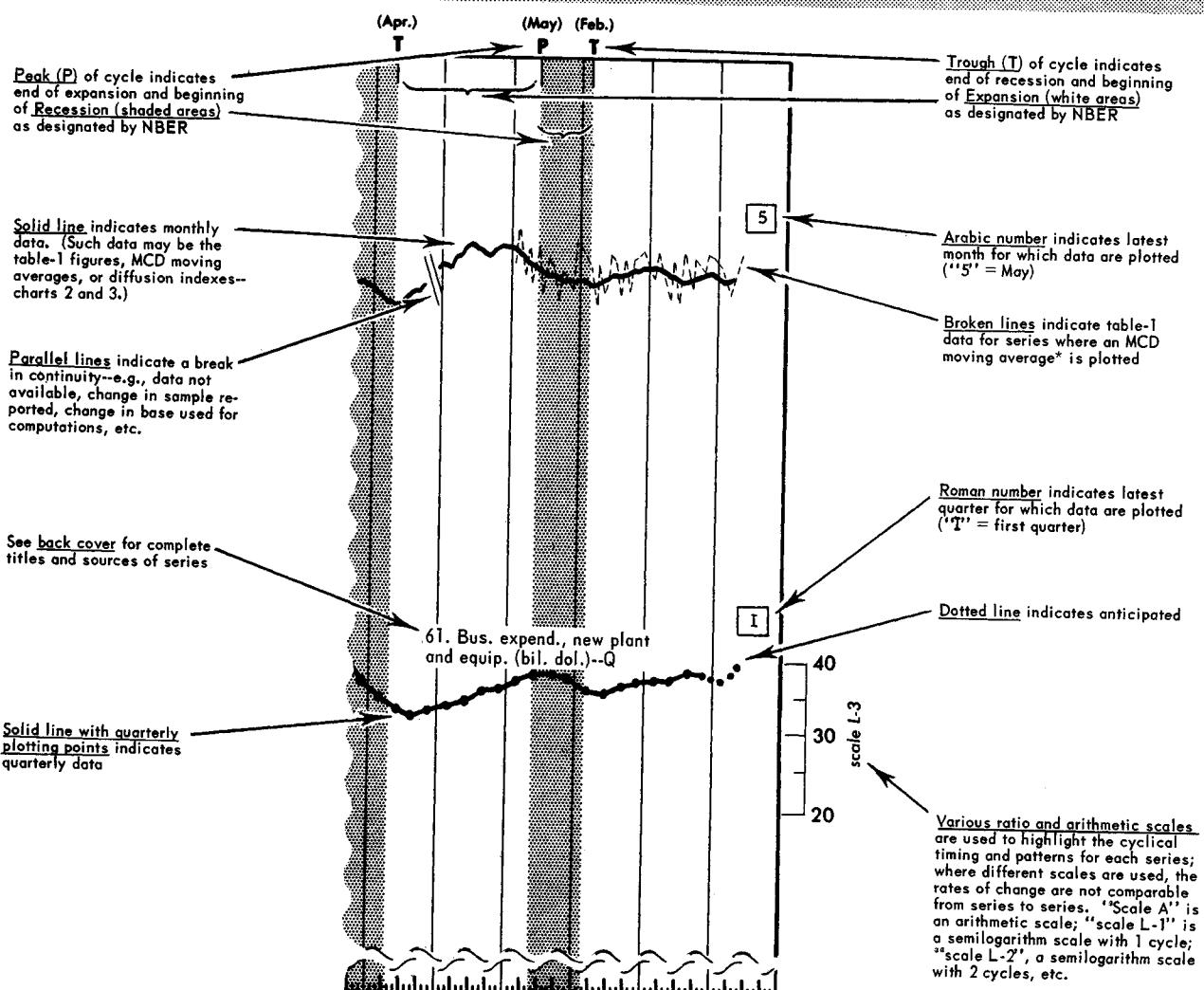
Historical Time Series (charts 1, 2, and 3).—These charts show the cyclical fluctuations of each series against the background of expansions and recessions in general business activity from 1948 to the current month. Shaded areas on the charts indicate periods of business cycle recession between business cycle peak dates (beginnings of shaded areas) and business cycle trough dates (ends of shaded areas). The shading for a new recession will be entered only after a trough has been designated.

Five ratio scales and several arithmetic scales are used to highlight the cyclical movements of the various series. The scale selected for each series is identified in the margin of the chart. Rates of change of various series can be compared with each other only where scales are identical. See the diagram, page 5, for additional help in using these charts.

Cyclical Comparisons (charts 4 and 5).—These charts compare the performance of each series during the current expansion or recession with that during the corresponding phase of previous business cycles. In these charts the usual date sequence followed in charts is disregarded, and instead the data are aligned at a strategic point of the business cycle, either the trough or the peak. Thus these charts facilitate judgements on the vigor of a current expansion or the severity of a current recession relative to cyclical movements during the corresponding phases of previous cycles.

Two types of cyclical comparisons are made. Chart 4 compares the pattern of the current business or reference cycle (i.e., the cycle for aggregate economic activity) with movements over the corresponding phase of previous reference cycles. Chart 5 compares the pattern of the current specific cycle (i.e., the cycle for a particular series) with the movements over the corresponding phases of previous specific cycles in that series. In both charts, the trough dates are aligned. In chart 4, the levels of the preceding peaks are also aligned and in chart 5, the levels of the preceding troughs are also aligned. See the section, "Comparisons of Cyclical Patterns", for more detailed descriptions of these comparisons.

## How to Read Charts 1, 2, and 3

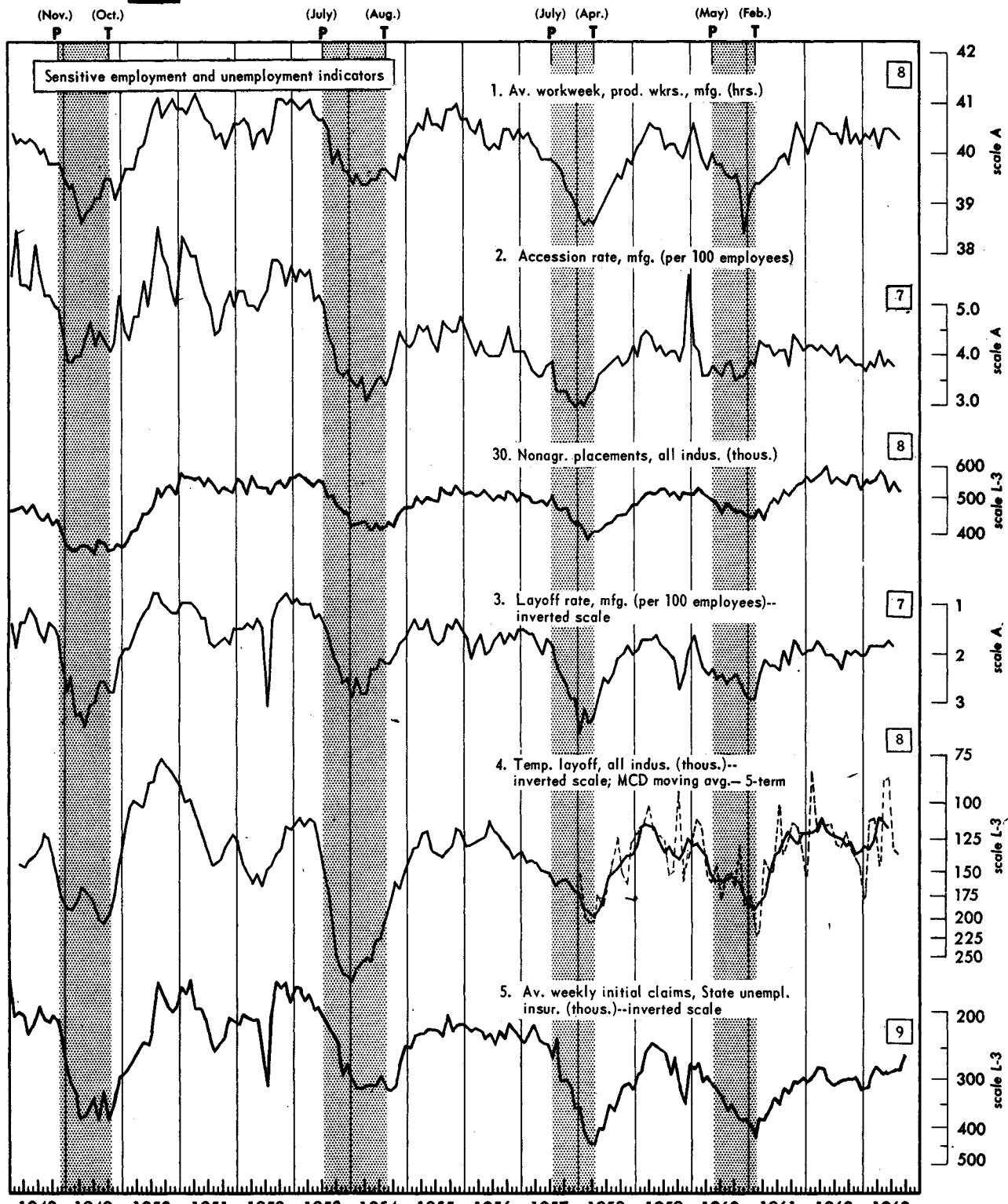


\*Certain irregular series are shown in terms of their MCD moving averages. These series are noted. Such averages are plotted 2 months behind actual data for MCD 5-term moving averages and  $2\frac{1}{2}$  months behind, for MCD 6-term moving averages. See text for description of MCD moving averages.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT

## NBER Leading Indicators



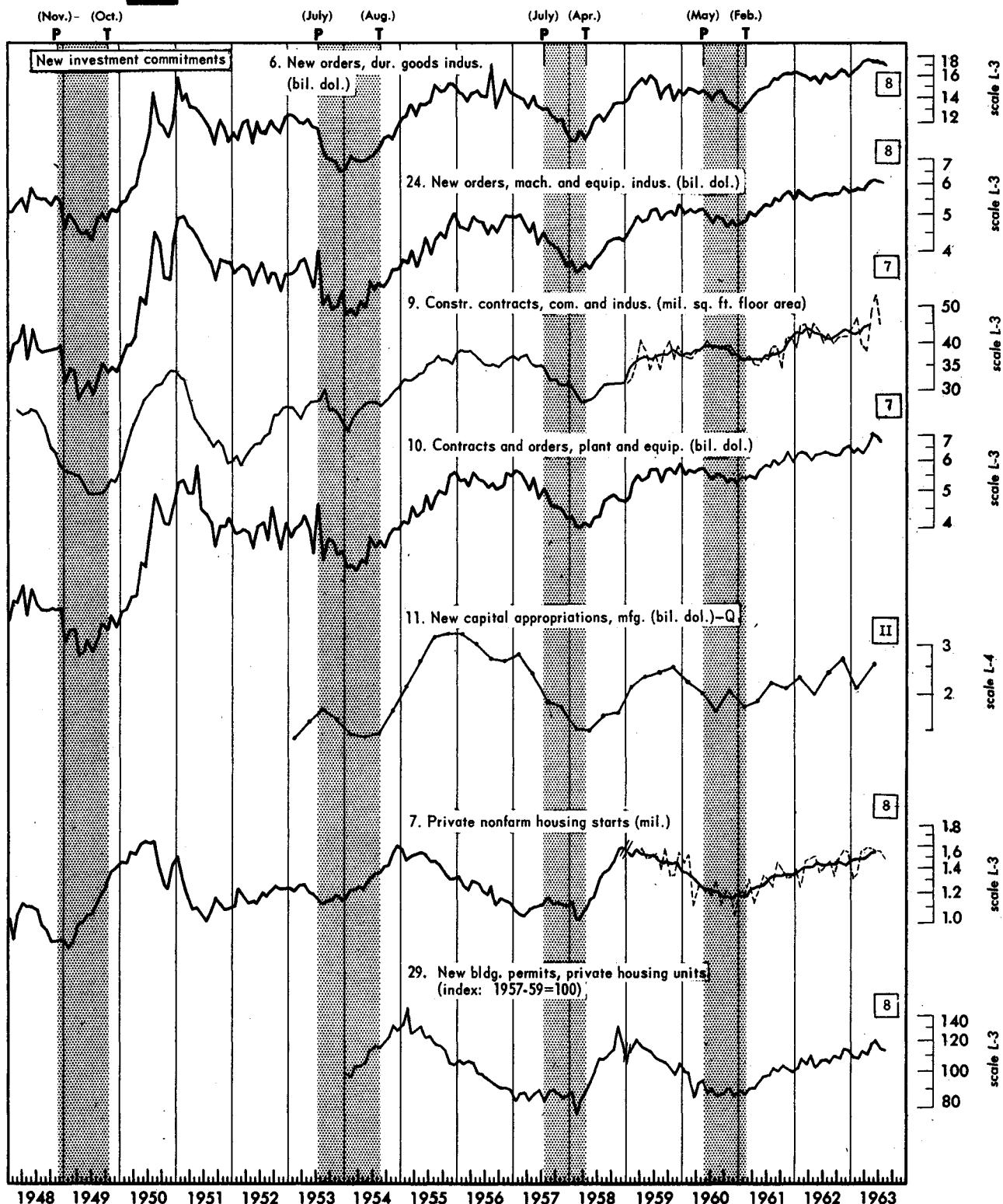
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

A

## NBER Leading Indicators—Con.



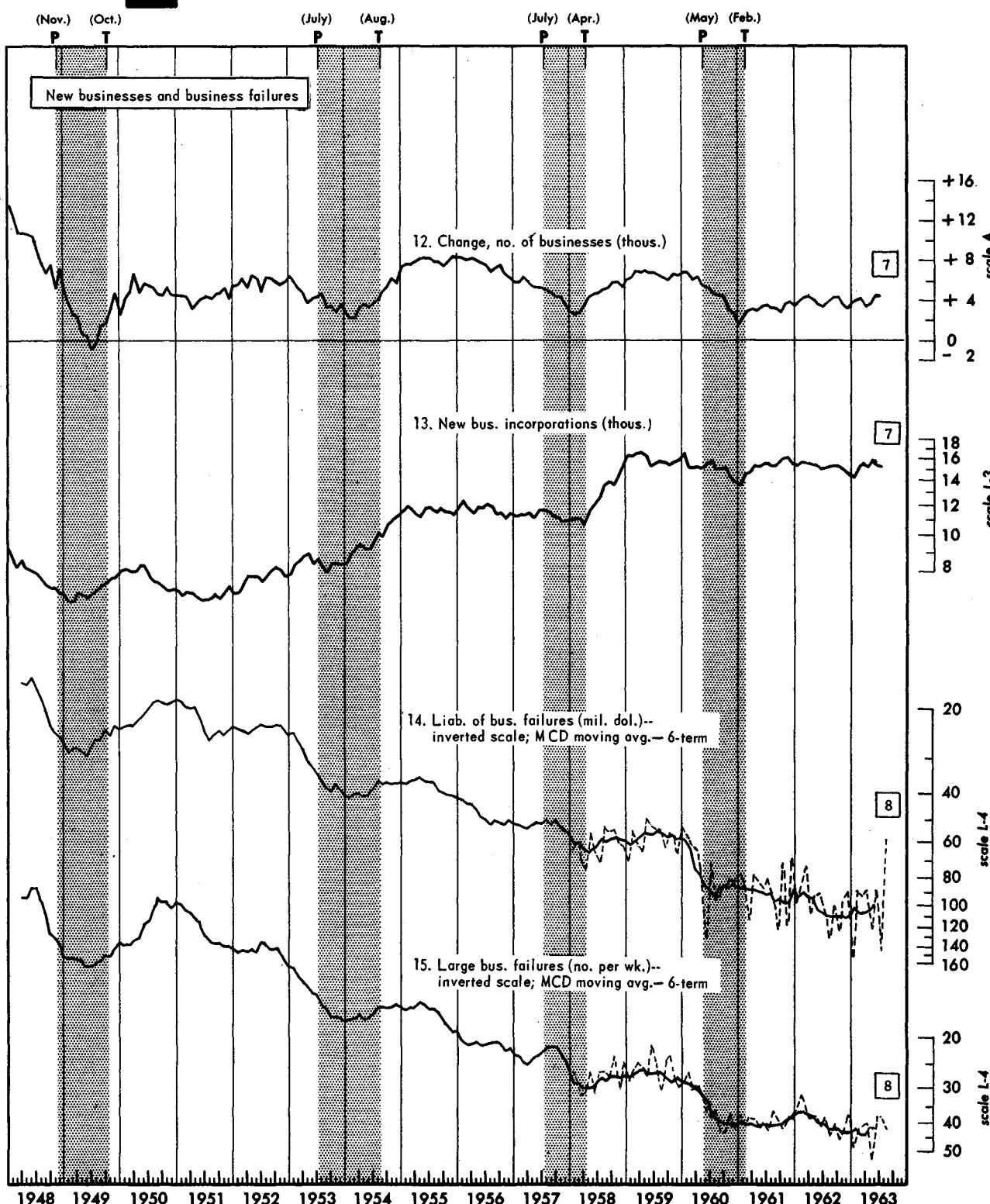
See "How to Read Charts 1, 2, and 3," page 5.

CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

A

## NBER Leading Indicators—Con.



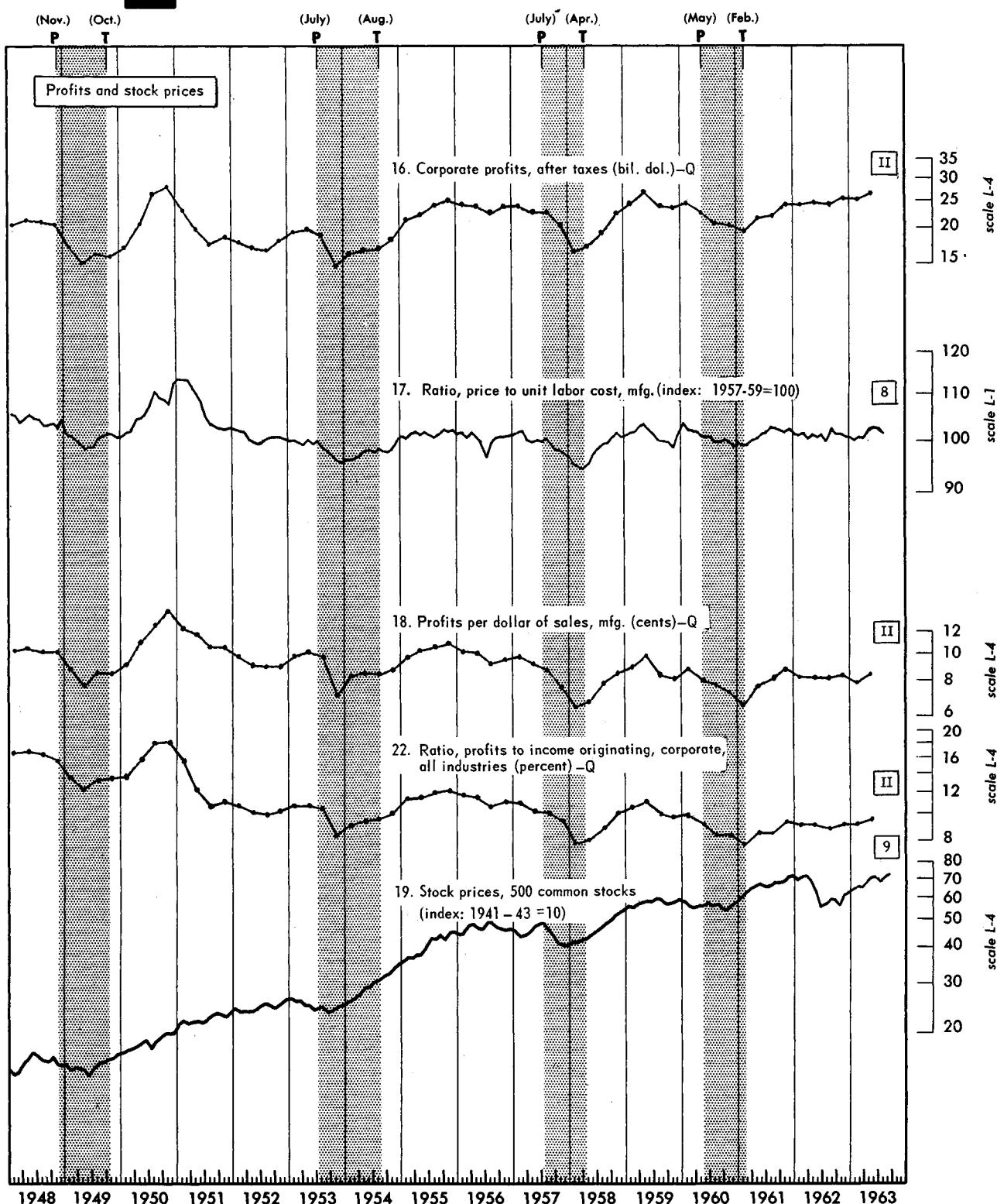
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

A

## NBER Leading Indicators—Con.



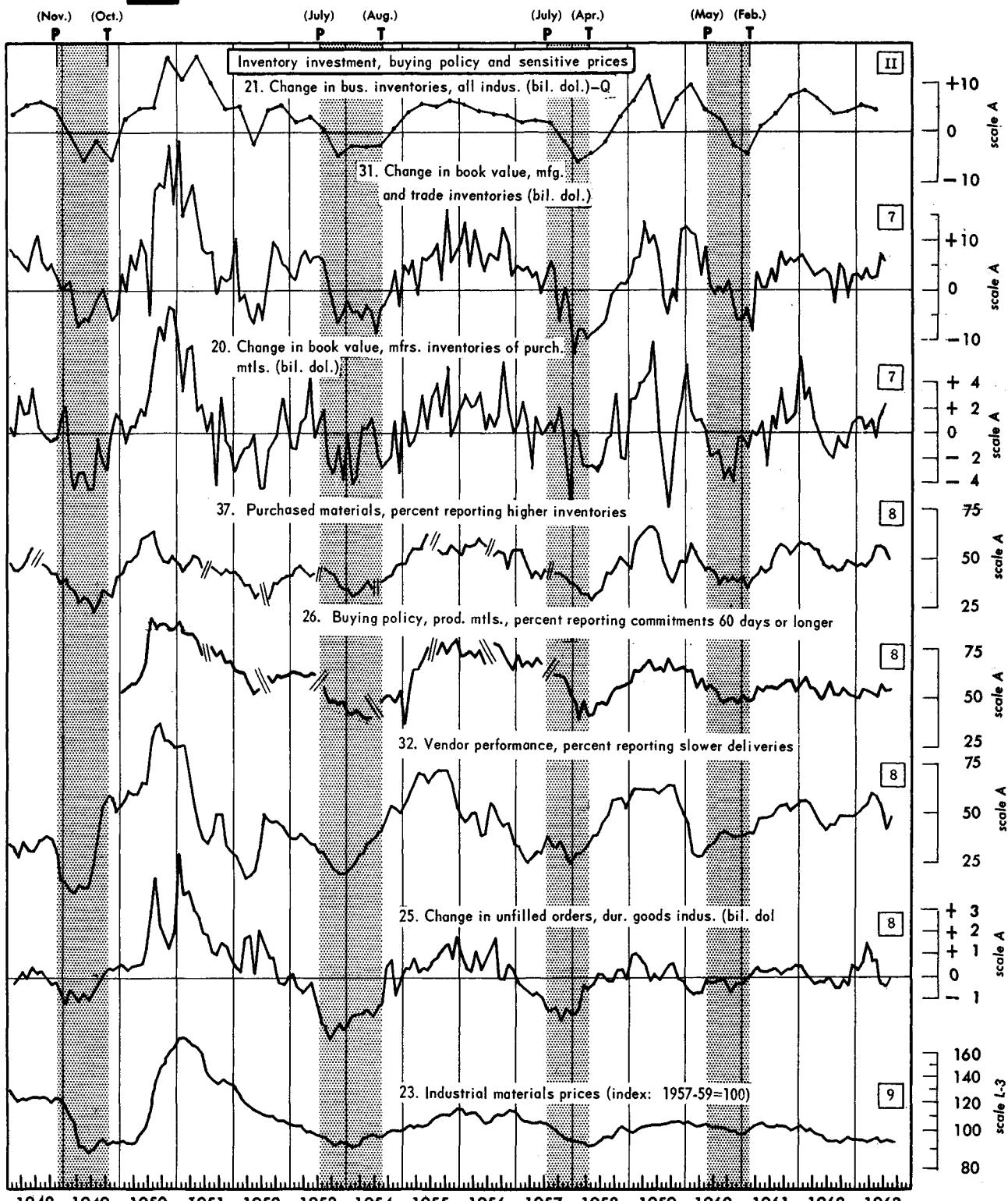
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

A

## NBER Leading Indicators—Con.



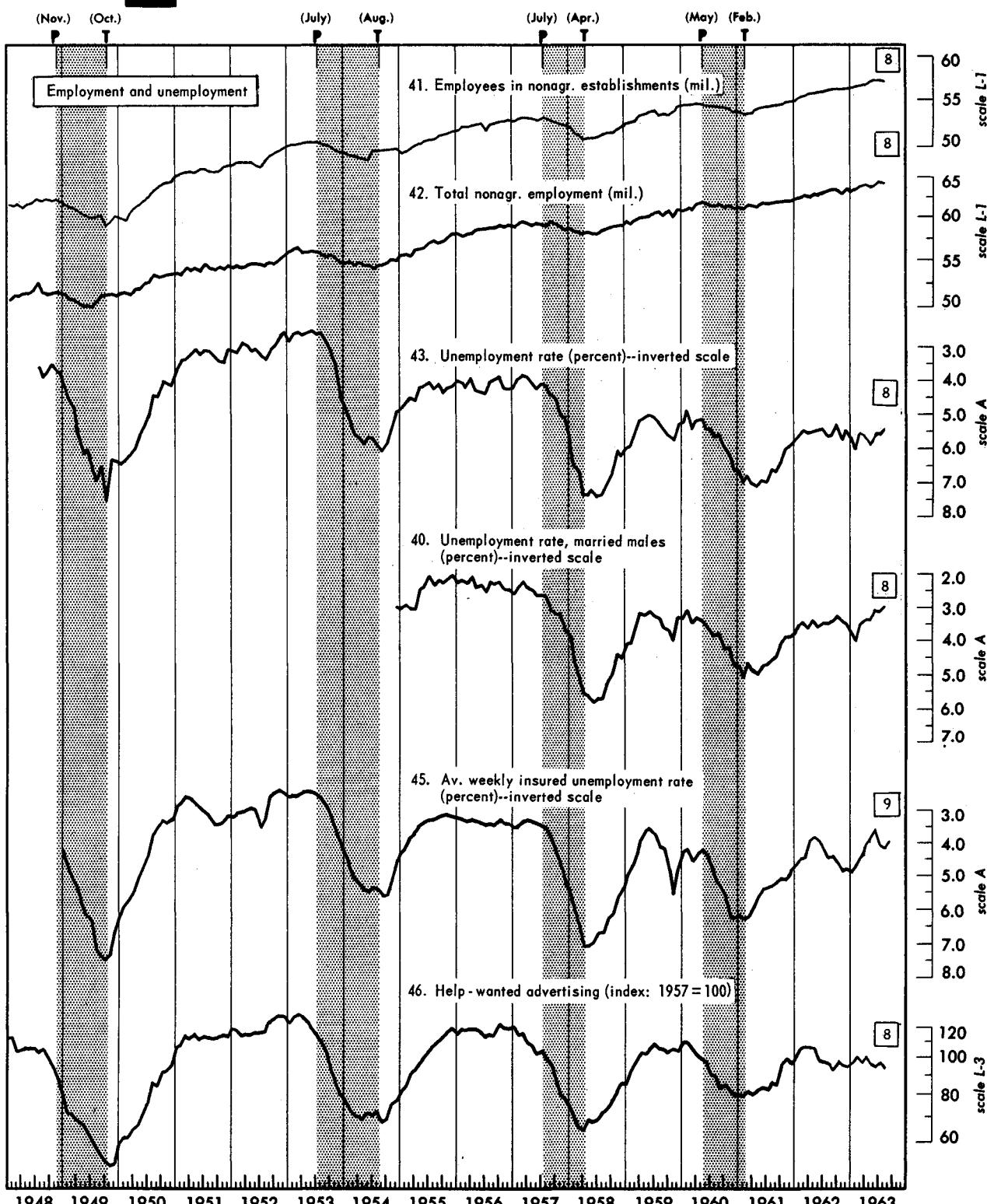
See "How to Read Charts 1, 2, and 3," page 5.

CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

B

## NBER Roughly Coincident Indicators



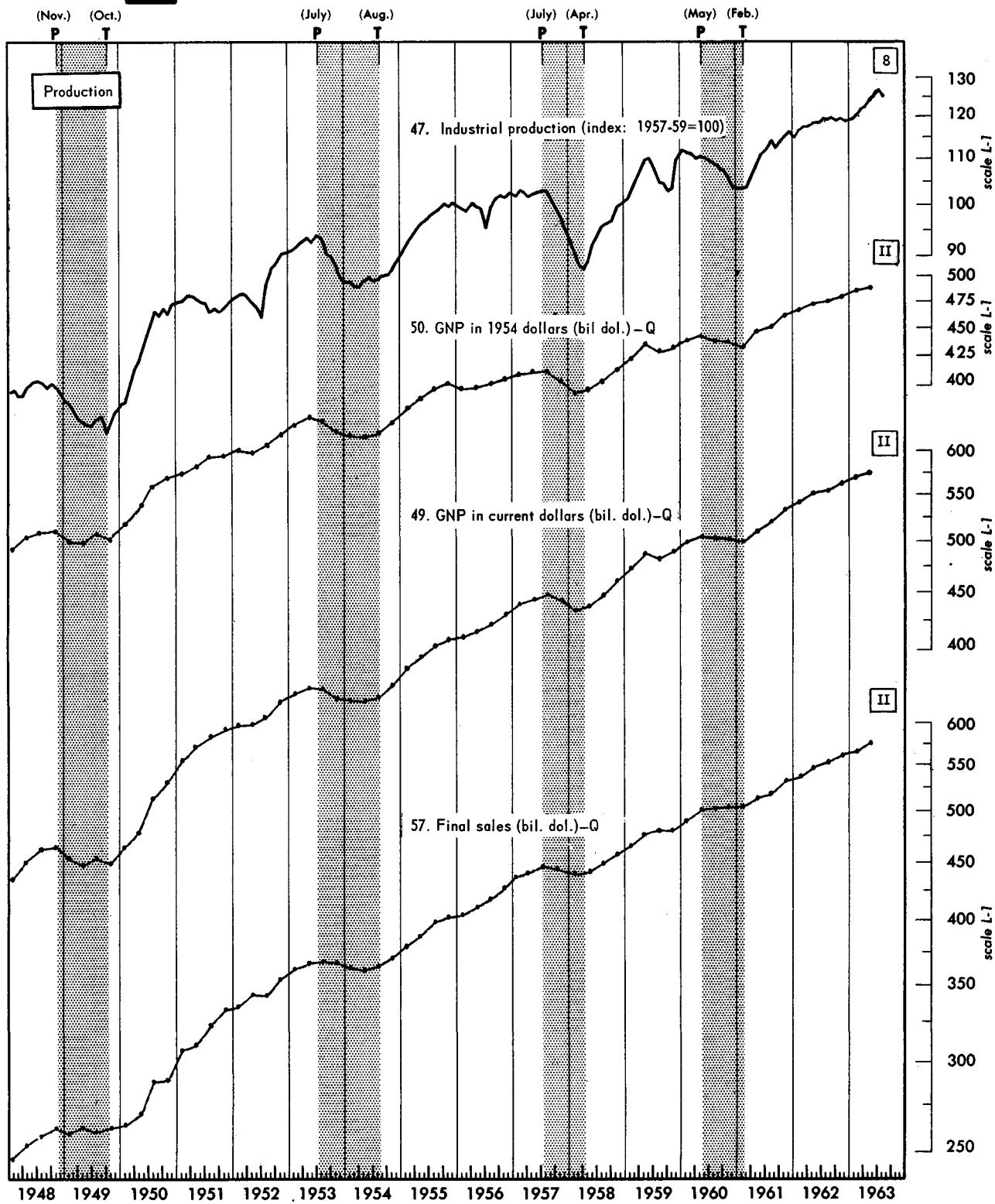
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

B

## NBER Roughly Coincident Indicators—Con.



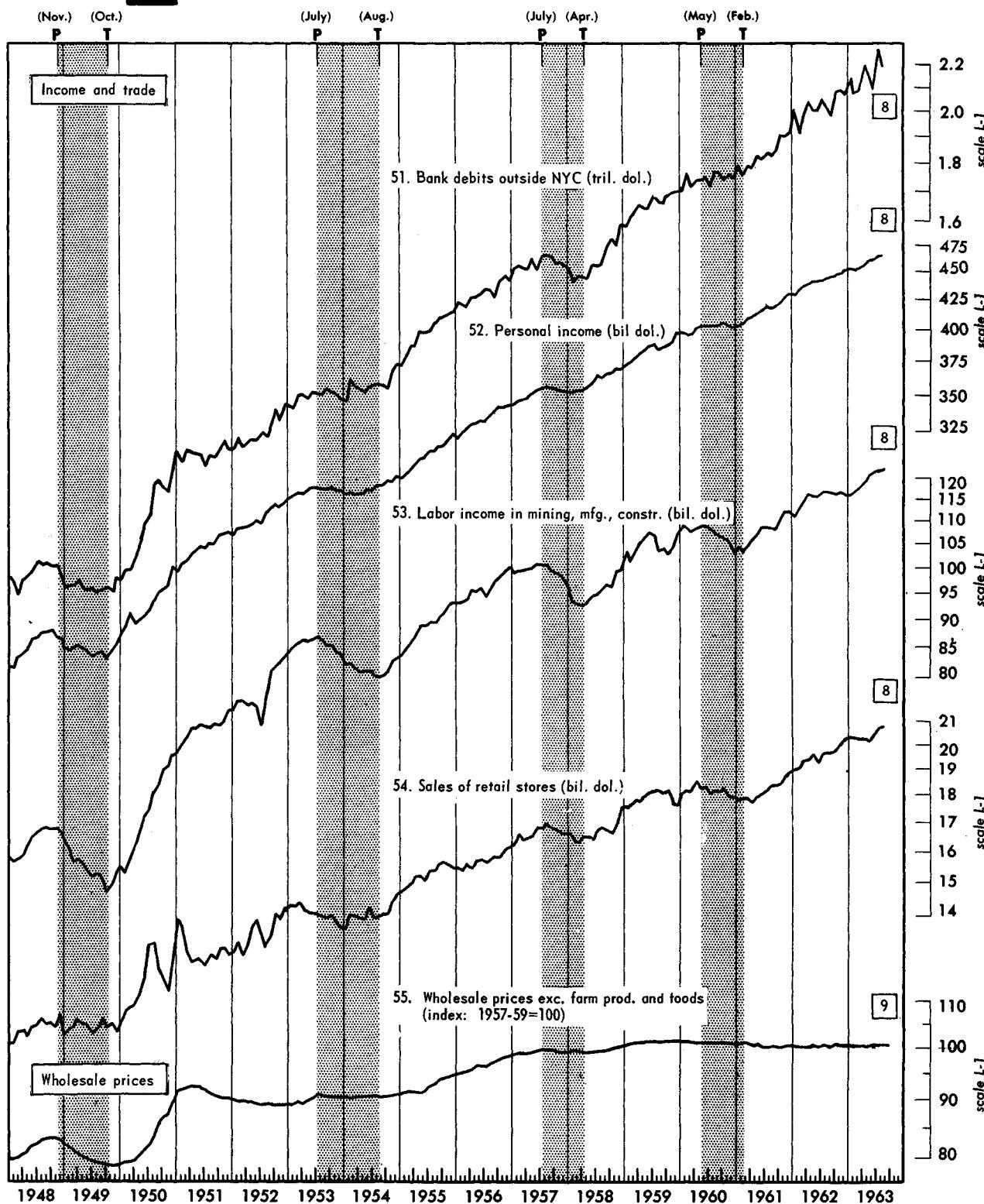
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

B

## NBER Roughly Coincident Indicators—Con.



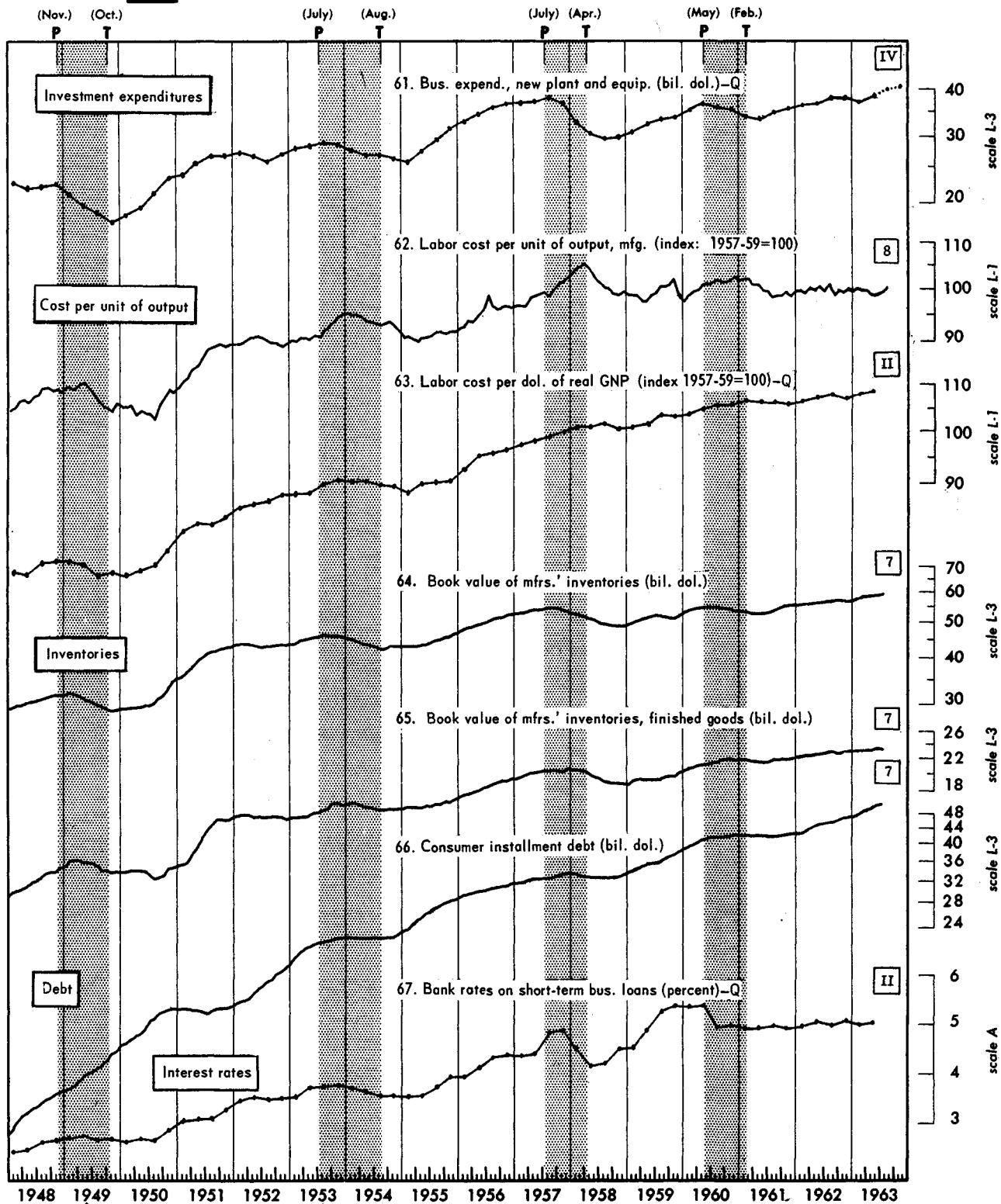
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

C

## NBER Lagging Indicators



1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963

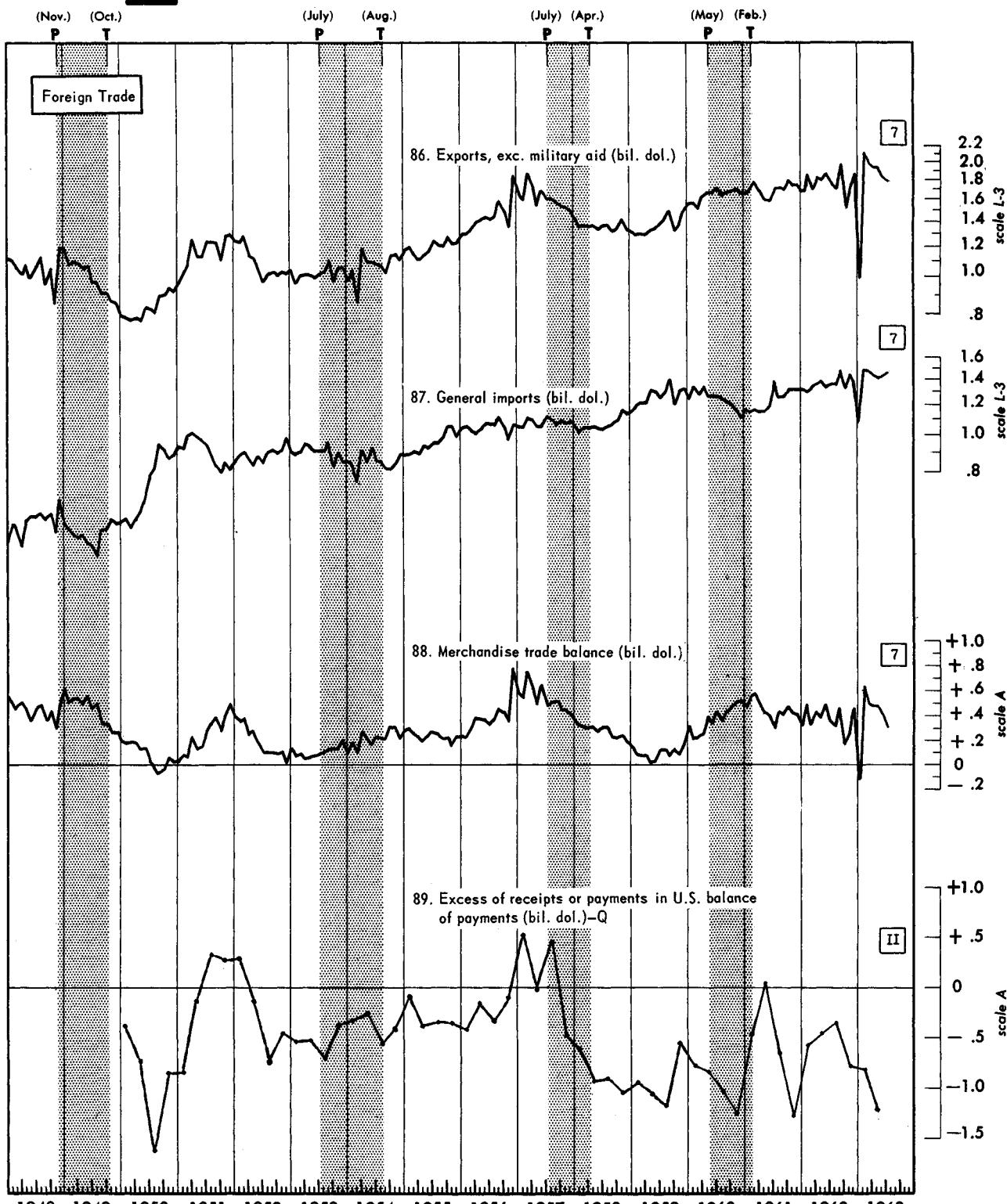
See "How to Read Charts 1, 2, and 3," page 5.

CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

D

## Other U.S. Series With Business Cycle Significance



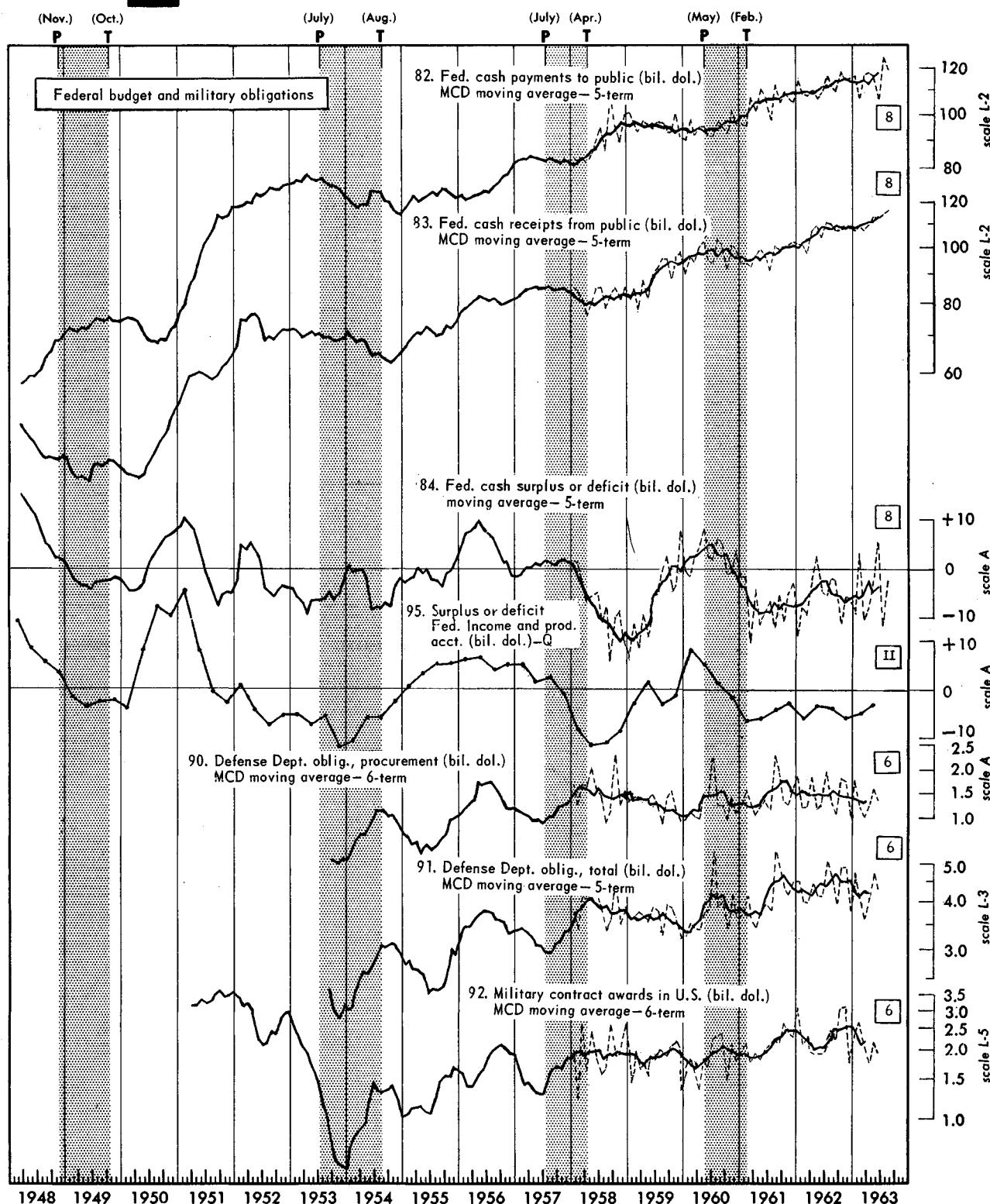
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

D

## Other U.S. Series With Business Cycle Significance—Con.



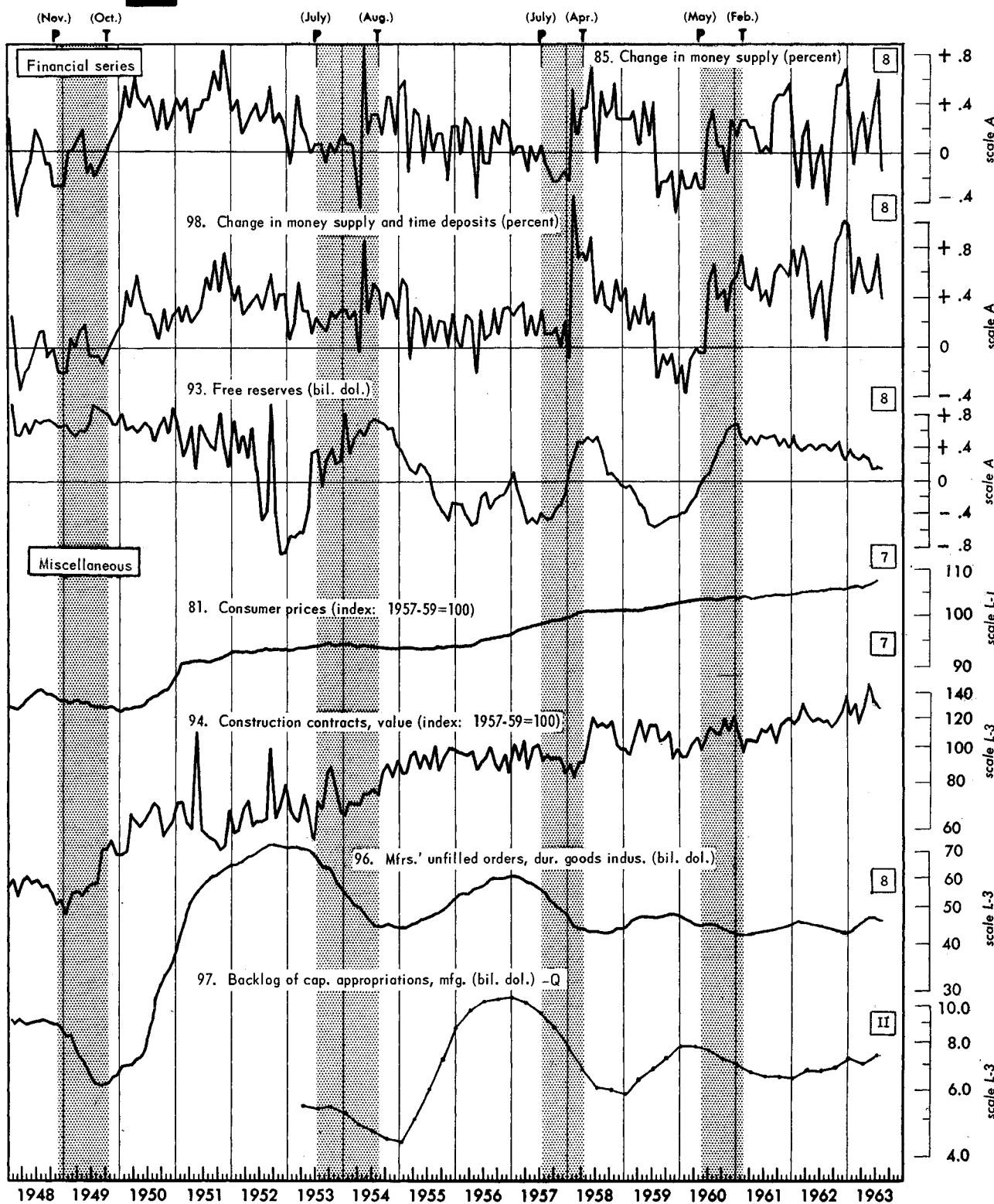
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

D

## Other U.S. Series With Business Cycle Significance—Con.



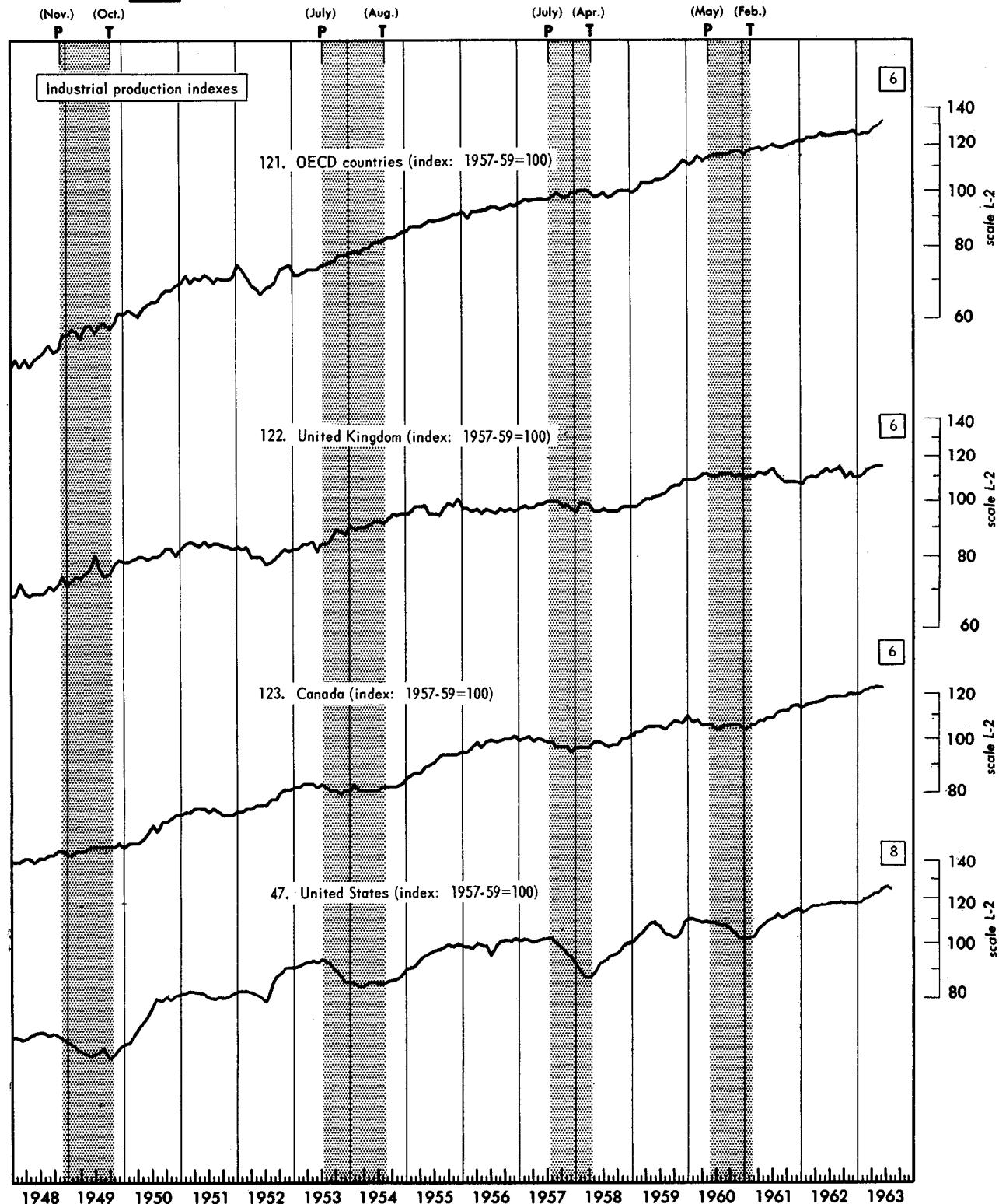
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

**BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.**

E

## International Comparisons of Industrial Production



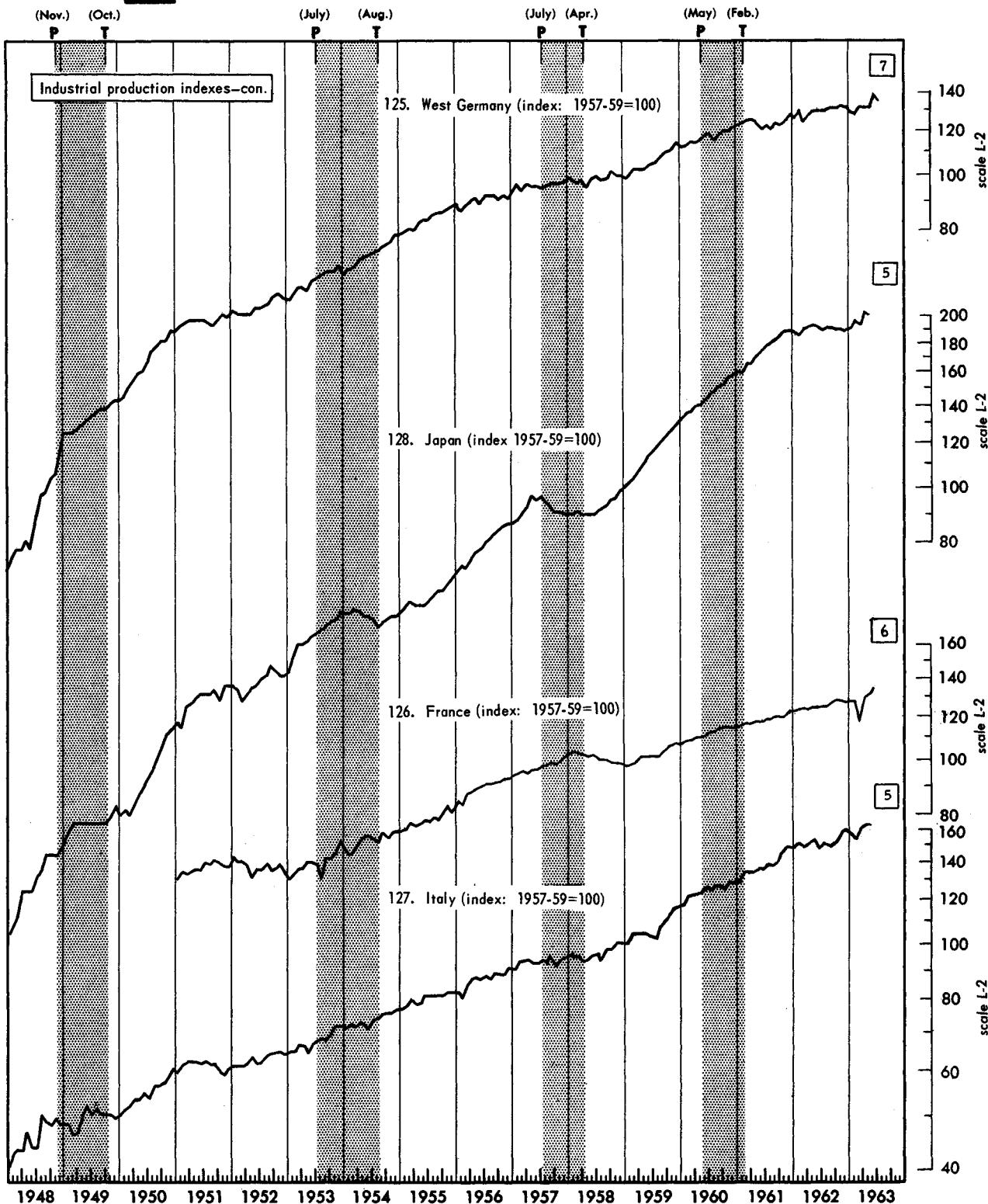
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 1

## BUSINESS CYCLE SERIES: 1948 TO PRESENT—Con.

E

## International Comparisons of Industrial Production—Con.



See "How to Read Charts 1, 2, and 3," page 5.

## Basic Data

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NBER Leading Indicators							
	1. Average workweek of production workers, manufacturing	2. Accession rate, manufacturing	30. Nonagricultural placements, all industries	3. Layoff rate, manufacturing	4. Number of persons on temporary layoff, all industries <sup>2</sup>	5. Avg. weekly initial claims for unemployment insurance, State programs	6. Value of mfrs' new orders, durable goods industries	24. Value of mfrs' new orders, machinery and equipment industries
1960	(Hours per prod. wkr.) Revised <sup>1</sup>	(Per 100 employees) Revised <sup>1</sup>	(Thous.)	(Per 100 employees) Revised <sup>1</sup>	(Thous.)	(Thous.)	(Bil. dol.)	(Bil. dol.)
January.....	40.6	4.2	506	1.6	122	281	14.19	5.04
February.....	40.2	4.1	535	1.9	110	271	14.80	5.14
March.....	39.9	3.6	513	2.3	116	303	14.64	5.06
April.....	39.7	3.6	504	2.4	156	294	14.47	5.12
May.....	40.0	3.8	494	2.3	160	316	14.68	5.17
June.....	39.8	3.7	482	2.5	145	322	14.34	5.01
July.....	39.8	3.6	460	2.4	177	335	13.84	4.78
August.....	39.6	3.8	488	2.6	154	363	14.41	4.96
September.....	39.5	3.9	473	2.5	153	351	14.62	4.87
October.....	39.6	(L)3.5	460	2.4	166	373	13.74	(L)4.65
November.....	39.3	3.6	461	2.6	128	385	13.60	4.81
December.....	(L)38.4	3.6	455	2.8	183	381	13.22	4.66
1961								
January.....	39.2	3.9	443	2.9	173	393	(L)12.88	4.79
February.....	39.4	3.8	443	(L)2.9	(L)222	(L)429	13.36	4.80
March.....	39.4	4.3	467	2.4	215	379	13.82	5.10
April.....	39.5	4.2	(L)440	2.1	141	381	14.38	4.99
May.....	39.6	4.2	478	2.2	150	358	14.79	5.17
June.....	39.8	4.0	497	2.2	151	334	14.90	5.30
July.....	39.9	4.1	481	2.3	101	348	15.02	5.28
August.....	40.0	4.1	519	1.9	136	316	15.63	5.55
September.....	39.8	3.8	502	2.2	127	329	15.74	5.45
October.....	40.3	(H)4.4	527	1.7	113	304	16.07	5.59
November.....	40.6	4.3	542	1.8	115	305	16.10	5.74
December.....	40.3	4.1	544	2.0	127	296	16.24	5.48
1962								
January.....	40.0	4.2	565	1.9	154	304	16.43	5.78
February.....	40.3	4.2	550	1.9	(H)82	291	16.19	5.71
March.....	40.6	4.1	568	1.7	118	279	16.00	5.59
April.....	40.6	4.2	578	1.8	112	280	15.73	5.47
May.....	40.5	4.1	(H)602	2.0	116	300	15.97	5.60
June.....	40.4	4.0	546	2.0	114	309	15.44	5.62
July.....	40.4	4.2	560	2.1	128	308	16.27	5.71
August.....	40.2	3.9	551	2.3	131	303	15.91	5.60
September.....	(H)40.7	4.0	540	1.9	120	300	15.89	5.69
October.....	40.2	3.9	569	2.0	129	300	16.57	5.62
November.....	40.4	3.8	563	1.9	139	298	16.34	5.85
December.....	40.2	3.8	529	2.0	114	317	16.02	5.74
1963								
January.....	40.4	3.7	558	2.0	179	316	16.71	5.75
February.....	40.3	3.9	547	1.8	112	295	17.09	5.89
March.....	40.5	3.8	550	1.8	108	(H)277	17.48	5.84
April.....	40.1	4.1	582	1.8	146	288	(H)17.89	6.01
May.....	40.5	3.8	561	1.8	87	287	17.70	6.14
June.....	40.5	3.9	520	(H)1.7	85	288	r17.08	(H)r6.15
July.....	40.4	p3.8	554	p1.8	130	286	r17.16	r6.10
August.....	p40.3	(Na)	524	(NA)	134	285	p16.75	p6.05
September.....						,258		
October.....								
November.....								
December.....								

<sup>1</sup>See "New Features and Changes For This Issue," page ii.<sup>2</sup>Beginning with April 1962, the 1960 Census is used as the benchmark for computing this series. Prior to April 1962, the 1950 Census is used as the benchmark.<sup>3</sup>Week ended September 7, 1963.

# Basic Data

21

**Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued**

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NBER Leading Indicators--Continued						
	9. Construction contracts awarded for commercial and industrial buildings	10. Contracts and orders for plant and equipment	11. Newly approved capital appropriations, 602 manufacturing corporations	7. New private nonfarm dwelling units started	29. Index of new private housing units authorized by local building permits	12. Net change in business population, operating businesses	13. Number of new business incorporations
1960	(Mil. sq. ft. floor space)	(Bil. dol.)	(Bil. dol.)	(Ann. rate, thous.)	(1957-59=100)	(Thous.)	(Number)
January.....	37.32	5.56	...	1,444	100.2	...	16,561
February.....	36.93	5.69	2.27	1,508	98.2	+19	15,274
March.....	36.73	5.61	...	1,107	86.0	...	15,233
April.....	38.73	5.72	...	1,252	93.9	...	15,280
May.....	39.25	5.78	2.02	1,249	95.4	+17	15,176
June.....	40.31	5.58	...	1,231	88.1	...	15,630
July.....	38.87	5.39	...	1,184	91.5	...	15,828
August.....	39.38	5.58	(L) 1.78	1,285	87.8	+14	15,114
September.....	38.96	5.51	...	1,113	88.4	...	15,112
October.....	39.44	(L) 5.27	...	1,210	89.9	...	15,035
November.....	39.44	5.39	2.10	1,192	90.8	+10	14,264
December.....	38.15	5.28	...	(L) 1,041	(L) 87.0	...	14,097
1961							
January.....	36.21	5.53	...	1,216	89.5	...	(L) 13,607
February.....	36.49	5.45	1.84	1,199	88.2	(L) +6	14,570
March.....	37.49	5.58	...	1,305	91.3	...	14,658
April.....	35.62	5.53	...	1,133	91.4	...	15,327
May.....	(L) 35.16	5.73	1.93	1,215	93.2	+10	15,298
June.....	36.73	5.90	...	1,340	98.7	...	15,431
July.....	36.57	5.82	...	1,305	98.9	...	15,492
August.....	39.32	6.13	2.23	1,252	101.9	+10	15,277
September.....	38.73	5.97	...	1,453	100.2	...	15,402
October.....	33.88	6.16	...	1,381	104.2	...	16,035
November.....	41.61	6.42	2.10	1,319	101.8	+10	(H) 16,149
December.....	41.69	6.02	...	1,324	99.0	...	15,711
1962							
January.....	38.99	6.34	...	1,392	102.8	...	15,279
February.....	44.10	6.38	2.34	1,253	109.8	+11	15,775
March.....	45.19	6.31	...	1,460	105.0	...	15,727
April.....	40.87	6.11	...	1,489	111.5	...	15,372
May.....	45.39	6.27	2.02	1,501	103.7	+12	15,363
June.....	42.99	6.29	...	1,366	107.1	...	14,990
July.....	39.86	6.37	...	1,423	108.6	...	15,171
August.....	42.65	6.29	2.41	1,459	106.3	+11	15,216
September.....	39.90	6.24	...	1,328	110.2	...	15,232
October.....	41.62	6.24	...	1,491	109.5	...	15,121
November.....	41.68	6.50	(H) 2.71	1,564	114.9	+11	14,892
December.....	42.48	6.59	...	1,541	114.5	...	14,767
1963							
January.....	44.94	6.36	...	1,317	110.0	...	14,457
February.....	46.98	6.51	r2.15	1,353	109.3	+11	15,398
March.....	38.92	6.37	...	1,549	112.9	...	15,604
April.....	37.87	6.63	...	(H) 1,590	111.3	...	15,257
May.....	47.95	(H) 7.02	...	rl,554	117.9	(H) +12	15,756
June.....	(H) 53.97	r6.87	...	rl,548	(H) 120.5	...	15,512
July.....	44.78	p6.70	(NA)	pl,491	r115.1	...	15,356
August.....					pl13.7	...	(NA)
September.....							
October.....							
November.....							
December.....							

## Basic Data

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NBER Leading Indicators--Continued								
	14. Current liabilities of business failures	15. Business failures with liabilities of \$100,000 and over	16. Corporate profits after taxes	17. Price per unit of labor cost index	18. Profits (before taxes) per dol. sales, all mfg. corporations	22. Ratio, profits to income originating, corporate, all industries	19. Index of stock prices, 500 common stocks*	21. Change in bus. inventories, farm and nonfarm, after valuation adjustment	
1960	(Mil. dol.)	(Number per week)	(Ann. rate, bil. dol.)	(1957-59=100)	(Cents)	(Percent)	(1941-43=10)	(Ann. rate, bil. dol.)	
January.....	52.88	29	...	103.6	...	...	58.03	...	
February.....	57.60	27	24.1	102.3	8.8	9.7	55.78	+9.3	
March.....	61.57	30	...	101.9	...	...	55.02	...	
April.....	63.71	30	...	101.4	...	...	55.73	...	
May.....	76.52	32	22.6	100.8	8.0	9.1	55.22	+4.2	
June.....	(H)131.31	36	...	100.4	...	...	57.26	...	
July.....	71.04	38	...	100.4	...	...	55.84	...	
August.....	94.66	36	20.9	99.9	7.8	8.4	56.51	+2.7	
September.....	86.02	43	...	99.9	...	...	54.81	...	
October.....	85.98	(H)43	...	100.0	...	...	(H)53.73	...	
November.....	80.44	37	20.4	99.9	7.2	8.4	55.47	-2.3	
December.....	82.78	41	...	98.9	...	...	56.80	...	
1961									
January.....	77.79	38	(H)19.2	99.2	(H)6.6	(H)7.7	59.72	...	
February.....	83.73	41	(H)98.9	(H)6.6	(H)6.6	(H)7.7	62.17	(H)-4.3	
March.....	116.17	39	...	99.0	...	...	64.12	...	
April.....	76.88	39	...	100.0	...	...	65.83	...	
May.....	82.96	42	21.6	100.2	7.6	8.5	66.50	+1.1	
June.....	86.69	40	...	100.9	...	...	65.62	...	
July.....	80.15	43	...	101.2	...	...	65.44	...	
August.....	94.47	36	22.0	102.6	7.9	8.5	67.79	+3.5	
September.....	126.12	39	...	102.2	...	...	67.26	...	
October.....	72.28	42	...	102.0	...	...	68.00	...	
November.....	119.93	39	24.3	101.7	(H)8.6	9.3	71.08	+7.2	
December.....	71.81	38	...	102.1	...	...	(H)71.74	...	
1962									
January.....	101.53	37	...	101.2	...	...	69.07	...	
February.....	86.03	(H)32	24.2	101.0	8.2	9.1	70.22	(H)+8.1	
March.....	74.89	36	...	101.4	...	...	70.29	...	
April.....	108.58	38	...	100.6	...	...	68.05	...	
May.....	94.54	38	24.6	101.1	8.1	9.1	62.99	+6.5	
June.....	91.70	41	...	100.7	...	...	55.63	...	
July.....	107.48	38	...	101.3	...	...	56.97	...	
August.....	132.64	45	24.3	100.0	8.1	8.9	58.52	+3.6	
September.....	103.73	40	...	102.4	...	...	58.00	...	
October.....	122.39	46	...	101.3	...	...	56.17	...	
November.....	98.94	42	25.5	101.3	8.3	9.1	60.04	+4.0	
December.....	90.41	37	...	100.9	...	...	62.64	...	
1963									
January.....	153.15	49	...	100.7	...	...	65.06	...	
February.....	90.04	42	25.4	100.0	7.9	9.1	65.92	+5.1	
March.....	93.49	41	...	100.8	...	...	65.67	...	
April.....	89.72	40	...	100.6	...	...	68.76	...	
May.....	122.31	54	(H)26.8	102.1	8.5	(H)9.5	70.14	+4.3	
June.....	89.37	38		(H)103.1			70.11		
July.....	142.28	38		102.2			69.07		
August.....	(H)58.40	42		p100.9			70.98		
September.....							73.12		
October.....									
November.....									
December.....									

<sup>1</sup>Average for September 13th, 16th, and 17th, 1963.

# Basic Data

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**Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued**

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Year and month	NBER Leading Indicators--Continued						
	31. Change in book value of manufacturing and trade inventories, total	20. Change in book value of mfrs.' inventories, purchased materials	37. Purchased materials, percent reporting higher inventories	26. Buying policy, production matls., percent reporting commitments 60 days or longer*	32. Vendor performance, percent reporting slower deliveries*	25. Change in manufacturers' unfilled orders, durable goods industries	23. Index of industrial materials prices*
	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Percent reporting)	(Percent reporting)	(Percent reporting)	(Bil. dol.)	(1957-59=100)
1960							
January.....	+12.8	+4.6	48	64	44	-0.52	105.7
February.....	+11.7	+1.5	58	64	30	-0.78	104.3
March.....	+11.4	+0.8	52	56	(L)27	-0.77	102.4
April.....	+3.2	+1.0	47	61	28	-0.68	103.8
May.....	+8.5	+0.4	44	55	32	-0.19	104.1
June.....	+2.3	-1.6	45	57	34	-0.22	102.7
July.....	-1.5	-1.4	42	54	36	-0.24	101.6
August.....	+0.4	-1.2	37	50	40	-0.17	102.1
September.....	-0.6	-3.2	41	49	41	-0.13	101.2
October.....	+2.4	-2.4	38	50	39	(L)-0.77	99.7
November.....	-2.1	(L)-3.4	41	50	38	-0.41	98.5
December.....	-6.2	-0.4	39	(L)48	38	-0.30	(L)96.8
1961							
January.....	-5.8	-0.3	41	51	38	-0.37	97.3
February.....	-3.2	-1.0	(L)35	49	40	-0.02	99.3
March.....	(L)-8.7	+0.1	39	50	40	+0.02	103.1
April.....	+4.1	-0.1	42	57	47	+0.46	104.1
May.....	+0.7	+0.8	46	54	48	+0.23	(H)104.4
June.....	+0.4	-2.2	43	56	48	+0.11	101.0
July.....	+4.5	+1.1	46	56	49	+0.31	101.7
August.....	+1.8	+0.2	54	55	52	+0.35	102.9
September.....	(H)+7.8	+3.0	57	57	55	+0.06	102.9
October.....	+4.2	+0.5	56	59	55	+0.29	102.3
November.....	+6.1	+0.9	52	59	51	+0.34	98.9
December.....	+5.0	+1.3	55	54	53	+0.55	101.0
1962							
January.....	+7.6	(H)+5.0	(H)58	57	56	+0.53	102.9
February.....	+6.3	+2.2	57	(H)61	56	+0.22	100.6
March.....	+4.2	+2.9	57	56	55	-0.10	100.4
April.....	+2.5	+1.0	55	55	48	-0.34	98.3
May.....	+3.1	+0.2	53	49	46	-0.31	97.8
June.....	+4.3	-1.0	48	52	42	-0.32	95.4
July.....	+3.3	-1.5	45	58	44	-0.05	94.2
August.....	-3.0	-1.7	46	52	44	-0.57	94.5
September.....	+5.7	-0.1	44	52	48	-0.55	94.0
October.....	+3.8	-0.8	45	55	48	-0.18	94.9
November.....	-1.9	-0.9	49	52	48	-0.52	96.4
December.....	+3.1	+0.7	48	51	48	+0.05	95.8
1963							
January.....	+3.3	+1.1	46	50	50	+0.31	95.5
February.....	+1.9	+1.0	48	55	52	+0.61	95.1
March.....	+4.7	+0.3	46	54	54	(H)+1.42	94.4
April.....	+2.8	+1.0	49	53	(L)60	+0.64	94.5
May.....	+3.8	-0.3	57	52	58	+0.81	95.2
June.....	r+7.5	r+1.1	57	57	54	r-0.36	93.9
July.....	p+6.0	p+2.3	55	54	42	r-0.50	94.2
August.....	(NA)	(NA)	50	55	48	p-0.04	94.2
September.....							193.9
October.....							
November.....							
December.....							

<sup>1</sup>Average for September 13th, 16th, and 17th, 1963.

## Basic Data

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NBER Roughly Coincident Indicators							
	41. Number of employees in nonagricultural establishments	42. Total nonagricultural employment, labor force survey <sup>2</sup>	43. Unemployment rate, total <sup>2</sup>	40. Unemployment rate, married males <sup>2</sup>	45. Avg. weekly insured unemployment rate, State programs	46. Index of help-wanted advertising in newspapers	47. Index of industrial production	50. Gross national product in 1954 dollars
1960	(Thous.) Revised <sup>1</sup>	(Thous.)	(Percent)	(Percent)	(Percent)	(1957=100)	(1957-59=100)	(Ann. rate, bil. dol.)
January.....	54,331	60,521	5.29	3.38	4.27	109.0	111.7	...
February.....	54,527	60,863	4.96	3.11	4.17	110.1	111.0	439.9
March.....	54,499	60,464	5.45	3.53	4.54	105.4	110.5	...
April.....	54,728	61,144	5.21	3.35	4.26	100.3	109.7	...
May.....	54,555	61,252	5.18	3.42	4.19	99.7	109.9	442.1
June.....	54,449	61,215	5.46	3.60	4.39	97.8	109.6	...
July.....	54,395	61,090	5.48	3.72	4.67	90.1	109.1	...
August.....	54,352	60,982	5.66	3.85	5.10	89.4	108.7	440.2
September.....	54,248	61,114	5.60	3.80	5.38	82.6	107.8	...
October.....	54,160	60,857	5.98	4.28	5.68	84.6	107.0	...
November.....	54,015	61,142	6.20	4.22	6.27	82.2	105.4	437.1
December.....	53,752	(L) 60,801	6.60	4.74	(L) 6.33	(L) 79.0	103.6	...
1961								
January.....	53,725	60,980	6.68	4.78	6.15	79.9	(L) 103.3	...
February.....	(L) 53,541	60,912	7.03	(L) 5.09	6.32	79.3	103.4	(L) 434.0
March.....	53,615	61,314	6.82	4.72	6.26	81.1	103.8	...
April.....	53,713	61,111	7.01	4.91	5.91	79.8	106.6	...
May.....	53,911	61,091	(L) 7.11	5.00	5.61	82.0	108.8	443.4
June.....	54,165	61,448	6.91	4.78	5.32	83.8	110.9	...
July.....	54,294	61,254	6.96	4.74	5.29	82.6	112.0	...
August.....	54,444	61,283	6.67	4.61	5.22	86.1	113.4	450.4
September.....	54,480	61,330	6.69	4.54	5.10	84.8	112.0	...
October.....	54,593	61,476	6.42	4.12	5.04	95.9	113.5	...
November.....	54,825	61,766	6.07	3.94	5.08	99.1	114.8	463.1
December.....	54,927	61,788	5.98	3.91	4.81	96.9	115.6	...
1962								
January.....	54,946	61,882	5.84	3.81	4.71	102.3	114.6	...
February.....	55,223	62,148	5.69	3.59	4.52	105.9	116.3	467.8
March.....	55,368	62,356	5.49	3.53	4.41	(H) 106.3	117.3	...
April.....	55,703	62,295	5.58	3.69	3.93	106.1	117.8	...
May.....	55,822	62,552	5.52	3.48	3.82	106.0	118.3	474.0
June.....	55,908	62,541	5.50	3.64	3.96	98.5	118.4	...
July.....	56,010	62,715	5.43	3.54	4.25	97.9	119.4	...
August.....	56,019	63,017	5.67	3.54	4.41	97.0	119.4	475.6
September.....	56,125	63,074	5.63	3.43	4.38	92.8	119.8	...
October.....	56,195	63,036	(H) 5.34	3.35	4.55	96.8	119.2	...
November.....	56,205	62,708	5.76	3.43	4.84	95.9	119.5	481.4
December.....	56,211	63,248	5.54	3.57	4.79	e95.2	119.1	...
1963								
January.....	56,333	62,988	5.77	3.81	4.84	e97.5	119.2	...
February.....	56,458	63,245	6.09	4.04	4.69	e100.5	120.2	485.3
March.....	56,706	63,628	5.59	3.50	4.39	e98.5	121.3	...
April.....	56,873	63,851	5.65	3.37	4.03	100.2	122.5	...
May.....	57,060	63,643	5.91	3.37	3.96	95.9	r124.5	(H) 489.4
June.....	57,194	63,693	5.66	3.12	(H) 3.53	94.7	r125.7	
July.....	(H) 57,356	(H) 64,137	5.61	3.14	4.08	96.2	(H) 126.5	
August.....	p 57,299	64,079	5.48	(H) 2.96	4.14	p94.0	p125.6	
September.....					<sup>3</sup> 3.94			
October.....								
November.....								
December.....								

<sup>1</sup>See "New Features and Changes For This Issue," page ii.

<sup>2</sup>Beginning with April 1962, the 1960 Census is used as the benchmark for computing this series. Prior to April 1962, the 1950 Census is used as the benchmark.

<sup>3</sup>Week ended August 31, 1963.

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NEBER Roughly Coincident Indicators--Continued						
	49. Gross national product in current dollars	57. Final sales (series 49 minus 21)	51. Bank debits outside NYC, 343 centers	52. Personal income	53. Labor income in mining, manufacturing, and construction	54. Sales of retail stores	55. Index of wholesale prices except farm products and foods
1960	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Mil. dol.) Revised <sup>1</sup>	(1957-59=100)
January.....	500.4	491.1	1,692.2	395.0	108.7	18,097	101.5
February.....	500.4	491.1	1,765.4	395.6	108.5	18,200	101.4
March.....	...	...	1,715.2	395.9	107.9	18,178	101.4
April.....	...	...	1,731.2	400.8	108.3	18,557	101.4
May.....	504.1	499.9	1,731.2	402.3	108.8	18,320	101.2
June.....	...	...	1,739.0	403.0	108.4	18,312	101.3
July.....	...	...	1,714.0	402.7	108.3	18,113	101.3
August.....	503.5	500.7	1,771.8	403.5	107.6	18,195	101.3
September.....	...	...	1,766.5	404.4	107.0	18,207	101.1
October.....	...	...	1,738.0	405.2	106.9	18,298	101.2
November.....	502.1	504.4	1,758.9	404.5	105.5	18,080	101.1
December.....	...	...	(L) 1,742.3	(L) 403.2	103.7	18,008	101.0
1961							
January.....	500.4	504.7	1,786.2	404.4	104.0	17,942	101.0
February.....	500.4	504.7	1,755.0	405.3	(L) 103.3	17,965	101.1
March.....	...	...	1,785.1	410.1	104.2	17,971	101.1
April.....	...	...	1,781.8	411.7	106.0	(L) 17,811	100.9
May.....	512.5	511.4	1,829.3	414.5	107.1	18,003	100.9
June.....	...	...	1,824.0	417.3	108.5	18,098	100.7
July.....	...	...	1,839.9	420.8	108.9	18,234	100.7
August.....	521.9	518.3	1,832.7	419.1	108.5	18,373	100.8
September.....	...	...	1,848.2	420.5	108.3	18,371	100.8
October.....	...	...	1,904.6	424.3	110.1	18,494	100.7
November.....	537.8	530.5	1,903.8	428.4	111.7	18,775	100.8
December.....	...	...	1,916.9	431.3	111.8	18,879	100.9
1962							
January.....	544.5	536.3	2,009.7	430.1	111.3	18,990	100.8
February.....	544.5	536.3	1,916.6	434.0	112.8	19,139	100.7
March.....	...	...	1,985.3	436.4	114.0	19,320	100.7
April.....	...	...	2,044.4	439.5	116.1	19,389	(L) 100.7
May.....	552.4	546.0	2,015.0	440.8	116.0	19,585	100.9
June.....	...	...	2,000.2	441.7	115.9	19,311	100.8
July.....	...	...	2,054.8	443.5	116.6	19,658	100.9
August.....	556.8	553.1	2,017.0	444.6	116.8	19,671	100.8
September.....	...	...	1,988.5	445.5	116.7	19,769	100.9
October.....	...	...	2,080.9	447.7	116.5	19,875	100.9
November.....	565.2	561.2	2,090.5	449.9	116.9	20,112	100.8
December.....	...	...	2,066.9	452.1	116.5	20,253	100.7
1963							
January.....	571.8	566.6	r2,148.8	454.0	116.4	20,387	100.5
February.....	571.8	566.6	2,086.4	452.9	117.1	20,374	100.5
March.....	...	...	2,096.3	454.8	117.8	20,350	100.5
April.....	...	...	r2,198.7	457.4	119.4	20,276	100.2
May.....	(H) 579.6	(H) 575.3	r2,151.1	460.1	120.8	20,200	100.5
June.....			r2,105.3	462.6	121.6	20,486	100.8
July.....			r2,276.6	r464.2	r121.6	20,759	r100.9
August.....			p2,194.0	(H) p464.9	(H) p122.2	(H) p20,767	(H) 101.0
September.....							<sup>2</sup> 100.8
October.....							
November.....							
December.....							

<sup>1</sup>See "New Features and Changes For This Issue," page ii.<sup>2</sup>Week ended September 10, 1963.

## Basic Data

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	NBER Lagging Indicators						
	61. Business expenditures on new plant and equipment, total	62. Index of labor cost per unit of output, total manufacturing	63. Index of labor cost per unit of output, total GNP	64. Book value of manufacturers' inventories, all manufacturing industries	65. Book value of mfrs.' inventories of finished goods, all manufacturing indus.	66. Consumer installment debt	67. Bank rates on short-term business loans, 19 cities*
1960	(Ann. rate, bil. dol.)	(1957-59=100)	(1957-59=100)	(Bil. dol.)	(Bil. dol.)	(Mil. dol.)	(Percent)
January.....	...	97.1	...	53.3	20.4	38,971	
February.....	35.15	98.6	103.3	53.9	20.6	39,452	5.34
March.....	...	99.1	...	54.3	20.8	39,878	...
April.....	...	99.7	...	54.7	21.0	40,377	
May.....	36.30	100.3	104.3	55.0	21.2	40,672	5.35
June.....	...	100.9	...	55.1	21.3	41,013	...
July.....	...	100.9	...	54.9	21.4	41,299	...
August.....	35.90	101.4	105.2	55.0	21.6	41,508	4.97
September.....	...	101.2	...	54.7	21.9	41,762	...
October.....	...	101.2	...	54.4	21.9	41,898	...
November.....	35.50	101.7	105.2	54.0	21.9	42,032	4.99
December.....	...	102.2	...	53.7	21.8	42,143	...
1961							
January.....	...	101.9	...	53.7	21.8	42,118	
February.....	33.85	102.1	106.0	53.6	21.8	42,032	4.97
March.....	...	102.0	...	53.3	21.7	41,986	...
April.....	...	100.8	...	53.4	21.7	41,865	...
May.....	33.50	100.4	106.0	53.4	21.5	41,856	4.97
June.....	...	99.6	...	53.4	21.5	41,900	...
July.....	...	99.3	...	53.5	21.5	41,904	...
August.....	34.70	98.1	105.8	54.0	21.7	41,959	4.99
September.....	...	98.4	...	54.4	21.8	42,008	...
October.....	...	98.5	...	54.8	21.9	42,170	
November.....	35.40	99.1	104.7	55.0	21.9	42,439	4.96
December.....	...	98.7	...	55.2	22.0	42,787	...
1962							
January.....	...	99.4	...	55.7	22.1	43,066	
February.....	35.70	99.5	105.8	56.2	22.1	43,338	4.98
March.....	...	99.0	...	56.6	22.2	43,716	...
April.....	...	99.9	...	56.7	22.2	44,209	...
May.....	36.95	99.7	106.5	56.8	22.3	44,648	5.01
June.....	...	100.1	...	56.9	22.4	45,069	...
July.....	...	99.7	...	57.0	22.5	45,455	...
August.....	38.35	H101.0	107.1	57.0	22.6	45,813	4.99
September.....	...	98.9	...	57.2	22.7	46,015	...
October.....	...	99.7	...	57.3	22.7	46,399	...
November.....	37.95	99.5	106.6	57.2	22.8	46,980	5.02
December.....	...	99.9	...	57.4	23.0	47,438	...
1963							
January.....	...	99.4	...	57.5	23.0	47,925	
February.....	36.95	100.1	107.1	57.7	23.0	48,350	5.00
March.....	...	99.0	...	57.9	23.2	48,739	...
April.....	...	99.1	...	58.1	23.2	49,270	...
May.....	38.05	98.3	H108.3	58.4	23.3	49,704	5.01
June.....	...	r97.9	...	58.8	H23.6	50,137	
July.....	...	r99.0	...	H59.0	p23.5	50,638	
August.....	39.95	p100.2	...	(NA)	(NA)	(NA)	
September.....	...	...	...	...	...	...	
October.....	...	...	...	...	...	...	
November.....	41.15	...	...	...	...	...	

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

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Year and month	Other U.S. series with business cycle significance								
	86. Exports, excluding military aid shipments, total	87. General imports, total	88. Merchandise trade balance (series 86 minus 87)	89. Excess, receipts (+) or payments (-) in U.S. balance of payments	82. Federal cash payments to the public	83. Federal cash receipts from the public	84. Federal cash surplus (+) or deficit (-)	95. Surplus (+) or deficit (-), Federal income and product acct.	90. Defense Department obligations, procurement
1960	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Mil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Ann. rate, bil. dol.)	(Mil. dol.)
January.....	1,561.3	1,246.3	+315.0	...	89.9	89.9	0.0	...	937
February.....	1,565.7	1,348.0	+217.7	-775	97.8	96.6	-1.2	+8.2	1,104
March.....	1,518.1	1,289.8	+228.3	...	91.9	94.2	+2.3	...	1,020
April.....	1,622.2	1,348.6	+273.6	...	94.9	99.8	+4.9	...	983
May.....	1,659.3	1,269.0	+390.3	-831	94.4	102.9	+8.5	+5.2	1,488
June.....	1,633.8	1,276.5	+357.3	...	91.9	94.8	+2.9	...	1,397
July.....	1,706.5	1,270.7	+435.8	...	91.5	93.6	+2.1	...	2,204
August.....	1,624.8	1,255.8	+369.0	-1,018	97.4	104.0	+6.6	+1.4	1,256
September.....	1,647.2	1,220.6	+426.6	...	95.0	100.5	+5.5	...	1,256
October.....	1,667.6	1,206.0	+461.6	...	92.7	91.7	-1.0	...	945
November.....	1,680.6	1,161.7	+518.9	1-1,257	102.0	101.4	-0.6	-1.2	1,468
December.....	1,645.3	1,124.8	+520.5	...	96.3	99.5	+3.2	...	1,096
1961									
January.....	1,622.7	1,161.4	+461.3	...	95.5	94.2	-1.3	...	1,277
February.....	1,711.6	1,149.8	+561.8	-472	95.4	94.1	-1.3	-6.0	1,555
March.....	1,750.7	1,162.9	+587.8	...	107.4	92.6	-14.8	...	1,230
April.....	1,661.5	1,152.0	+509.5	2+31	100.6	97.0	-3.6	...	1,047
May.....	1,585.1	1,152.9	+432.2	...	110.9	99.8	-11.1	-5.4	1,220
June.....	1,581.9	1,173.8	+408.1	...	106.5	97.7	-8.8	...	1,390
July.....	1,688.5	1,379.3	+309.2	...	97.7	91.2	-6.5	...	1,181
August.....	1,688.9	1,253.6	+435.3	-655	112.7	101.0	-11.7	-4.0	2,278
September.....	1,678.4	1,262.0	+416.4	...	104.1	99.2	-4.9	...	1,933
October.....	1,779.8	1,300.1	+479.7	...	109.8	99.5	-10.3	...	1,354
November.....	1,733.1	1,308.5	+424.6	-1,274	106.5	101.3	-5.2	-2.5	1,286
December.....	1,724.8	1,314.5	+410.3	...	104.3	101.7	-2.6	...	1,589
1962									
January.....	1,654.8	1,327.4	+327.4	...	115.1	101.7	-13.4	...	1,872
February.....	1,812.1	1,315.4	+496.7	-585	108.8	101.3	-7.5	-5.6	1,211
March.....	1,674.4	1,339.3	+335.1	...	107.4	98.1	-9.3	...	1,254
April.....	1,802.6	1,363.8	+438.8	...	110.1	107.8	-2.3	...	1,831
May.....	1,782.1	1,386.4	+395.7	-452	106.8	109.9	+3.1	-3.0	1,182
June.....	1,838.3	1,342.4	+495.9	...	108.9	104.4	-4.5	...	1,325
July.....	1,728.9	1,361.8	+367.1	...	116.3	111.2	-5.1	...	1,934
August.....	1,687.3	1,364.2	+323.1	-356	111.6	110.1	-1.5	-3.6	1,386
September.....	1,943.3	1,476.4	+466.9	...	109.9	107.6	-2.3	...	1,037
October.....	1,492.8	1,318.9	+173.9	...	118.6	107.8	-10.8	...	1,805
November.....	1,695.2	1,431.7	+263.5	-793	114.7	109.0	-5.7	-5.3	1,755
December.....	1,838.9	1,371.9	+467.0	...	115.2	109.0	-6.2	...	1,022
1963									
January.....	r982.2	1,093.2	r-111.0	...	116.7	107.7	-9.0	...	1,732
February.....	r2,130.7	1,493.2	r+637.5	r-851	106.5	109.8	+3.3	-4.6	1,228
March.....	1,990.8	1,484.3	+506.5	...	117.0	106.9	-10.1	...	1,023
April.....	1,918.1	1,423.3	+494.8	...	118.0	110.1	-7.9	...	1,275
May.....	1,900.5	1,406.2	+494.3	r-1,262	116.2	113.9	-2.3	-3.0	1,594
June.....	1,813.6	1,410.2	+403.4	...	106.7	112.2	+5.5	...	1,385
July.....	1,779.4	1,469.2	+310.2	...	126.1	114.9	-11.2	...	(NA)
August.....	(NA)	(NA)	(NA)	...	118.4	116.1	-2.3	...	

<sup>1</sup>Includes single direct investment transactions of \$370 million.

<sup>2</sup>Includes \$650 million in special debt payments to the United States.

## Basic Data

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	Other U.S. series with business cycle significance--Continued								
	91. Defense Department obligations, total	92. Military prime contract awards to U.S. business firms	85. Percent change in total U.S. money supply	98. Percent change in money supply and time deposits	93. Free reserves*	81. Index of consumer prices	94. Index of construction contracts, total value	96. Mfrs.' unfilled orders, durable goods industries	97. Backlog of capital appropriations, manufacturing
1960	(Mil. dol.)	(Mil. dol.)	(Percent)	(Percent)	(Mil. dol.)	(1957-59=100)	(1957-59=100)	(Bil. dol.)	(Bil. dol.)
January.....	3,234	1,770	-0.14	-0.14	-375	102.3	93	47.56	...
February.....	3,439	1,740	-0.28	-0.38	-365	102.5	93	46.77	...
March.....	3,368	1,738	-0.28	-0.10	-219	102.6	100	46.00	7.92
April.....	3,362	1,368	-0.14	-0.00	-194	102.9	105	45.32	...
May.....	3,677	1,811	-0.28	-0.05	-33	103.0	97	45.13	...
June.....	3,771	1,687	-0.28	-0.05	+37	103.1	108	44.91	7.68
July.....	5,305	2,231	+0.21	+0.53	+120	103.1	113	44.67	...
August.....	3,824	2,302	+0.36	+0.67	+247	103.3	109	44.50	...
September.....	3,999	2,361	+0.07	+0.38	+414	103.2	107	44.37	7.27
October.....	3,357	1,477	+0.07	+0.47	+480	103.5	117	43.60	...
November.....	4,109	2,127	-0.14	+0.28	+614	103.6	111	43.19	...
December.....	3,583	1,797	+0.28	+0.52	+669	103.8	120	42.89	7.02
1961									
January.....	3,641	1,944	+0.14	+0.56	+696	103.9	108	42.52	...
February.....	4,065	2,153	+0.28	+0.74	+517	104.0	95	42.49	...
March.....	3,537	1,757	+0.28	+0.51	+486	104.0	104	42.51	6.68
April.....	3,381	1,910	+0.21	+0.46	+551	103.9	103	42.97	...
May.....	3,727	1,530	+0.21	+0.64	+53	103.9	102	43.20	...
June.....	3,893	1,993	0.00	+0.36	+549	104.1	111	43.31	6.55
July.....	3,784	2,087	+0.07	+0.45	+530	104.4	110	43.62	...
August.....	5,344	2,232	0.00	+0.32	+537	104.4	116	43.97	...
September.....	4,874	2,158	+0.42	+0.58	+547	104.5	103	44.03	6.58
October.....	4,296	2,651	+0.49	+0.67	+442	104.5	114	44.32	...
November.....	4,121	2,379	+0.49	+0.62	+517	104.5	116	44.66	...
December.....	4,476	2,281	+0.55	+0.57	+419	104.5	119	45.21	6.53
1962									
January.....	4,488	3,073	+0.14	+0.79	+555	104.7	115	45.74	...
February.....	3,990	2,135	-0.27	+0.57	+434	104.9	119	45.96	...
March.....	3,914	2,225	+0.14	+0.82	+382	105.1	131	45.86	6.82
April.....	4,402	1,885	+0.27	+0.69	+441	105.2	121	45.52	...
May.....	4,126	1,808	-0.27	+0.21	+440	105.4	117	45.22	...
June.....	4,019	1,808	-0.07	+0.42	+391	105.4	120	44.90	6.81
July.....	5,026	2,068	+0.07	+0.51	+440	105.5	117	44.85	...
August.....	4,623	2,488	-0.41	+0.04	+439	105.6	118	44.28	...
September.....	3,968	2,242	+0.14	+0.46	+375	105.9	113	43.73	6.87
October.....	4,914	3,089	+0.55	+0.84	+419	105.9	117	43.55	...
November.....	4,936	3,154	+0.55	+0.91	+473	105.9	123	43.03	...
December.....	3,785	1,758	+0.68	+1.03	+268	105.8	138	r43.00	7.29
1963									
January.....	4,714	2,390	+0.54	+0.98	+384	106.2	121	43.40	...
February.....	4,050	2,674	-0.07	+0.44	+300	106.2	130	44.01	...
March.....	3,593	2,157	+0.20	+0.72	+271	106.3	118	45.43	r7.06
April.....	4,031	1,786	+0.34	+0.52	+313	106.2	125	46.07	...
May.....	4,682	2,165	0.00	+0.44	+248	106.4	144	46.88	...
June.....	4,316	1,962	+0.27	+0.47	+141	106.7	135	r46.52	7.46
July.....	(Na)	(Na)	+0.60	+0.75	r+158	107.1	126	r46.01	...
August.....			p-0.13	p+0.39	p+133	(Na)	(Na)	p45.97	...
September.....									
October.....									
November.....									
December.....									

Table 1.--BASIC DATA FOR BUSINESS CYCLE SERIES: JANUARY 1960 TO PRESENT--Continued

Series are seasonally adjusted except those that appear to contain no seasonal movement. Unadjusted series are indicated by an asterisk (\*). Low values preceding current highs are indicated by (L) and current highs, by (H); the reverse is true for inverse series (series 3, 4, 5, 14, 15, 40, 43, and 45). Series numbers are for identification only and do not reflect series relationships or order. Complete titles and sources are shown on the back cover. The "r" indicates revised; "p", preliminary; "e", estimated; "a", anticipated; and "NA", not available.

Year and month	International comparisons of industrial production							
	121. OECD, <sup>1</sup> European countries, index of industrial production	122. United Kingdom, index of industrial production	123. Canada, index of industrial production	47. United States, index of industrial production	125. West Germany, index of industrial production	126. France, index of industrial production	127. Italy, index of industrial production	128. Japan, index of industrial production
1960	(1957-59=100)	(1957-59=100)	(1957-59=100)	(1957-59=100)	(1957-59=100)	(1957-59=100)	(1957-59=100)	(1957-59=100)
January.....	111	109	109	112	113	107	118	132
February.....	112	109	107	111	113	108	122	136
March.....	114	110	108	110	115	108	123	137
April.....	113	112	105	110	115	110	123	140
May.....	114	112	105	110	116	110	124	140
June.....	116	111	105	110	118	111	126	143
July.....	118	111	104	109	118	112	125	145
August.....	116	112	104	109	115	112	127	148
September.....	116	112	105	108	118	115	127	151
October.....	117	112	105	107	120	114	126	151
November.....	118	110	105	105	120	115	129	157
December.....	118	112	105	104	122	114	129	158
1961								
January.....	117	109	104	103	124	115	130	162
February.....	119	110	105	103	125	116	134	160
March.....	119	110	105	104	126	116	134	166
April.....	120	111	107	107	126	116	134	166
May.....	119	110	107	109	124	117	136	172
June.....	120	113	109	111	121	117	136	175
July.....	120	113	109	112	122	118	138	179
August.....	119	111	111	113	121	118	137	182
September.....	120	110	112	112	124	119	140	183
October.....	121	109	112	114	123	119	145	187
November.....	122	109	114	115	124	119	149	190
December.....	123	109	114	116	128	122	148	191
1962								
January.....	122	108	113	115	126	122	149	190
February.....	124	110	115	116	129	123	151	188
March.....	123	111	116	117	125	124	149	193
April.....	124	110	116	118	128	123	151	194
May.....	125	113	117	118	129	124	153	196
June.....	124	114	118	118	130	123	147	194
July.....	125	113	118	119	130	125	151	191
August.....	r126	114	119	119	131	125	149	194
September.....	127	115	119	120	132	126	150	194
October.....	r127	110	119	119	132	128	153	192
November.....	r128	113	120	120	133	128	158	192
December.....	127	110	120	119	132	126	160	191
1963								
January.....	r126	110	120	119	129	127	158	193
February.....	126	111	121	120	128	127	155	199
March.....	126	113	122	121	132	117	161	197
April.....	r130	114	r123	122	r133	129	164	206
May.....	130	115	r123	124	r133	131	164	203
June.....	132	115	123	126	r138	134	(NA)	(NA)
July.....	(NA)	(NA)	(NA)	126	135	(NA)		
August.....				p126	(NA)			
September.....								
October.....								
November.....								
December.....								

<sup>1</sup>Organization for Economic Cooperation and Development.

## Analytical Measures

Table 2.--RECENT CHANGES FOR BUSINESS CYCLE SERIES

To facilitate interpretations of cyclical movements, those series that usually fall when general business activity rises and rise when business falls are inverted so that rises are shown as declines and declines as rises (see series 3, 4, 5, 14, 15, 40, 43, and 45). The month-to-month percent changes are calculated in the usual way but the signs are reversed; for example, if the rate decreased by 0.6 percent, the sign of this drop is reversed and shown as +0.6.

Series	Measure of change	Avg. change, 1948-1961 <sup>1</sup>	1963									
			Dec. to Jan.	Jan. to Feb.	Feb. to Mar.	Mar. to Apr.	Apr. to May	May to June	June to July	July to Aug.	Aug. to Sept. <sup>2</sup>	
<b>NBER LEADING INDICATORS</b>												
1. Average workweek of production workers, manufacturing.....	Percent..	0.5	+0.5	-0.2	+0.5	-1.0	+1.0	0.0	-0.2	-0.2	-0.2	
2. Accession rate, manufacturing.....	..do.....	6.0	-2.6	+5.4	-2.6	+7.9	-7.3	+2.6	-2.6	NA		
30. Nonagri. placements, all industries.....	..do.....	3.4	+5.5	-2.0	+0.5	+5.8	-3.6	-7.3	+6.5	-5.4		
3. Layoff rate, manufacturing (inverted).....	..do.....	11.9	0.0	+10.0	0.0	0.0	0.0	+5.6	-5.9	NA		
4. Number of persons on temporary lay-off, all industries (inverted).....	..do.....	19.4	-57.0	+37.4	+3.6	-35.2	+40.4	+2.3	-52.9	-3.1		
5. Avg. weekly initial claims for unemployment insurance, State (inverted).....	..do.....	7.0	+0.3	+6.6	+6.1	-4.0	+0.3	-0.3	+0.7	+0.3	+9.5	
6. Value of manufacturers' new orders, durable goods industries.....	..do.....	5.6	+4.3	+2.3	+2.3	+2.3	-1.1	-3.5	+0.5	-2.4		
24. Value of manufacturers' new orders, machinery and equipment industries.....	..do.....	6.1	+0.2	+2.4	-0.8	+2.9	+2.2	+0.2	-0.8	-0.8		
9. Construction contracts awarded for commercial and industrial buildings.....	..do.....	12.4	+5.8	+4.5	-17.2	-2.7	+26.6	+12.6	-17.0	NA		
10. Contracts and orders for plant and equipment.....	..do.....	6.4	-3.5	+2.4	-2.2	+4.1	+5.9	-2.1	-2.5	NA		
11. Newly approved capital appropriations, 602 manufacturing corporations <sup>3</sup> .....	..do.....	11.2	...	-20.7	...	...	+20.5					
7. New private nonfarm dwelling units started.....	..do.....	7.3	-14.5	+2.7	+14.5	+2.6	0.0	-2.3	-0.4	-3.7		
29. Index of new private housing units authorized by local bldg. permits.....	..do.....	3.9	-3.9	-0.6	+3.3	-1.4	+5.9	+2.2	-4.5	-1.2		
12. Net change in business population, operating businesses <sup>3</sup> .....	Thous....	3	...	0.0	...	...	+1.0					
13. Number of new business incorporations.	Percent..	3.0	-2.1	+6.5	+1.3	-2.2	+3.3	-1.5	-1.0	NA		
14. Current liabilities of business failures (inverted).....	..do.....	16.3	-69.4	+41.2	-3.8	+4.0	-36.3	+26.9	-59.2	+59.0		
15. No. of business failures with liabilities of \$100,000 and over (inv.).....	..do.....	17.3	-32.4	+14.3	+2.4	+2.4	-35.0	+29.6	0.0	-10.5		
16. Corporate profits after taxes <sup>3</sup> .....	..do.....	7.7	...	-0.4	...	...	+5.5					
17. Price per unit of labor cost index.....	..do.....	0.7	-0.2	-0.7	+0.8	-0.2	+1.5	+1.0	-0.9	-1.3		
18. Profits (before taxes) per dollar of sales, all mfg. corporations <sup>3</sup> .....	..do.....	7.7	...	-4.8	...	...	+7.6					
22. Ratio, profits(after taxes) to income originating, corporate, all indus. <sup>3</sup> .....	..do.....	5.8	...	0.0	...	...	+4.4					
19. Index of stock prices, 500 stocks.....	..do.....	2.6	+3.9	+1.3	-0.4	+4.7	+2.0	0.0	-1.5	+2.8	+3.0	
21. Change in bus. inventories, farm and nonfarm, after val. adjustment <sup>3</sup> .....	Ann. rate, bil. dol.	3.1	...	+1.1	...	...	-0.8					
31. Change in book value of mfg. and trade inventories, total <sup>4</sup> .....	..do.....	4.0	+0.2	-1.4	+2.8	-1.9	+1.0	+3.7	-1.5	NA		
20. Change in book value of mfrs.' inventories, purchased materials <sup>4</sup> .....	..do.....	1.7	+0.4	-0.1	-0.7	+0.7	-1.3	+1.4	+1.2	NA		
37. Purchased materials, percent reporting higher inventories.....	Percent..	7.3	-4.2	+4.3	-4.2	+6.5	+16.3	0.0	-3.5	-9.1		
26. Buying policy, prod. mtls., percent report. commitments 60 days or more..	..do.....	6.2	-2.0	+10.0	-1.8	-1.9	-1.9	+9.6	-5.3	+1.9		
32. Vendor performance, percent reporting slower deliveries.....	..do.....	11.3	+4.2	+4.0	+3.8	+11.1	-3.3	-6.9	-22.2	+14.3		
25. Change in mfrs.' unfilled orders, durable goods industries <sup>4</sup> .....	Bil. dol.	0.46	+0.26	+0.30	+0.81	-0.78	+0.17	-1.17	-0.14	+0.46		
23. Index of industrial materials prices..	Percent..	2.2	-0.3	-0.4	-0.7	+0.1	+0.7	-1.4	+0.3	0.0	-0.3	
<b>NBER ROUGHLY COINCIDENT INDICATORS</b>												
41. Number of employees in nonagricultural establishments.....	..do.....	0.4	+0.2	+0.2	+0.4	+0.3	+0.3	+0.2	+0.3	-0.1		
42. Total nonagricultural employment, labor force survey.....	..do.....	0.4	-0.4	+0.4	+0.6	+0.4	-0.3	+0.1	+0.7	-0.1		
43. Unemployment rate, total (inverted).....	..do.....	4.7	-4.2	-5.5	+8.2	-1.1	-4.6	+4.2	+0.9	+2.3		
40. Unemploy. rate, married males (inv.).....	..do.....	5.8	-6.7	-6.0	+13.4	+3.7	0.0	+7.4	-0.6	+5.7		
45. Avg. weekly insured unemployment rate, State programs (inverted).....	..do.....	5.6	-1.0	+3.1	+6.4	+8.2	+1.7	+10.9	-15.6	-1.5	+4.8	

See footnotes at end of table.

Table 2.--RECENT CHANGES FOR BUSINESS CYCLE SERIES--Continued

To facilitate interpretations of cyclical movements, those series that usually fall when general business activity rises and rise when business falls are inverted so that rises are shown as declines and declines as rises (see series 3, 4, 5, 14, 15, 40, 43, and 45). The month-to-month percent changes are calculated in the usual way but the signs are reversed; for example, if the rate decreased by 0.6 percent, the sign of this drop is reversed and shown as +0.6.

Series	Measure of change	Avg. change, 1948- 1961 <sup>1</sup>	1963									
			Dec. to Jan.	Jan. to Feb.	Feb. to Mar.	Mar. to Apr.	Apr. to May	May to June	June to July	July to Aug.	Aug. to Sept. <sup>2</sup>	
<b>NBER ROUGHLY COINCIDENT INDICATORS--Con.</b>												
46. Index of help-wanted advertising in newspapers.....	Percent..	3.3	+2.4	+3.1	-2.0	+1.7	-4.3	-1.3	+1.6	-2.3		
47. Index of industrial production.....	do.....	1.2	+0.1	+0.8	+0.9	+1.0	+1.6	+1.0	+0.6	-0.7		
50. Gross national product in 1954 dol. <sup>3</sup> .....	do.....	1.4	...	+0.8	...	...	+0.8					
49. Gross national product in cur. dol. <sup>3</sup> .....	do.....	1.9	...	+1.2	...	...	+1.4					
57. Final sales (series 49 minus 21) <sup>3</sup> .....	do.....	1.6	...	+1.0	...	...	+1.5					
51. Bank debits outside NYC, 343 centers.....	do.....	1.6	+4.0	-2.9	+0.5	+4.9	-2.2	-2.1	+8.1	-3.6		
52. Personal income.....	do.....	0.7	+0.4	-0.2	+0.4	+0.6	+0.6	+0.5	+0.3	+0.2		
53. Labor income in mining, manufacturing, and construction.....	do.....	1.1	-0.1	+0.6	+0.6	+1.4	+1.2	+0.7	0.0	+0.5		
54. Sales of retail stores.....	do.....	0.8	+0.7	-0.1	-0.1	-0.4	-0.4	+1.4	+1.3	0.0		
55. Index of wholesale prices except farm products and foods.....	do.....	0.3	-0.2	0.0	0.0	-0.3	+0.3	+0.3	+0.1	+0.1	-0.2	
<b>NBER LAGGING INDICATORS</b>												
61. Business expenditures on new plant and equipment, total <sup>3</sup> .....	do.....	3.6	...	-2.6	...	...	+3.0	...	...	<sup>5</sup> +5.0		
62. Index of labor cost per unit of output, total manufacturing.....	do.....	0.7	-0.5	+0.7	-1.1	+0.1	-0.8	-0.4	+1.1	+1.2		
63. Index of labor cost per unit of output, total GNP <sup>3</sup> .....	do.....	1.0	...	+0.5	...	...	+1.1					
64. Book value of mfrs.' inventories, all manufacturing industries.....	do.....	0.9	+0.2	+0.3	+0.3	+0.3	+0.5	+0.7	+0.3	NA		
65. Book value of mfrs.' inventories of finished goods, all mfg. industries.....	do.....	1.0	0.0	0.0	+0.9	0.0	+0.4	+1.3	-0.4	NA		
66. Consumer installment debt.....	do.....	1.2	+1.0	+0.9	+0.8	+1.1	+0.9	+0.9	+1.0	NA		
67. Bank rates on short-term business loans, 19 cities <sup>3</sup> .....	do.....	3.0	...	-0.4	...	...	+0.2					
<b>OTHER U.S. SERIES WITH BUSINESS CYCLE SIGNIFICANCE</b>												
86. Exports, excluding military aid shipments, total.....	do.....	3.7	-46.6	+116.9	-6.6	-3.7	-0.9	-4.6	-1.9	NA		
87. General imports, total.....	do.....	3.5	-20.3	+36.6	-0.6	-4.1	-1.2	+0.3	+4.2	NA		
88. Merchandise trade balance <sup>4</sup> .....	Mil. dol.	58.6	-578.0	+748.5	-131.0	-11.7	-0.5	-90.9	-93.2	NA		
89. Excess of receipts or payments in U.S. balance of payments <sup>3</sup> .....	do.....	332	...	-58	...	...	-411					
82. Federal cash payments to the public.....	Percent..	7.2	+1.3	-8.7	+9.9	+0.9	-1.5	-8.2	+18.2	-6.1		
83. Federal cash receipts from the public.....	do.....	7.5	-1.2	+1.9	-2.6	+3.0	+3.5	-1.5	+2.4	+1.0		
84. Federal cash surplus or deficit <sup>4</sup> .....	Ann.rate, bil.dol.	5.7	-2.8	+12.3	-13.4	+2.2	+5.6	+7.8	-16.7	+8.9		
95. Surplus or deficit, Federal income and product account <sup>3</sup> .....	do.....	3.2	...	+0.7	...	...	+1.6					
90. Defense Dept. obligations, procurement.....	Percent..	25.4	+69.5	-29.1	-16.7	+24.6	+25.0	-13.1	NA			
91. Defense Dept. obligations, total.....	do.....	15.6	+24.5	-14.1	-11.3	+12.2	+16.1	-7.8	NA			
92. Military prime contract awards to U.S. business firms.....	do.....	29.2	+35.9	+11.9	-19.3	-17.2	+21.2	-9.4	NA			
85. Change in money supply excluding time deposits <sup>4</sup> .....	do.....	0.22	-0.14	-0.61	+0.27	+0.14	-0.34	+0.27	+0.33	-0.73		
93. Free reserves <sup>4</sup> .....	Mil. dol.	138	+116	-84	-29	+42	-65	-107	+17	-25		
81. Index of consumer prices.....	Percent..	0.3	+0.4	0.0	+0.1	-0.1	+0.2	+0.3	+0.4	NA		
94. Index of construc. contracts, total.....	do.....	8.3	-12.3	+7.4	-9.2	+5.9	+15.2	-6.3	-6.7	NA		
96. Mfrs.' unfilled orders, dur. goods.....	do.....	2.1	+0.7	+1.4	+3.2	+1.4	+1.8	-0.8	-1.1	-0.1		
97. Backlog of cap. appropriations, mfg. <sup>3</sup> .....	do.....	6.3	...	-3.2	...	...	+5.7					
98. Change in money supply including time deposits <sup>4</sup> .....	do.....	0.19	-0.05	-0.54	+0.28	-0.20	-0.08	+0.03	+0.28	-0.36		

<sup>1</sup>This average is based on month-to-month (or quarter-to-quarter) changes without regard to sign. The period varies among the series, beginning with the earliest date shown in chart 1 and ending on the date a revision or new seasonal adjustment made new computations feasible. <sup>2</sup>Percentage changes cover part of this period only. <sup>3</sup>Quarterly series; figures show change from previous quarter and are placed in middle month of quarter. Thus the figure for GNP (series 49) shown in the Jan.-Feb. column refers to the change from the 4th quarter of 1962 to the 1st quarter of 1963. <sup>4</sup>Figures are the month-to-month (quarter-to-quarter) differences in the figures shown in table 1. <sup>5</sup>Anticipated. Percent change from 3rd quarter to 4th quarter, based on anticipated data is +3.0.

## Analytical Measures

Table 3.--DISTRIBUTION OF HIGHS IN BUSINESS CYCLE INDICATORS DURING RECENT MONTHS COMPARED WITH PERIODS AROUND PREVIOUS BUSINESS CYCLE PEAKS

Number of months before benchmark date that high was reached	Number of series that reached a high before benchmark dates--							
	Business cycle peak				3d month before business cycle peak			
	Nov. 1948	July 1953	July 1957	May 1960	Aug. 1948	Apr. 1953	Apr. 1957	Feb. 1960
NBER LEADING INDICATORS								
8 months or more.....	12	7	22	14	11	3	20	12
7 months.....	1	1	...	2	1	4	...	1
6 months.....	...	3	1	1	...	...	1	...
5 months.....	4	1	...	3	...	2	1	1
4 months.....	1	...	...	2	1	2	...	2
3 months.....	...	2	...	1	...	3	1	1
2 months.....	...	2	...	...	4	1	...	3
1 month.....	...	...	...	...	1	...	...	2
Benchmark month.....	...	3	...	...	...	4	...	1
Number of series used.....	<sup>1</sup> 18	<sup>2</sup> 19	23	23	<sup>1</sup> 18	<sup>2</sup> 19	23	23
Percent of series high on benchmark date.	0	16	0	0	0	21	0	4
NBER ROUGHLY COINCIDENT INDICATORS								
8 months or more.....	3	1	2	1	1	...	1	1
7 months.....	...	...	...	...	2	...	...	...
6 months.....	...	...	...	...	...	...	1	...
5 months.....	...	1	1	...	...	2	...	...
4 months.....	4	1	3	2	...	...	1	1
3 months.....	1	...	...	3	...	...	...	...
2 months.....	2	2	...	...	...	1	2	...
1 month.....	...	3	...	2	4	4	3	3
Benchmark month.....	1	3	5	3	4	4	3	6
Number of series used.....	11	11	11	11	11	11	11	11
Percent of series high on benchmark date.	9	27	45	27	36	36	27	55
Number of months before benchmark date that high was reached	6th month before business cycle peak				Current expansion			
	May 1948	Jan. 1953	Jan. 1957	Nov. 1959	May 1963	June 1963	July 1963	Aug. 1963
	NBER LEADING INDICATORS							
8 months or more.....	6	2	17	4	14	12	12	7
7 months.....	1	1	1	4	...	...	...	...
6 months.....	...	2	1	4	...	...	...	...
5 months.....	4	1	1	2	...	...	...	2
4 months.....	2	4	...	4	...	...	2	2
3 months.....	...	1	1	...	...	2	2	1
2 months.....	2	2	1	1	2	2	2	3
1 month.....	2	3	...	2	2	2	5	...
Benchmark month.....	1	3	1	2	5	5	...	1
Number of series used.....	<sup>1</sup> 18	<sup>2</sup> 19	23	23	23	23	23	16
Percent of series high on benchmark date.	6	16	4	9	22	22	0	6
NBER ROUGHLY COINCIDENT INDICATORS								
8 months or more.....	1	...	1	...	2	3	2	2
7 months.....	...	...	...	...	2	...	...	...
6 months.....	...	...	...	...	...	...	...	...
5 months.....	...	...	...	4	...	...	...	...
4 months.....	4	...	...	2	1	...	...	...
3 months.....	...	...	2	...	...	...	...	...
2 months.....	...	2	...	...	...	2	...	1
1 month.....	1	3	5	2	2	...	1	4
Benchmark month.....	5	6	3	3	4	6	8	4
Number of series used.....	11	11	11	11	11	11	11	11
Percent of series high on benchmark date.	45	55	27	27	36	55	73	36

All quarterly series, 1 leading monthly series (series 15), and 1 roughly coincident series (series 40) are omitted from the distribution.

<sup>15</sup> series were not available.

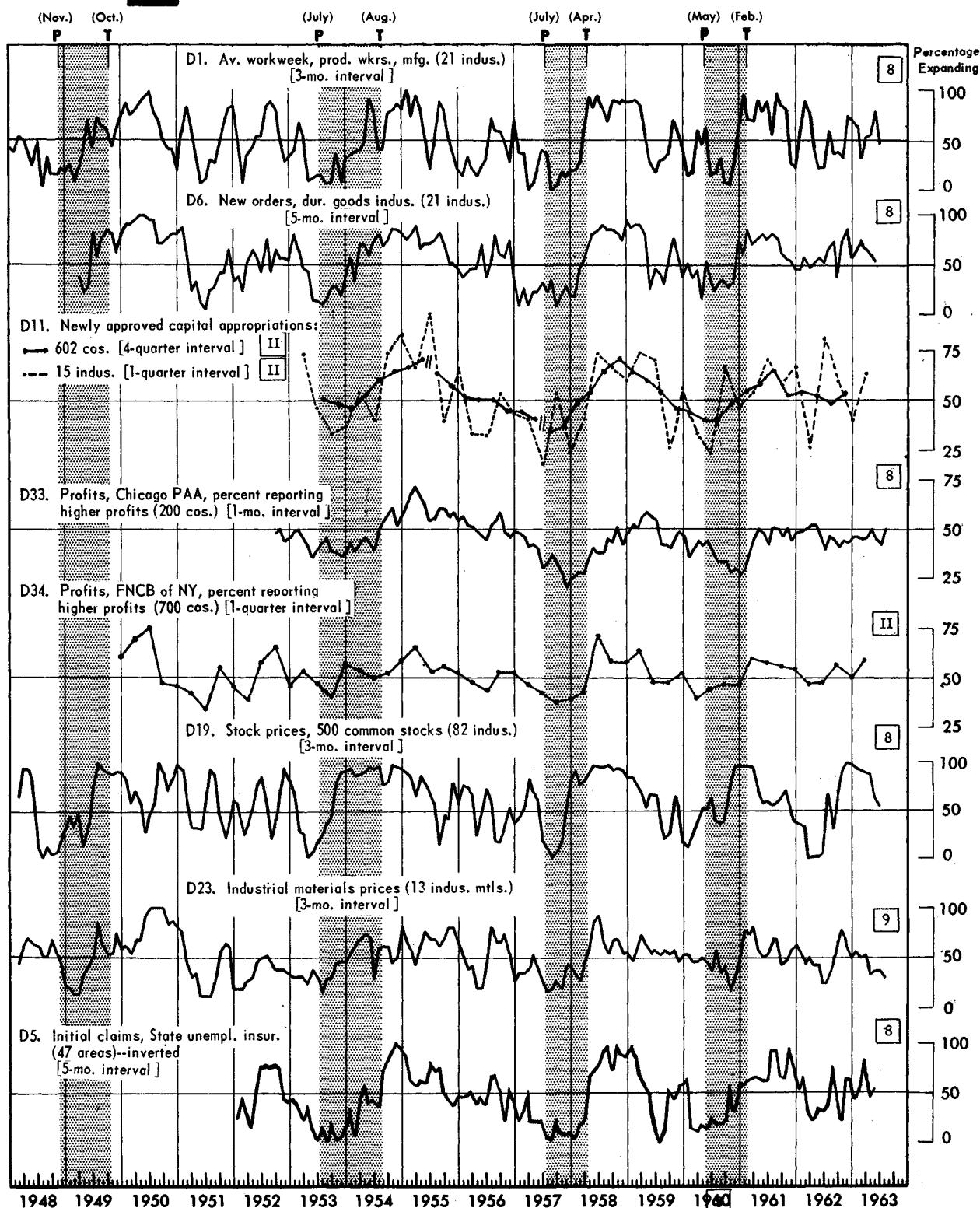
<sup>22</sup> series were not available and 2 series were omitted because their peaks were reached during the Korean War and such peaks were disregarded in this distribution.

CHART 2

## DIFFUSION INDEXES: 1948 TO PRESENT

A

## NBER Leading Indicators



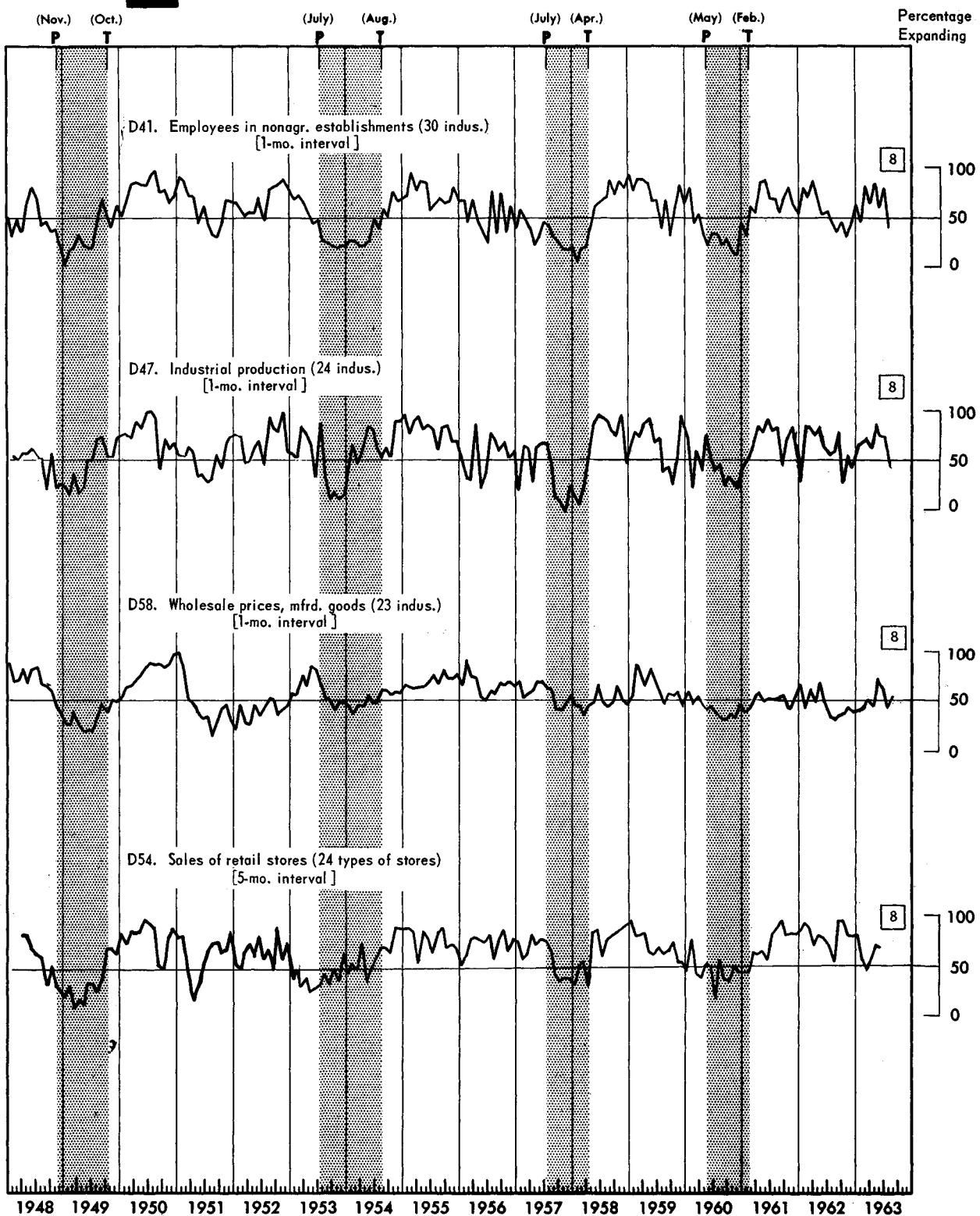
See "How to Read Charts 1, 2, and 3," page 5.

## CHART 2

## DIFFUSION INDEXES: 1948 TO PRESENT—Con.

B

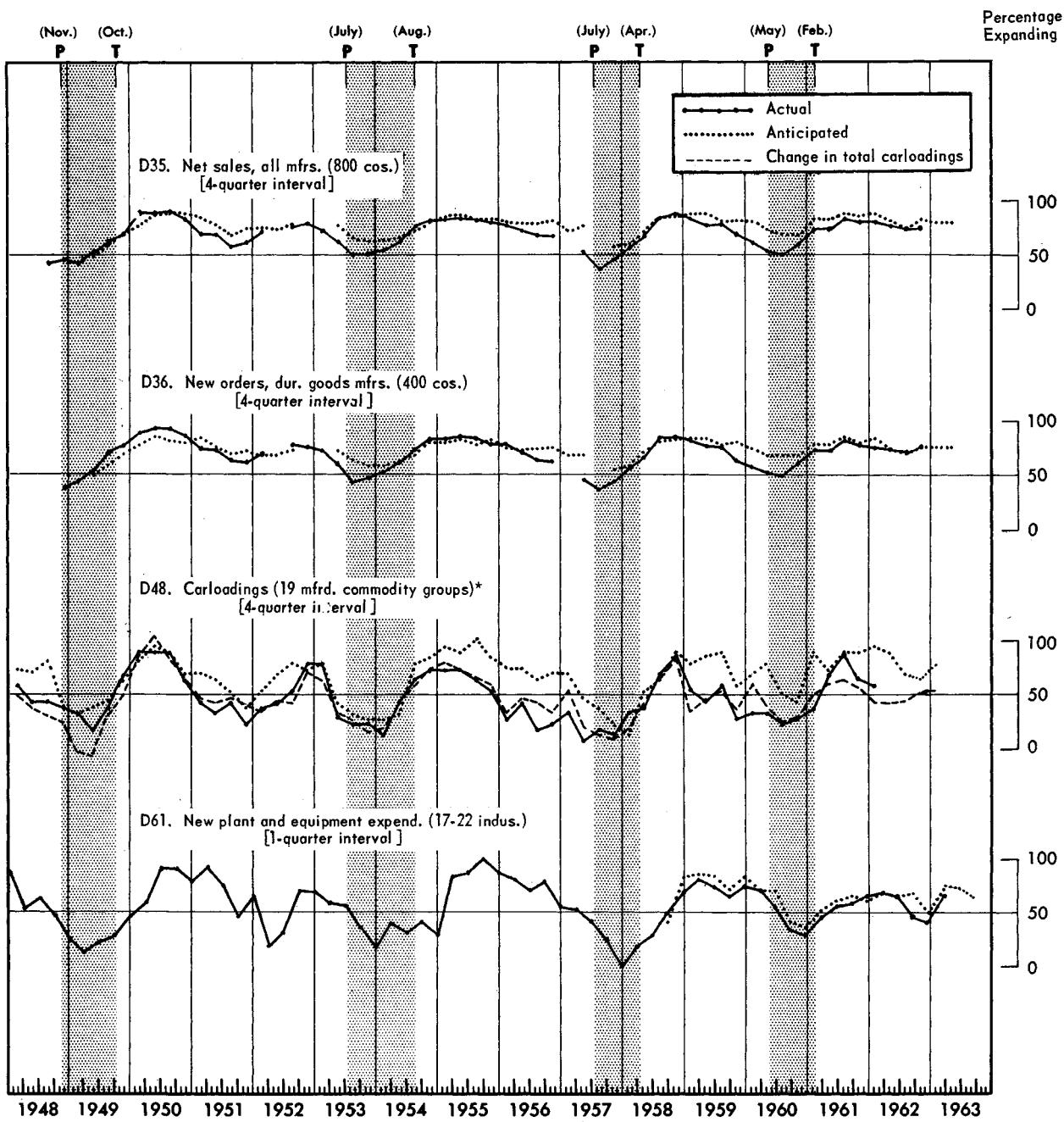
## NBER Roughly Coincident Indicators



See "How to Read Charts 1, 2, and 3," page 5.

## CHART 3

## DIFFUSION INDEXES, ACTUAL AND ANTICIPATED: 1948 TO PRESENT



Data are centered within intervals. Latest data are as follows:

Series number and date of survey	Latest interval shown	
	Actual	Anticipated
D35, D36 (July 1963)	2nd Q 1962 - 2nd Q 1963	4th Q 1962 - 4th Q 1963
D48 (June 1963)	3rd Q 1961 - 3rd Q 1962	3rd Q 1962 - 3rd Q 1963
D61 (August 1963)	1st Q 1963 - 2nd Q 1963	3rd Q 1963 - 4th Q 1963

\*Increase of 500,000 carloadings plotted at 100; no change at 50; decrease of 500,000 carloadings at 0.

## Analytical Measures

Table 4.--DIFFUSION INDEXES (PERCENT RISING) FOR 12 MAJOR ECONOMIC ACTIVITIES: JANUARY 1960 TO PRESENT

Numbers are centered within intervals; 1-month figures are placed on latest month; 3-month figures are placed on the 3d month and 5-month figures are placed on the 4th month of span; 4-quarter figures are centered in the middle quarter; 1-quarter figures are placed in the 1st month of the 2d quarter. Seasonally adjusted components are used except in indexes D11a, D19, D23, and D33, which require no adjustment, and D34 and D58, which are adjusted only for the index. Table 6 identifies the components for most of the indexes shown. The "r" indicates revised; "p", preliminary; and "NA", not available.

Year and month	NBER Leading indexes						
	D1. Average workweek, manufacturing (21 industries)		D6. Value of manufacturers' new orders, durable goods industries (21 industries)		D11. Newly approved capital appropriations		D33. Profits, Chicago PAA (200 companies)
	1-month interval	3-month interval	1-month interval	5-month interval	a. 602 companies	b. 15 industries	
1960	Revised <sup>1</sup>	Revised <sup>1</sup>					
January.....	40.5	38.1	28.6	38.1	...	56.7	46
February.....	14.3	14.3	61.9	52.4	44	...	36
March.....	35.7	19.0	14.3	38.1	...	...	40
April.....	35.7	59.5	57.1	45.2	...	33.3	44
May.....	81.0	45.2	54.8	16.7	40	...	42
June.....	19.0	64.3	28.6	54.8	...	...	44
July.....	50.0	14.3	38.1	33.3	...	23.3	39
August.....	31.0	16.7	71.4	23.8	40	...	34
September.....	19.0	31.0	33.3	33.3	...	...	34
October.....	83.3	7.1	28.6	33.3	...	66.7	34
November.....	7.1	4.8	61.9	28.6	48	...	28
December.....	7.1	23.8	28.6	33.3	...	...	30
1961							
January.....	95.2	66.7	52.4	76.2	...	46.7	27
February.....	71.4	95.2	47.6	61.9	54	...	31
March.....	54.8	71.4	78.6	85.7	...	...	37
April.....	81.0	69.0	52.4	71.4	...	53.3	46
May.....	45.2	90.5	59.5	76.2	58	...	50
June.....	90.5	78.6	57.1	81.0	...	...	48
July.....	64.3	88.1	59.5	76.2	...	70.0	42
August.....	73.8	54.8	73.8	81.0	64	...	51
September.....	38.1	97.6	57.1	78.6	...	...	50
October.....	85.7	85.7	57.1	61.9	...	56.7	47
November.....	66.7	81.0	57.1	57.1	52	...	50
December.....	23.8	26.2	28.6	54.8	...	...	44
1962							
January.....	14.3	21.4	71.4	47.6	...	66.7	48
February.....	73.8	59.5	57.1	47.6	54	...	49
March.....	73.8	88.1	45.2	57.1	...	...	50
April.....	76.2	78.6	50.0	47.6	...	26.7	52
May.....	21.4	40.5	42.9	52.4	52	...	52
June.....	28.6	21.4	38.1	57.1	...	...	48
July.....	35.7	21.4	81.0	52.4	...	80.0	40
August.....	47.6	59.5	33.3	66.7	48	...	46
September.....	81.0	35.7	33.3	71.4	...	...	45
October.....	7.1	38.1	71.4	38.1	...	60.0	42
November.....	59.5	31.0	54.8	76.2	53	...	44
December.....	59.5	73.8	38.1	85.7	...	...	43
1963							
January.....	52.4	71.4	57.1	57.1	...	40.0	46
February.....	73.8	64.3	61.9	66.7	...	...	46
March.....	40.5	31.0	57.1	76.2	...	...	45
April.....	16.7	52.4	57.1	r71.4	...	63.3	46
May.....	81.0	54.8	69.0	r57.1	...	...	50
June.....	47.6	78.6	r40.5	p52.4	...	...	46
July.....	45.2	p47.6	r57.1	...	...	...	42
August.....	p47.6		p26.2	...	...	...	50
September.....							
October.....							
November.....							
December.....							

<sup>1</sup>See "New Features and Changes For This Issue," page ii.

# Analytical Measures

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Table 4.--DIFFUSION INDEXES (PERCENT RISING) FOR 12 MAJOR ECONOMIC ACTIVITIES: JANUARY 1960 TO PRESENT--Continued

Numbers are centered within intervals; 1-month figures are placed on latest month; 3-month figures are placed on the 3d month and 5-month figures are placed on the 4th month of span; 4-quarter figures are centered in the middle quarter; 1-quarter figures are placed in the 1st month of the 2d quarter. Seasonally adjusted components are used except in indexes D11a, D19, D23, and D33, which require no adjustment, and D34 and D58, which are adjusted only for the index. Table 6 identifies the components for most of the indexes shown. The "r" indicates revised; "p", preliminary; and "NA", not available.

Year and month	NBER Leading indexes--Continued						
	D34. Profits, mfg., FNCF (around 700 corporations)	D19. Index of stock prices, 500 common stocks (80 industries) <sup>1</sup>		D23. Index of industrial materials prices (13 industrial materials)		D5. Initial claims for unemployment insurance, State programs, week ended nearest the 22nd (47 areas)	
	1-quarter interval	1-month interval	3-month interval	1-month interval	3-month interval	1-month interval	5-month interval
1960							
January.....	52	28.5	27.1	69.2	53.8	34.0	59.6
February.....	...	11.2	11.8	42.3	53.8	54.8	63.8
March.....	...	33.5	27.6	46.2	46.2	10.6	14.9
April.....	40	52.4	41.2	53.8	46.2	47.9	11.7
May.....	...	36.5	52.4	50.0	50.0	38.3	17.0
June.....	...	75.9	50.6	57.7	46.2	37.2	14.9
July.....	45	32.9	63.5	46.2	38.5	55.3	26.6
August.....	...	76.5	38.8	46.2	57.7	17.0	23.4
September.....	...	15.3	36.5	42.3	34.6	68.1	20.2
October.....	47	23.5	42.4	23.1	42.3	42.6	21.3
November.....	...	89.4	76.5	46.2	15.4	36.2	57.4
December.....	...	80.7	93.8	26.9	30.8	53.2	31.9
1961							
January.....	47	87.0	96.3	38.5	46.2	59.6	57.4
February.....	...	96.3	96.3	69.2	76.9	31.9	59.6
March.....	...	86.0	95.1	80.8	73.1	80.9	61.7
April.....	60	72.6	93.9	65.4	80.8	40.4	66.0
May.....	...	81.1	70.7	53.8	57.7	48.9	68.1
June.....	...	40.2	57.3	46.2	50.0	58.5	66.0
July.....	58	42.1	57.9	50.0	53.8	51.1	61.7
August.....	...	81.1	54.9	76.9	69.2	61.7	93.6
September.....	...	39.6	55.5	53.8	69.2	46.8	93.6
October.....	56	45.7	62.2	38.5	42.3	78.7	68.1
November.....	...	87.8	72.6	30.8	46.2	74.5	63.8
December.....	...	56.1	52.4	65.4	57.7	23.4	91.5
1962							
January.....	54	26.2	39.6	73.1	61.5	57.4	74.5
February.....	...	74.4	37.8	34.6	53.8	83.0	51.1
March.....	...	48.2	32.9	46.2	42.3	46.8	66.0
April.....	47	9.1	0.0	38.5	50.0	46.8	31.9
May.....	...	1.2	1.2	53.8	42.3	40.4	21.3
June.....	...	1.2	1.2	23.1	42.3	14.9	34.0
July.....	48	67.7	8.5	30.8	23.1	68.1	31.9
August.....	...	78.0	67.1	42.3	23.1	57.4	38.3
September.....	...	34.8	31.1	50.0	42.3	44.7	78.7
October.....	56	6.7	72.6	57.7	65.4	46.8	48.9
November.....	...	98.8	90.2	69.2	79.2	72.3	22.3
December.....	...	84.8	98.8	37.5	62.5	27.7	63.8
1963							
January.....	50	97.6	97.6	58.3	50.0	36.2	63.8
February.....	...	79.3	93.8	66.7	58.3	87.2	44.7
March.....	...	43.8	91.2	46.2	50.0	47.9	53.2
April.....	59	91.2	90.0	50.0	53.8	44.7	83.0
May.....	...	85.0	88.0	46.2	34.6	48.9	46.8
June.....	...	51.9	62.5	65.4	38.5	71.3	53.2
July.....	...	29.4	54.4	34.6	38.5	46.8	
August.....	...	75.0		46.2	230.8	55.3	
September.....				234.6			
October.....							
November.....							
December.....							

<sup>1</sup>The diffusion index is based on 86 components through January 1960; on 85 components, February 1960 to November 1960; on 82 components, December 1960 to February 1963; and on 80 components thereafter. 19 components and 5 composites, representing an additional 22 components, are shown in the direction-of-change table (table 6C).

<sup>2</sup>Average for September 13th, 16th, and 17th, 1963.

## Analytical Measures

Table 4.--DIFFUSION INDEXES (PERCENT RISING) FOR 12 MAJOR ECONOMIC ACTIVITIES: JANUARY 1960 TO PRESENT--Continued

Numbers are centered within intervals: 1-month figures are placed on latest month; 3-month figures are placed on the 3d month and 5-month figures are placed on the 4th month of span; 4-quarter figures are centered in the middle quarter; 1-quarter figures are placed in the 1st month of the 2d quarter. Seasonally adjusted components are used except in indexes D11a, D19, D23, and D33, which require no adjustment, and D34 and D58, which are adjusted only for the index. Table 6 identifies the components for most of the indexes shown. The "r" indicates revised; "p", preliminary; and "NA", not available.

Year and month	NBER Roughly Coincident indexes						
	D41. Number of employees in nonsagricultural establishments (30 industries)		D47. Index of industrial production (24 industries)		D54. Sales of retail stores (24 types of stores)		D58. Index of wholesale prices (23 mfg. indus.)
	1-month interval	3-month interval	1-month interval	3-month interval	1-month interval	5-month interval	1-month interval
1960	Revised <sup>1</sup>	Revised <sup>1</sup>			Revised <sup>1</sup>	Revised <sup>1</sup>	
January.....	65.0	85.0	70.8	75.0	47.9	45.8	60.3
February.....	80.0	71.7	20.8	43.8	43.8	77.1	45.6
March.....	46.7	56.7	58.3	41.7	45.8	43.8	56.8
April.....	53.3	43.3	39.6	68.8	89.6	39.6	46.7
May.....	35.0	33.3	75.0	66.7	4.2	52.1	40.4
June.....	23.3	23.3	54.2	66.7	66.7	50.0	45.4
July.....	35.0	23.3	39.6	41.7	45.8	18.8	39.6
August.....	35.0	26.7	45.8	20.8	45.8	56.3	32.5
September.....	23.3	33.3	25.0	20.8	45.8	37.5	32.0
October.....	30.0	25.0	33.3	16.7	79.2	35.4	36.9
November.....	18.3	18.3	27.1	12.5	22.9	50.0	32.5
December.....	13.3	20.0	20.8	20.8	37.5	43.8	46.7
1961							
January.....	45.0	15.0	45.8	37.5	58.3	43.8	38.6
February.....	33.3	40.0	52.1	62.5	41.7	43.8	41.3
March.....	61.7	43.3	66.7	81.3	60.4	64.6	54.6
April.....	56.7	78.3	83.3	83.3	22.9	62.5	59.7
May.....	86.7	85.0	77.1	87.5	79.2	64.6	49.1
June.....	88.3	90.0	91.7	83.3	77.1	56.3	51.9
July.....	70.0	90.0	79.2	100.0	60.4	83.3	50.4
August.....	70.0	66.7	83.3	79.2	68.8	87.5	52.1
September.....	56.7	80.0	45.8	79.2	39.6	95.8	55.9
October.....	71.7	80.0	72.9	75.0	83.3	81.3	r43.4
November.....	81.7	78.3	83.3	87.5	87.5	83.3	r41.2
December.....	63.3	76.7	56.3	41.7	60.4	83.3	51.1
1962							
January.....	55.0	78.3	29.2	50.0	58.3	85.4	r64.7
February.....	80.0	88.3	83.3	66.7	50.0	93.8	43.5
March.....	71.7	38.3	83.3	91.7	70.8	89.6	61.1
April.....	86.7	80.0	75.0	83.3	68.8	70.8	46.7
May.....	71.7	73.3	83.3	70.8	58.3	81.3	68.6
June.....	55.0	65.0	62.5	79.2	18.8	79.2	47.6
July.....	56.7	51.7	54.2	68.8	83.3	70.8	33.0
August.....	46.7	38.3	58.3	79.2	75.0	54.2	30.3
September.....	36.7	35.0	79.2	41.7	62.6	95.8	r36.3
October.....	45.0	26.7	29.2	62.5	39.6	95.8	39.0
November.....	33.3	28.3	54.2	45.8	87.5	81.3	r45.6
December.....	43.3	43.3	41.7	58.3	66.7	79.2	35.9
1963							
January.....	63.3	53.3	66.7	54.2	50.0	81.3	38.6
February.....	48.3	65.0	68.8	81.3	54.2	56.3	39.1
March.....	83.3	71.7	72.9	83.3	52.1	45.8	50.3
April.....	66.7	83.3	62.5	91.7	41.7	58.3	42.3
May.....	85.0	78.3	87.5	r87.5	52.1	70.8	73.0
June.....	61.7	76.7	r70.8	r83.3	75.0	p66.7	65.0
July.....	80.0	p60.0	r68.8	p75.0	62.5	r41.7	
August.....	p41.7		p41.7		p47.9		p54.2
September.....							
October.....							
November.....							
December.....							

<sup>1</sup>See "New Features and Changes For This Issue," page ii.

# Analytical Measures

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Table 5.-DIFFUSION INDEXES, ACTUAL AND ANTICIPATED, FOR 4 MANUFACTURING ACTIVITIES: JANUARY 1960 TO PRESENT

Numbers are centered within intervals: 4-quarter figures are centered in the middle quarter; 1-quarter figures are placed in the 1st month of the 2d quarter. "r" indicates revised; "p", preliminary; and "NA", not available.

Year and month	D35. Net sales, manufactures (800 companies)		D36. New orders, durable manufactures (400 companies)		D48. Freight carloadings (19 manufactured commodity groups)			D61. New plant and equipment expenditures (16 industries)	
	4-quarter interval		4-quarter interval		4-quarter interval			1-quarter interval	
	Actual	Anticipated	Actual	Anticipated	Actual	Anticipated	Change in total (000)	Actual	Anticipated
1960									
January.....	...	...	...	...	...	...	...	75.0	84.4
February.....	61	82	58	76	31.6	68.4	+96	...	...
March.....	...	...	...	...	...	...	...	...	...
April.....	...	...	...	...	...	...	...	71.9	71.9
May.....	53	74	51	68	31.6	78.9	-103	...	...
June.....	...	...	...	...	...	...	...	...	...
July.....	...	...	...	...	...	...	...	56.2	71.9
August.....	50	70	50	68	21.1	50.0	-279	...	...
September.....	...	...	...	...	...	...	...	...	...
October.....	...	...	...	...	...	...	...	34.4	43.8
November.....	60	68	62	68	26.3	42.1	-212	...	...
December.....	...	...	...	...	...	...	...	...	...
1961									
January.....	...	...	...	...	...	...	...	28.1	37.5
February.....	72	82	72	78	36.8	89.5	-28	...	...
March.....	...	...	...	...	...	...	...	...	...
April.....	...	...	...	...	...	...	...	46.9	53.1
May.....	74	83	73	78	68.4	73.7	+79	...	...
June.....	...	...	...	...	...	...	...	...	...
July.....	...	...	...	...	...	...	...	56.2	62.5
August.....	82	88	82	86	87.5	89.5	+125	...	...
September.....	...	...	...	...	...	...	...	...	...
October.....	...	...	...	...	...	...	...	59.4	65.6
November.....	81	86	78	82	63.2	89.5	+62	...	...
December.....	...	...	...	...	...	...	...	...	...
1962									
January.....	...	...	...	...	...	...	...	65.6	62.5
February.....	80	88	76	84	57.9	94.7	-67	...	...
March.....	...	...	...	...	...	...	...	...	...
April.....	...	...	...	...	...	...	...	68.8	68.8
May.....	76	80	74	74	(NA)	89.5	-96	...	...
June.....	...	...	...	...	...	...	...	...	...
July.....	...	...	...	...	...	...	...	65.6	65.6
August.....	72	74	71	70	...	68.4	-66	...	...
September.....	...	...	...	...	...	...	...	...	...
October.....	...	...	...	...	...	...	...	46.9	68.8
November.....	74	82	76	76	...	63.2	+10	...	...
December.....	...	...	...	...	...	...	...	...	...
1963									
January.....	...	...	...	...	...	...	...	40.6	50.0
February.....	80	...	76	...	...	78.9	+23	...	...
March.....	...	...	...	...	...	...	...	...	...
April.....	...	...	...	...	...	...	...	65.6	75.0
May.....	...	...	...	76	...	...	...	...	...
June.....	...	...	...	...	...	...	...	...	...
July.....	...	...	...	...	...	...	...	...	r71.9
August.....	...	...	...	...	...	...	...	...	...
September.....	...	...	...	...	...	...	...	...	...
October.....	...	...	...	...	...	...	...	...	...
November.....	...	...	...	...	...	...	...	...	...
December.....	...	...	...	...	...	...	...	...	62.5

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT

## A.--(D1) Average Workweek of Production Workers, Manufacturing

21 industry components	1-month spans												3-month spans																			
	1962						1963						1962						1963													
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec						
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec						
Percent rising.....	36	48	81	7	60	60	52	74	40	17	81	48	45	48					21	21	60	36	38	31	74	71	64	31	52	55	79	48
All manufacturing industries.....	o	-	+	-	+	-	+	-	+	-	+	o	-	-	-	-	-	-	-	-	+	-	+	-	+	o	+	-				
DURABLE GOODS INDUSTRIES																																
Ordnance and accessories.....	-	+	o	-	+	+	o	+	-	-	+	+	+	-	+	-	-	-	-	o	-	+	-	-	-	-	-	+	+	+		
Lumber and wood products.....	+	+	-	-	+	o	o	+	-	o	-	+	-	+	-	-	-	-	+	+	+	o	o	-	-	+	+	+	+			
Furniture and fixtures.....	-	-	+	-	o	-	+	+	-	-	+	o	+	-	-	-	-	-	-	o	-	+	-	o	+	+	+	+	+			
Stone, clay, and glass products.....	+	+	o	-	-	-	+	+	+	-	+	-	-	-	-	-	-	-	o	o	+	o	1	1	1	-	+	+	o	-		
Primary metal products.....	-	+	+	-	+	+	+	+	-	+	+	+	+	-	-	-	-	-	1	+	+	+	+	+	+	+	+	+	1			
Fabricated metal products.....	-	o	+	o	+	o	o	+	o	-	-	+	-	o	+	-	-	-	+	+	+	+	+	+	+	-	-	o	+			
Machinery, except electrical.....	o	o	+	-	o	+	o	o	-	-	+	+	-	+	-	-	-	-	+	+	-	-	-	-	-	+	+	+	+			
Electrical machinery.....	o	-	+	-	o	o	-	+	-	-	+	o	+	-	-	-	-	-	-	o	-	-	o	+	+	-	-	o	+	+		
Transportation equipment.....	+	-	+	-	+	+	+	-	-	-	+	+	-	-	-	-	-	-	o	+	+	-	-	-	-	o	+	+	-			
Instruments and related products.....	-	+	-	-	+	-	-	+	-	-	+	-	-	+	-	-	-	-	+	+	-	-	-	-	-	+	+	-	-			
Miscellaneous manufacturing industries.....	o	-	+	-	-	+	+	+	-	-	+	-	+	o	-	-	-	-	+	+	+	-	-	-	-	+	o	-	-			
NONDURABLE GOODS INDUSTRIES																																
Food and kindred products.....	+	-	+	-	+	o	-	+	+	-	+	+	-	+	-	-	-	-	+	o	-	+	-	-	-	-	-	+	+	+		
Tobacco manufactures.....	o	-	+	-	+	-	+	-	+	-	+	+	-	+	-	-	-	-	+	+	+	-	-	+	+	+	+	+	+	+		
Textile mill products.....	-	-	o	-	-	+	-	+	+	-	+	-	-	-	-	-	-	-	-	o	+	+	o	+	-	-	-	-	-	-		
Apparel and allied products.....	-	-	+	-	+	-	+	o	+	-	+	-	o	-	-	-	-	-	o	o	-	+	+	-	-	+	-	+	-	-		
Paper and allied products.....	-	o	+	-	+	+	-	o	+	-	+	-	+	o	+	-	-	-	o	o	-	o	+	o	-	-	-	+	+	+		
Printing and publishing.....	o	-	+	-	o	o	+	-	+	-	+	-	+	-	+	-	-	-	+	+	+	-	-	+	-	+	-	o	-	o		
Chemicals and allied products.....	o	o	o	-	+	-	o	+	+	-	+	-	-	-	-	-	-	-	o	o	-	o	-	+	+	-	-	+	-	-		
Petroleum and coal products.....	o	+	+	-	o	+	-	-	o	+	-	o	-	-	+	-	-	-	o	+	+	-	-	+	+	-	-	+	-	-		
Rubber products.....	-	+	+	-	o	+	o	+	o	-	-	-	+	-	-	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-		
Leather and leather products.....	-	+	+	-	-	-	-	+	-	-	+	o	-	+	-	-	-	-	-	-	-	-	+	o	o	+	+	+	+	+		

+ = rising; o = unchanged; - = falling. Series components are seasonally adjusted by issuing agency before the direction of change is determined.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

**B.-(D6) Value of Manufacturers' New Orders, Durable Goods Industries**

21 industry components	1-month spans												5-month spans																							
	1962						1963						1962						1963																	
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Feb-Jul	Mar-Aug	Apr-Sep	May-Oct	Jun-Nov	Jul-Dec	Aug-Jan	Sep-Feb	Oct-Mar	Nov-Apr	Dec-May	Jan-Jun	Feb-Jul	Mar-Aug	Apr-Sep	May-Oct	Jun-Nov	Jul-Dec
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Feb-Jul	Mar-Aug	Apr-Sep	May-Oct	Jun-Nov	Jul-Dec	Aug-Jan	Sep-Feb	Oct-Mar	Nov-Apr	Dec-May	Jan-Jun	Feb-Jul	Mar-Aug	Apr-Sep	May-Oct	Jun-Nov	Jul-Dec
Percent rising.....	81	33	33	71	55	38	57	62	57	57	69	40	57	26					52	57	52	67	71	38	76	86	57	67	76	71	57	52				
All durable goods industries <sup>1</sup> .....	+	-	-	+	-	-	+	+	+	+	-	-	-	+	-			+	-	+	+	+	-	+	+	+	+	+	+	+	-					
Iron and steel.....	+	+	-	+	-	-	+	+	+	+	-	-	-	+	-			-	-	+	+	+	+	+	+	+	+	+	+	+	-					
Primary nonferrous metals.....	-	+	-	+	-	-	+	+	+	-	-	-	+	-	-			-	+	-	+	-	-	+	+	+	+	+	+	-						
Other primary metals.....	+	+	-	+	-	-	+	-	+	+	o	-	+	-	-			-	-	+	+	+	-	+	+	+	+	+	-							
Electrical generator apparatus*.....	-	-	+	-	+	-	-	-	-	+	+	o	-	-	-			-	-	+	+	+	-	+	-	-	+	-	-							
Radio, television, and equipment.....	+	+	-	+	-	+	+	-	-	+	+	-	-	-	+			-	+	-	+	+	+	-	+	-	+	-	-							
Other electrical equipment*.....	+	-	+	-	+	+	-	+	+	-	+	+	+	-	+			-	+	+	-	+	+	-	+	-	+	-	-							
Motor vehicles.....	+	-	+	-	+	+	-	+	-	+	+	+	+	-	+			-	+	+	-	+	+	-	+	+	+	-								
Motor vehicle parts.....	+	-	+	+	-	+	-	+	-	-	-	-	-	+	+			-	-	-	+	+	-	+	-	+	-	+								
Aircraft.....	+	+	-	+	-	-	+	+	+	-	+	-	-	+	-			+	+	-	+	+	-	+	+	-	+	-	-							
Other transportation equipment*.....	-	-	+	-	+	-	+	+	-	+	+	-	-	+	-			-	+	+	-	+	+	-	+	+	-	-								
Stone, clay, and glass products.....	+	-	-	+	+	-	-	+	+	+	+	-	-	+	-			+	+	-	+	+	-	+	+	+	+	+	+							
Metalworking machinery*.....	+	-	+	-	+	+	-	+	-	+	+	-	-	+	-			+	+	+	+	+	-	+	+	+	+	-	-							
Special industrial machinery*.....	+	-	+	-	+	+	-	+	-	+	+	-	-	+	-			-	+	-	+	-	+	-	+	+	-	-								
General industrial machinery*.....	+	-	+	-	-	+	+	-	+	-	+	-	-	+	-			+	+	+	+	+	-	+	+	+	+	-	-							
Engines and turbines*.....	+	-	-	+	-	-	+	-	+	-	+	+	+	-	-			+	-	+	-	+	-	+	-	+	-	+	-							
Agricultural implements.....	-	-	-	+	+	-	-	+	+	-	+	-	-	+	-			+	+	+	+	-	-	+	+	-	+	-	-							
Construction machinery*.....	+	-	-	+	+	-	-	+	+	-	-	-	+	+	-			+	-	+	+	+	-	-	-	-	-	-	-							
Office machines*.....	+	-	-	+	o	-	-	+	+	-	-	-	+	+	-			+	+	+	+	+	-	-	-	-	-	-								
Household appliances.....	+	-	+	+	-	-	+	+	+	-	+	-	-	+	-			+	-	+	+	+	-	+	+	-	-	-								
Other machinery*.....	+	-	-	+	-	-	+	-	+	+	-	-	-	+	-			-	+	+	+	-	-	+	-	+	-	-								
Fabricated metal products*.....	+	-	-	+	+	-	+	+	-	+	-	-	+	-	-			+	+	+	+	+	-	+	+	-	+	-								

+ = rising; o = unchanged; - = falling. Series components are seasonally adjusted by issuing agency before the direction of change is determined.

\*Denotes machinery and equipment industries that comprise series 24.

<sup>1</sup>Includes durable goods industries not available separately.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued  
C.--(D19) Index of Stock Prices, 500 Common Stocks

24 industry components <sup>1</sup>	1-month spans												3-month spans															
	1962						1963						1962						1963									
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec		
	+	+	-	-	+	+	+	+	-	+	+	o	-	+	-	+	+	+	-	+	+	+	+	+	+	+		
Percent rising <sup>2</sup> .....	68	78	35	7	99	85	98	79	44	91	85	52	29	75	1	8	67	31	73	90	99	98	94	91	90	88	62	54
500 stock prices.....	+	+	-	-	+	+	+	+	-	+	+	o	-	+	-	+	+	+	+	+	+	+	+	+	+	+		
Mining and smelting.....	-	+	-	-	+	+	+	+	+	NA	NA	NA	NA	NA	NA	NA	-	-	-	-	-	-	-	-	-	-		
Coal, bituminous.....	+	+	-	-	+	-	+	+	+	+	+	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Food composite.....	+	+	-	-	+	+	+	+	-	+	+	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Tobacco (cigarette manufacturing).....	+	-	-	-	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Textile weavers.....	+	-	-	+	+	+	+	+	+	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Paper.....	-	-	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Publishing.....	-	+	+	-	+	+	+	+	-	+	+	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Chemicals.....	+	+	+	+	+	+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Drugs.....	+	-	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Oil composite.....	+	+	+	-	+	+	+	+	+	+	+	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Building materials composite.....	-	-	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Steel.....	-	-	-	-	+	1	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Metal fabricating.....	-	+	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Machinery composite.....	-	+	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Office and business equipment.....	+	+	-	-	+	+	+	+	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Electric household appliances.....	+	+	-	o	+	+	+	-	+	+	+	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-		
Electronics.....	+	+	+	-	+	+	+	-	+	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-		
Automobiles.....	+	+	+	o	+	+	+	+	+	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Radio and television broadcasters.....	+	+	-	-	+	+	+	+	+	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Telephone companies.....	+	+	-	-	+	+	+	-	+	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Electric companies.....	+	+	-	-	+	+	+	-	+	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Natural gas distributors.....	+	+	-	-	+	+	+	-	+	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Retail stores composite.....	-	+	-	-	+	+	+	+	+	+	+	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-		
Life insurance.....	+	+	-	-	+	+	+	+	+	+	+	o	-	+	-	+	-	-	-	-	-	-	-	-	-	-		

+= rising; o=unchanged; -=falling. Series components are not seasonally adjusted. NA=Not available.

<sup>1</sup>The 24 components shown here include 19 of the more important industries and 5 composites representing an additional 22 of the industries used in computing the diffusion index.

<sup>2</sup>Based on 82 industries, July 1962 to February 1963, and on 80 industries thereafter.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

## D--(D23) Index of Industrial Materials Prices

13 industrial materials components	1-month spans												3-month spans																				
	1962				1963				1962				1963				1962				1963												
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep <sup>1</sup>	Sep-Oct	Oct-Nov	Nov-Dec	Apr-Jul	May-Aug	Jun-Sep	Jul-Oct	Aug-Nov	Sep-Dec	Oct-Jan	Nov-Feb	Dec-Mar	Jan-Apr	Feb-May	Mar-Jun			
Percent rising.....	31	42	50	58	69	38	58	67	46	50	46	65	35	46	35				42	23	23	42	65	79	62	50	58	50	54	35	38	38	31
All industrial materials.....	-	+	-	+	+	-	-	-	+	+	-	+	0	-		-	-	-	+	+	+	+	-	-	-	-	-	-	0				
Copper scrap (lb.).....	-	+	-	-	+	-	+	-	-	+	-	+	0	-	-	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-			
Lead scrap (lb.).....	-	0	0	+	+	-	+	+	-	-	-	+	+	+	+	-	-	-	0	-	-	+	+	-	-	-	+	+	+				
Steel scrap (ton).....	+	+	-	-	0	+	-	+	-	+	+	-	-	+	+	-	-	-	-	+	+	-	+	-	-	-	+	-	-				
Tin (lb.).....	-	-	+	+	+	+	+	-	+	+	+	+	-	-	+	-	-	-	-	+	-	-	-	+	+	+	-	-	-				
Zinc (lb.).....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Burlap (yd.).....	-	-	+	+	+	NA	NA	NA	-	-	+	-	-	-	+	-	-	-	+	NA	NA	NA	NA	-	-	-	-	-	-				
Cotton (lb.), 15 market average.....	-	-	-	0	-	+	+	+	+	+	+	-	-	-	-	-	-	-	+	+	+	+	+	-	-	-	-	-	-				
Print cloth (yd.), average.....	+	-	-	-	+	+	+	+	+	-	-	+	+	+	+	0	-	-	+	+	+	+	+	-	-	-	-	-	-				
Wool tops (lb.).....	+	-	+	+	+	-	+	+	+	-	-	+	-	-	+	-	-	-	+	+	+	+	-	-	-	-	-	-	-				
Hides (lb.).....	-	+	+	-	+	-	-	+	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Rosin (100 lb.).....	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0				
Rubber (lb.).....	-	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Tallow (lb.).....	-	-	-	+	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

+ = rising; 0 = unchanged; - = falling. Series components are not seasonally adjusted. NA = Not available.

<sup>1</sup>Average for September 13th, 16th, and 17th, 1963.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

## E.-(D5) Initial Claims for Unemployment Insurance, State Programs

Labor market size rank	26 area components	1-month spans										5-month spans																																										
		1962					1963					1962					1963																																					
		Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Feb-Jul	Mar-Aug	Apr-Sep	May-Oct	Jun-Nov	Jul-Dec	Aug-Jan	Sep-Feb	Oct-Mar	Nov-Apr	Dec-May	Jan-Jun	Feb-Jul	Mar-Aug	Apr-Sep	May-Jun	Jun-Nov	Jul-Dec																	
	Percent rising.....	68	57	45	47	72	28	36	87	48	45	49	71	47	55					21	34	32	38	79	49	22	64	64	45	53	83	47	53																					
	47 labor market areas <sup>1</sup> .....	+	+	-	-	+	-	-	+	+	-	-	+	-	+	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-																
	NORTHEAST REGION																																																					
7	Boston.....	-	+	-	-	+	-	+	+	-	-	+	+	-	+	-	-	-	-	-	-	+	-	+	-	+	-	-	+	-	-	-	-	-	-	-	-	-																
16	Buffalo*.....	+	+	-	+	-	-	+	+	+	+	-	+	-	+	-	-	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
11	Newark.....	+	-	+	-	+	-	-	+	-	-	-	+	-	+	-	-	-	-	-	-	+	-	+	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-															
1	New York.....	-	-	+	-	+	-	-	+	-	-	+	-	+	-	+	-	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
21	Paterson.....	+	+	-	+	-	+	-	-	+	-	-	+	-	+	-	-	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
4	Philadelphia*.....	+	-	+	+	-	+	-	+	o	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-															
8	Pittsburgh**.....	+	-	+	+	-	+	-	+	+	-	+	-	+	-	+	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-															
23	Providence**.....	-	+	-	+	+	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
	NORTH CENTRAL REGION																																																					
3	Chicago.....	+	-	+	+	+	-	-	+	+	+	-	+	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
18	Cincinnati.....	+	-	+	-	+	+	-	+	+	-	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
10	Cleveland.....	+	-	+	-	+	-	-	+	+	-	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
26	Columbus.....	+	-	+	-	+	-	-	+	+	-	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
5	Detroit.....	+	-	+	-	-	-	-	+	-	+	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
25	Indianapolis.....	+	-	-	-	+	-	-	+	-	-	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
22	Kansas City.....	+	-	-	-	+	-	-	-	+	-	-	+	-	+	-	+	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
15	Milwaukee.....	+	-	-	-	+	-	-	-	+	-	-	+	-	+	-	+	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
13	Minneapolis.....	+	-	-	-	+	-	-	-	+	-	-	+	-	+	-	+	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
9	St. Louis.....	+	-	+	-	+	-	-	+	+	-	+	-	+	-	+	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
	SOUTH REGION																																																					
20	Atlanta.....	+	+	-	+	+	-	-	+	+	-	+	+	-	+	-	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
12	Baltimore.....	+	-	+	-	+	+	-	-	+	-	-	+	-	+	-	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
17	Dallas.....	+	-	-	-	+	-	-	-	+	-	-	+	-	-	-	-	-	-	-	+	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-															
14	Houston.....	-	-	+	-	+	-	-	+	-	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-															
	WEST REGION																																																					
2	Los Angeles.....	+	+	-	+	-	-	-	-	+	-	+	+	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
24	Portland.....	-	+	-	-	+	+	-	-	+	-	+	-	+	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
6	San Francisco.....	+	+	+	+	-	-	-	-	+	-	+	o	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
19	Seattle.....	+	+	+	-	+	-	-	-	+	-	-	+	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- = rising; o = unchanged; + = falling. Because this series usually rises when general business activity falls and falls when business rises, it is inverted to show a comparable activity pattern. The direction of change is shown for the week ending nearest the 22d of the month. Series components are seasonally adjusted by the Bureau of the Census before the direction of change is determined.

\*Designated by Bureau of Employment Security as an area of substantial unemployment (6 percent or more) in August 1963.

\*\*Designated by Bureau of Employment Security as an area of substantial (6 percent or more) and persistent unemployment in August 1963.

<sup>1</sup>The percent rising is based on 47 labor market areas. Directions of change are shown separately for only the largest 26.

Table 6.—DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

F.-(D41) Number of Employees in Nonagricultural Establishments

+ = rising; o = unchanged; - = falling. Series components are seasonally adjusted by issuing agency before the direction of change is determined.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

## G.--(D47) Index of Industrial Production

24 industry components	1-month spans												3-month spans															
	1962						1963						1962						1963									
	July-Aug. 1962	Aug.-Sept. 1962	Sept.-Oct. 1962	Oct.-Nov. 1962	Nov.-Dec. 1962	Dec.-Jan. 1963	Jan.-Feb. 1963	Feb.-Mar. 1963	Mar.-Apr. 1963	Apr.-May. 1963	May-June 1963	June-July 1963	July-Aug. 1963	Aug.-Sept. 1963	Sept.-Oct. 1963	Oct.-Nov. 1963	Nov.-Dec. 1963	Dec.-Jan. 1964	Jan.-Feb. 1964	Feb.-Mar. 1964	Sept.-Oct. 1964	Oct.-Nov. 1964	Nov.-Dec. 1964	Dec.-Jan. 1965				
Percent rising <sup>1</sup> .....	54	58	79	29	54	42	67	69	73	62	88	71	69	42	79	69	79	42	62	46	58	54	81	83	92	88	83	75
All industrial production.....	+	o	+	-	+	-	+	+	+	+	+	+	+	-	+	+	+	-	+	-	o	+	+	+	+	+	+	+
DURABLE GOODS																												
Primary and fabricated metals.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Primary metal products.....	-	+	+	-	+	-	-	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fabricated metal products.....	o	-	o	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Machinery and related products.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Machinery, except electrical.....	+	+	+	+	-	-	-	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Electrical machinery.....	-	o	+	+	-	-	-	-	o	+	+	-	o	-	-	-	-	-	-	-	-	-	-	-	-	-		
Transportation equipment.....	+	-	+	+	-	-	-	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-		
Instruments and related products.....	+	+	-	-	+	-	-	+	+	+	-	+	+	+	o	-	-	-	-	-	-	-	-	-	-	-		
Clay, glass, and lumber.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Clay, glass, and stone.....	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	o	-	-	-	-	-	-	-	-	-	-		
Lumber and products.....	-	+	+	-	+	-	-	+	+	-	+	-	-	-	-	NA	-	-	-	-	-	-	-	-	-	NA		
Furniture and miscellaneous.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Furniture and fixtures.....	-	+	+	-	+	-	-	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-		
Miscellaneous.....	+	-	+	-	-	-	-	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NONDURABLE GOODS																												
Textile, apparel, and leather.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	+	+	+	+	+	+	+	+	+	+	+	+	
Textile mill products.....	+	+	-	-	o	-	-	+	+	+	+	+	+	+	+	NA	-	-	-	-	-	-	-	-	-	-	NA	
Apparel products.....	-	+	+	+	+	-	-	+	-	-	+	+	+	+	+	NA	+	+	+	+	-	-	-	-	-	NA		
Leather and products.....	-	-	+	-	-	-	-	-	+	-	+	+	+	+	+	NA	NA	-	-	-	-	-	-	-	-	NA		
Paper and printing.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	+	+	+	+	+	+	+	+	+	+	+		
Paper and products.....	+	-	+	-	-	o	-	+	+	+	-	+	+	+	+	NA	-	-	-	-	-	-	-	-	-	NA		
Printing and publishing.....	-	+	+	-	+	-	-	-	+	-	+	+	+	+	o	-	-	-	-	-	-	-	-	-	-			
Chemicals, petroleum, and rubber.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-		
Chemicals and products.....	+	+	+	-	-	o	-	+	+	+	+	+	+	+	+	NA	-	-	-	-	-	-	-	-	-	NA		
Petroleum products.....	-	-	+	-	-	+	-	+	o	+	+	+	+	+	+	NA	-	-	-	-	-	-	-	-	-	NA		
Rubber and plastics products.....	+	+	o	+	-	-	-	+	+	+	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	o		
Foods, beverages, and tobacco.....	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-		
Food and beverages.....	+	o	-	-	+	-	-	+	-	+	-	+	-	+	+	NA	-	-	-	-	-	-	-	-	-	+		
Tobacco products.....	+	-	+	-	-	-	-	+	-	+	-	-	-	-	-	NA	NA	-	-	-	-	-	-	-	-	NA		
MINERALS																												
Coal.....	o	+	+	+	+	-	-	-	-	-	-	+	o	+	-	-	-	-	-	-	-	-	-	-	-	-		
Crude oil and natural gas.....	+	-	+	-	+	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	+		
Metal mining.....	-	-	-	-	+	-	-	+	+	+	-	-	-	-	-	NA	-	-	-	-	-	-	-	-	-	NA		
Stone and earth minerals.....	-	+	+	-	-	-	-	+	-	+	-	+	-	+	+	NA	-	-	-	-	-	-	-	-	-	NA		

+ = rising; o = unchanged; - = falling. Series components are seasonally adjusted by issuing agency before the direction of change is determined.

NA = Not available.

<sup>1</sup>The direction of change is shown for industry groups where actual data for separate industries are not available; however, estimates for each industry are used to compute the percent rising. The percent rising is based on 24 industry components.

Table 6.--DIRECTION OF CHANGE IN SERIES COMPONENTS OVER SPECIFIED TIME SPANS AND PERCENT OF SERIES RISING: JULY 1962 TO PRESENT--Continued

## H.--(D54) Sales of Retail Stores

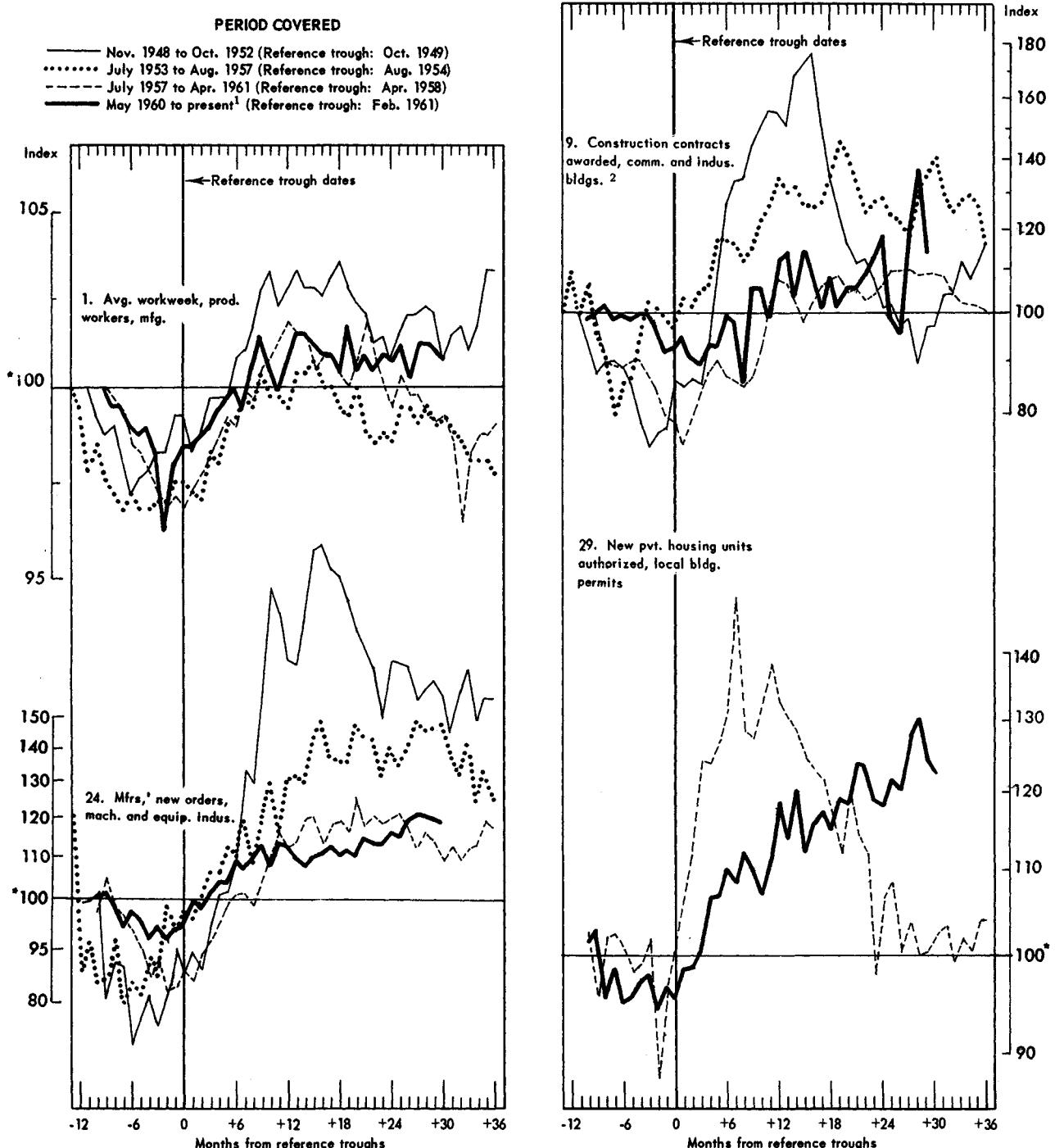
24 retail store components	1-month spans												5-month spans															
	1962						1963						1962						1963									
	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Feb-Mar	Mar-Apr	Apr-May	May-Jun	Jun-Jul	Jul-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec
	83	75	65	40	88	67	50	54	52	42	52	75	62	48	81	79	71	54	96	96	81	79	81	56	46	58	71	67
Percent rising.....	+	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
All retail sales.....	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Grocery stores.....	+	+	+	+	-	+	+	-	-	o	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+		
Other food stores.....	+	+	-	-	+	+	+	+	o	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+		
Eating places.....	-	+	-	-	+	+	+	+	+	+	+	-	+	+	+	+	+	o	+	+	+	+	+	+	+	+		
Department stores.....	+	-	+	-	+	+	-	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+		
Mail-order stores.....	+	+	+	-	+	-	+	o	+	+	-	-	+	+	-	+	+	+	+	+	-	+	+	+	+	+		
Variety stores.....	+	+	+	-	+	o	-	+	+	-	+	+	+	-	+	-	+	o	+	+	+	+	+	+	+	+		
Other general stores.....	+	+	+	+	+	+	-	+	+	o	-	+	+	+	-	+	+	+	-	-	-	-	-	-	-	-		
Men's wear stores.....	+	+	+	-	+	+	-	+	-	o	-	+	+	+	-	+	+	+	-	o	-	-	-	-	-	-	-	
Women's apparel stores.....	+	+	+	-	+	-	-	-	+	-	+	+	+	+	-	+	+	+	-	-	-	-	-	-	-	-		
Family apparel stores.....	+	-	-	-	+	+	+	-	-	-	-	+	+	+	-	+	+	+	-	-	-	-	-	-	-	-		
Shoe stores.....	+	+	-	-	+	+	-	-	+	-	o	-	+	+	-	+	o	+	+	-	-	-	-	-	-	-		
Furniture stores.....	o	+	-	-	+	o	+	+	-	+	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+		
Appliance and radio stores.....	+	+	-	+	+	-	+	-	-	+	-	+	-	+	-	+	+	+	-	-	-	-	-	-	-	-		
Building material dealers.....	+	-	+	-	+	-	+	-	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+		
Hardware stores.....	-	+	+	+	-	+	-	-	-	+	-	+	+	+	-	+	o	-	-	-	-	-	-	-	-	-		
Farm equipment dealers.....	-	+	+	-	+	+	-	+	+	-	-	+	+	+	-	+	+	+	-	-	-	-	-	-	-	-		
Motor vehicle dealers.....	+	-	-	+	-	+	+	-	-	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+		
Tire and battery dealers.....	+	-	+	+	+	+	-	-	-	+	+	+	+	+	-	+	+	+	-	-	+	+	+	+	+	+		
Gasoline stations.....	+	+	+	+	+	+	+	-	+	-	-	+	+	+	-	+	+	+	+	+	-	-	+	+	+	+		
Drug and proprietary stores.....	-	+	-	+	+	-	-	+	-	-	+	-	-	-	-	+	+	o	+	+	-	+	+	-	-	-		
Jewelry stores.....	+	+	-	o	+	+	+	+	+	o	-	-	+	-	-	+	+	+	+	+	-	-	-	-	-	-		
Liquor stores.....	+	+	o	+	+	+	-	+	+	+	-	+	-	+	-	+	+	+	+	+	-	-	-	-	-	-		
Other durable goods stores.....	+	o	+	-	+	-	+	+	+	+	+	+	+	-	+	+	+	o	-	+	+	+	+	+	+	+		
Other nondurable goods stores.....	+	+	+	-	+	+	+	+	-	-	-	-	-	-	-	+	+	+	-	+	+	-	-	-	-	-		

+ = rising; o = unchanged; - = falling. Series components are seasonally adjusted by the Bureau of the Census before the direction of change is determined.

## CHART 4

## COMPARISONS OF REFERENCE CYCLE PATTERNS

Percent of reference peak levels of selected series compared for 4 business cycles. Period begins with the reference peak date preceding the trough of each cycle.



\*Reference peak level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the reference peak is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the reference peak month is set at "100". For quarterly series, the reference peak quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months of previous expansions are shown in table 7. <sup>2</sup>For the 1949, 1954, and 1958 cycles, a 3-term moving average is shown.

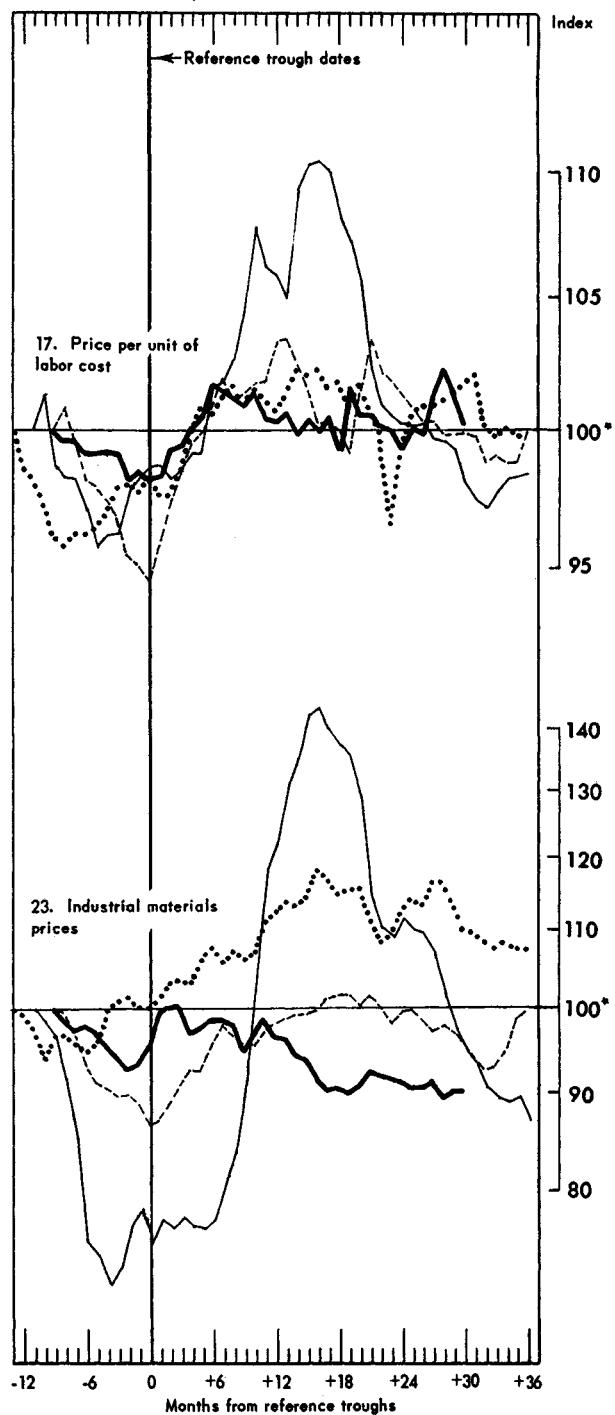
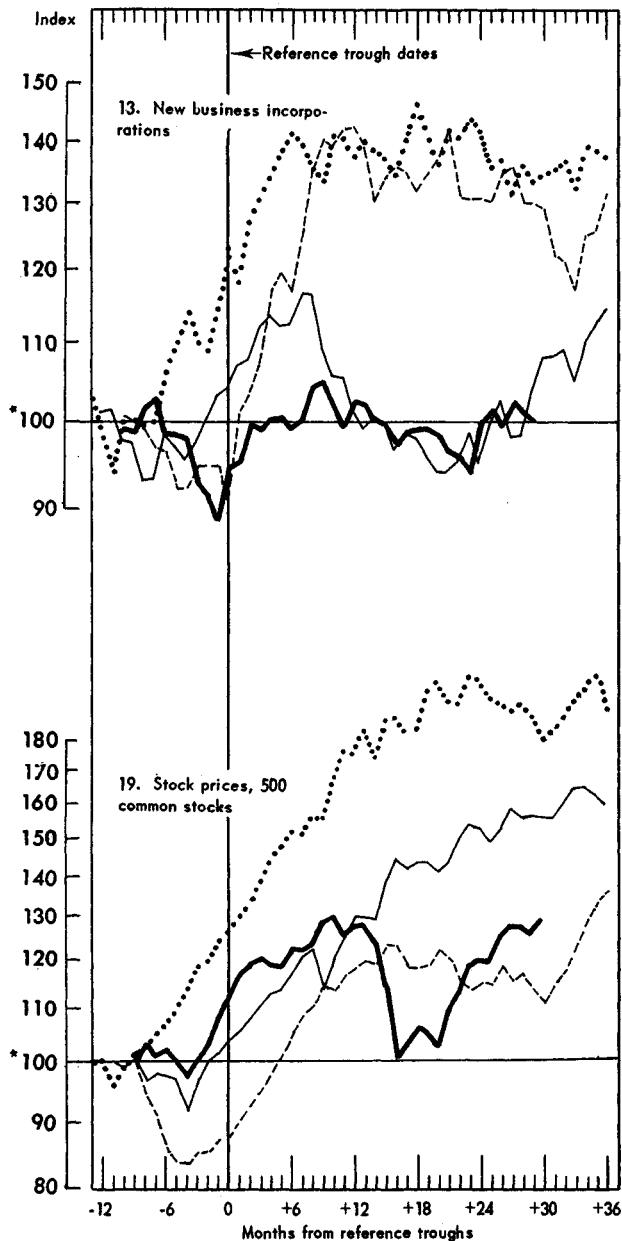
## CHART 4

## COMPARISONS OF REFERENCE CYCLE PATTERNS--Con.

Percent of reference peak levels of selected series compared for 4 business cycles. Period begins with the reference peak date preceding the trough of each cycle.

## PERIOD COVERED

- Nov. 1948 to Oct. 1952 (Reference trough: Oct. 1949)
- July 1953 to Aug. 1957 (Reference trough: Aug. 1954)
- - - July 1957 to Apr. 1961 (Reference trough: Apr. 1958)
- May 1960 to present<sup>1</sup> (Reference trough: Feb. 1961)

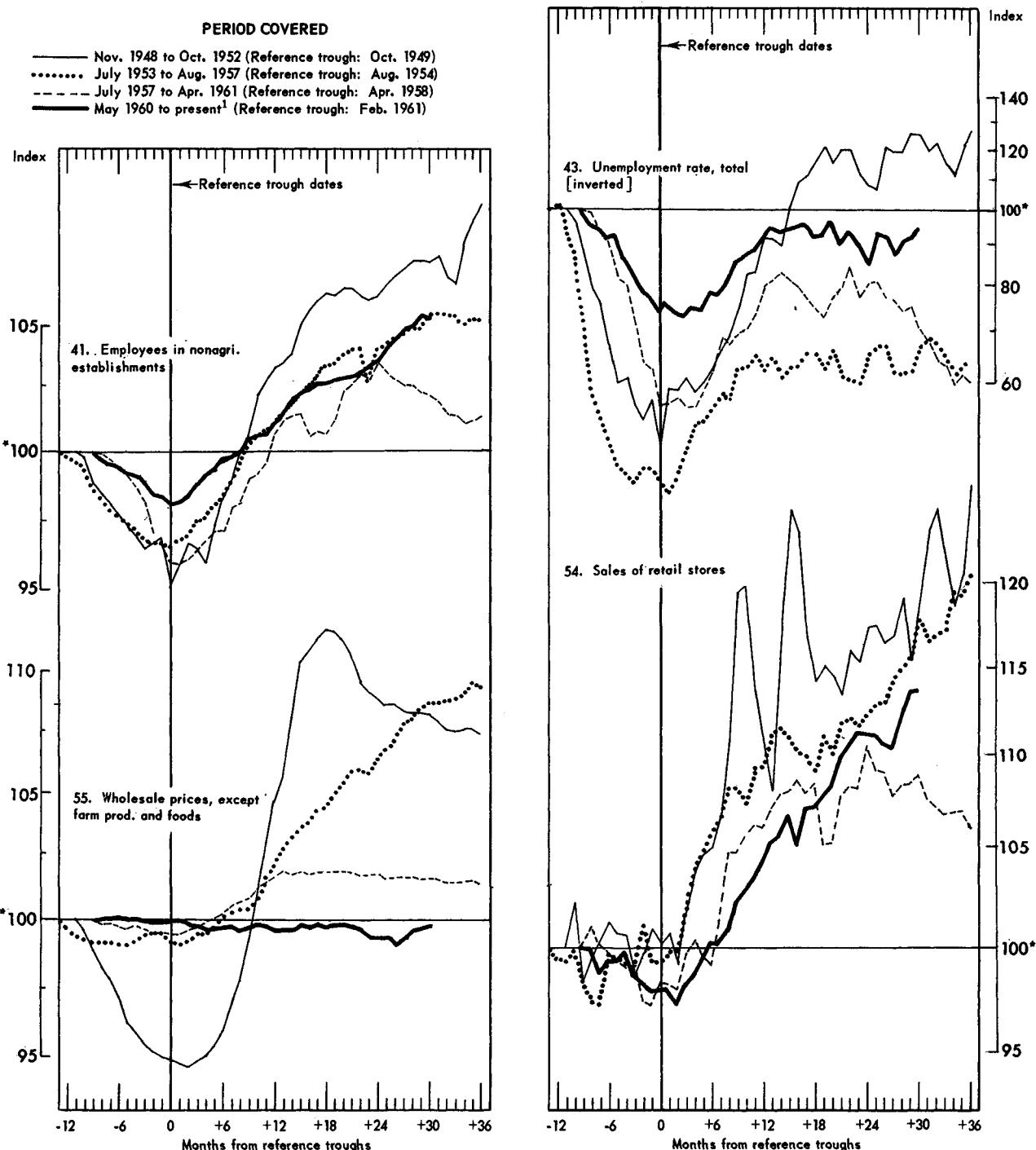


\*Reference peak level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the reference peak is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the reference peak month is set at "100". For quarterly series, the reference peak quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months of previous expansions are shown in table 7.

## CHART 4 COMPARISONS OF REFERENCE CYCLE PATTERNS--Con.

Percent of reference peak levels of selected series compared for 4 business cycles. Period begins with the reference peak date preceding the trough of each cycle.



\*Reference peak level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the reference peak is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the reference peak month is set at "100". For quarterly series, the reference peak quarter is set to "100". MCD values are shown in appendix C.

<sup>1</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months of previous expansions are shown in table 7.

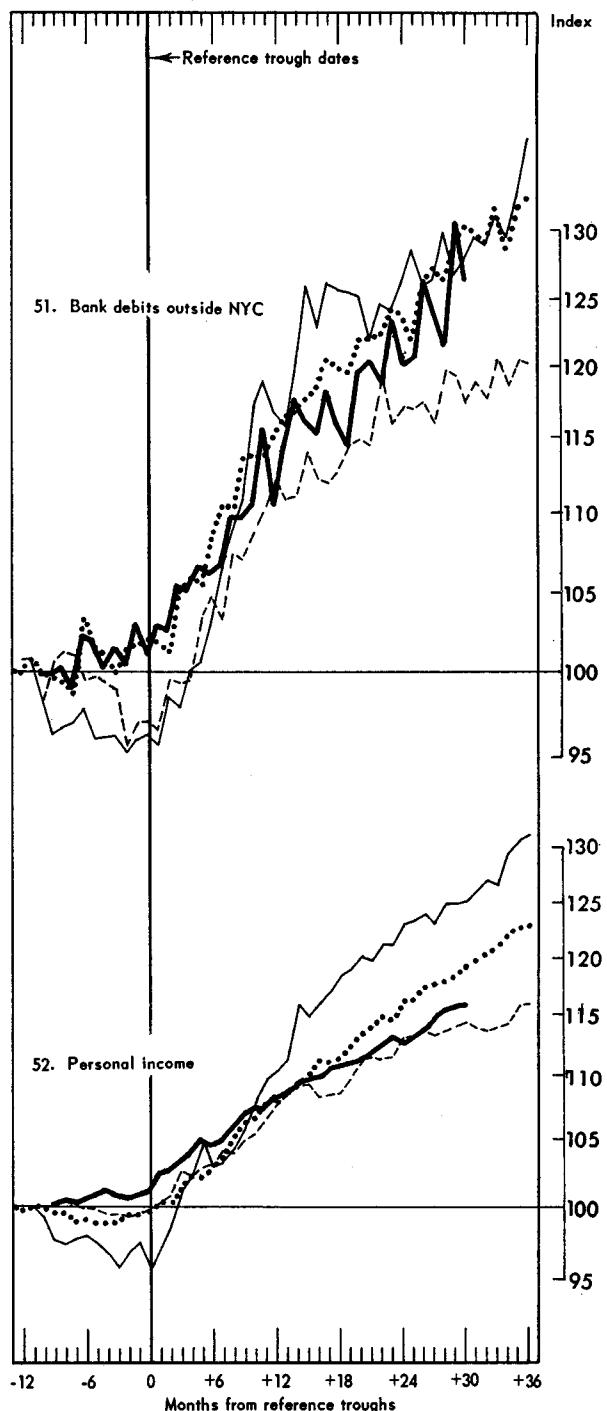
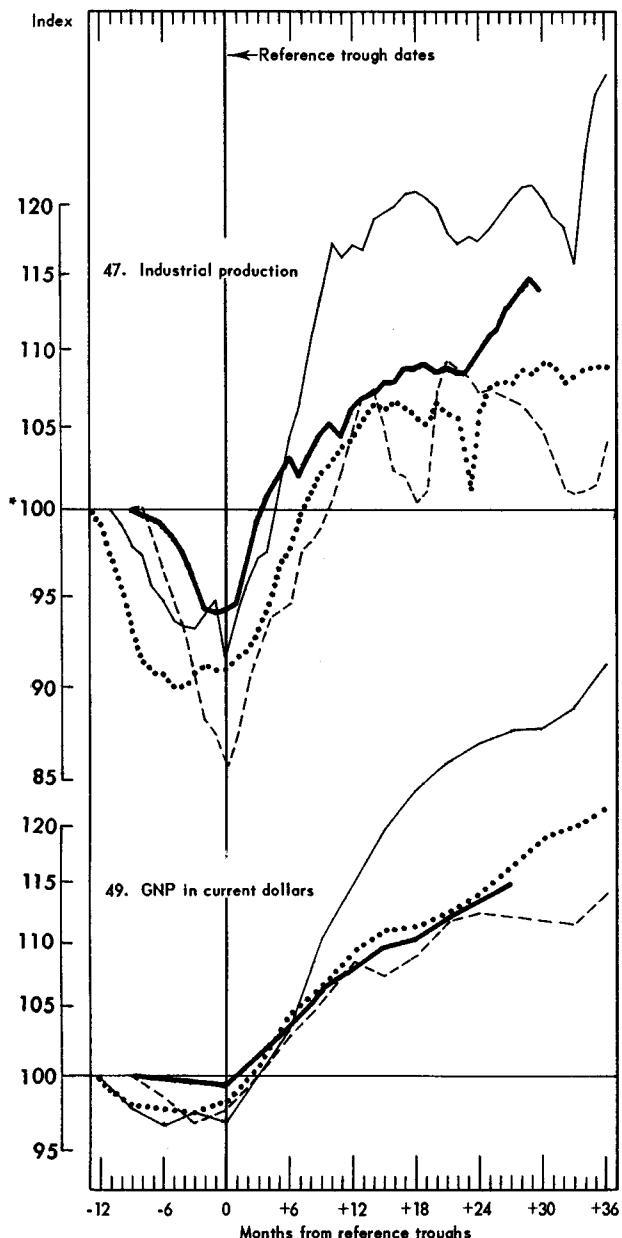
## CHART 4

## COMPARISONS OF REFERENCE CYCLE PATTERNS--Con.

Percent of reference peak levels of selected series compared for 4 business cycles. Period begins with the reference peak date preceding the trough of each cycle.

## PERIOD COVERED

- Nov. 1948 to Oct. 1952 (Reference trough: Oct. 1949)
- July 1953 to Aug. 1957 (Reference trough: Aug. 1954)
- - - July 1957 to Apr. 1961 (Reference trough: Apr. 1958)
- May 1960 to present<sup>1</sup> (Reference trough: Feb. 1961)

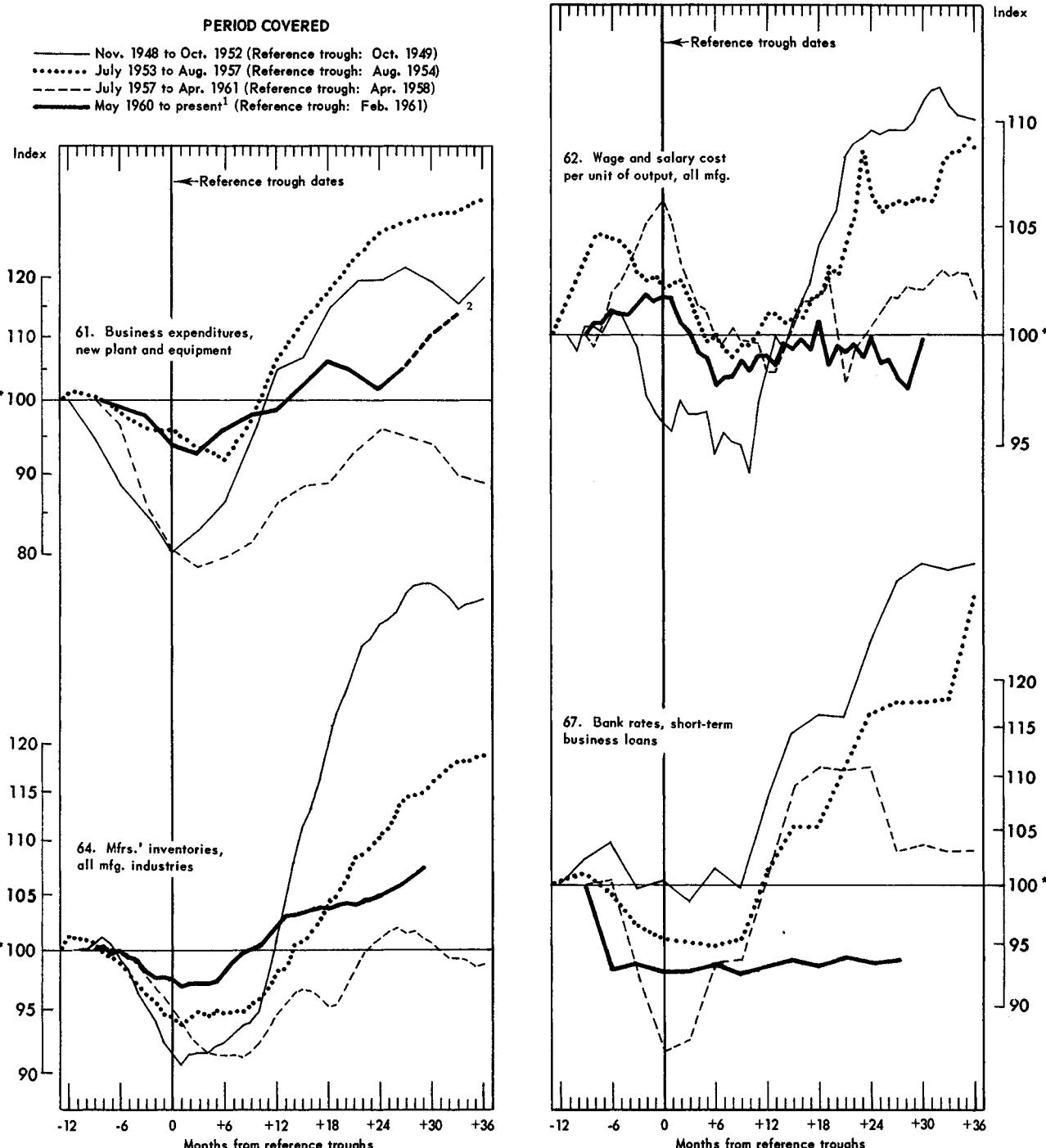


\*Reference peak level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the reference peak is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the reference peak month is set at "100". For quarterly series, the reference peak quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months of previous expansions are shown in table 7.

## CHART 4 COMPARISONS OF REFERENCE CYCLE PATTERNS--Con.

Percent of reference peak levels of selected series compared for 4 business cycles. Period begins with the reference peak date preceding the trough of each cycle.



\*Reference peak level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the reference peak is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the reference peak month is set at "100". For quarterly series, the reference peak quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months of previous expansions are shown in table 7.

<sup>2</sup>Last 2 quarters anticipated.

## CHART 5

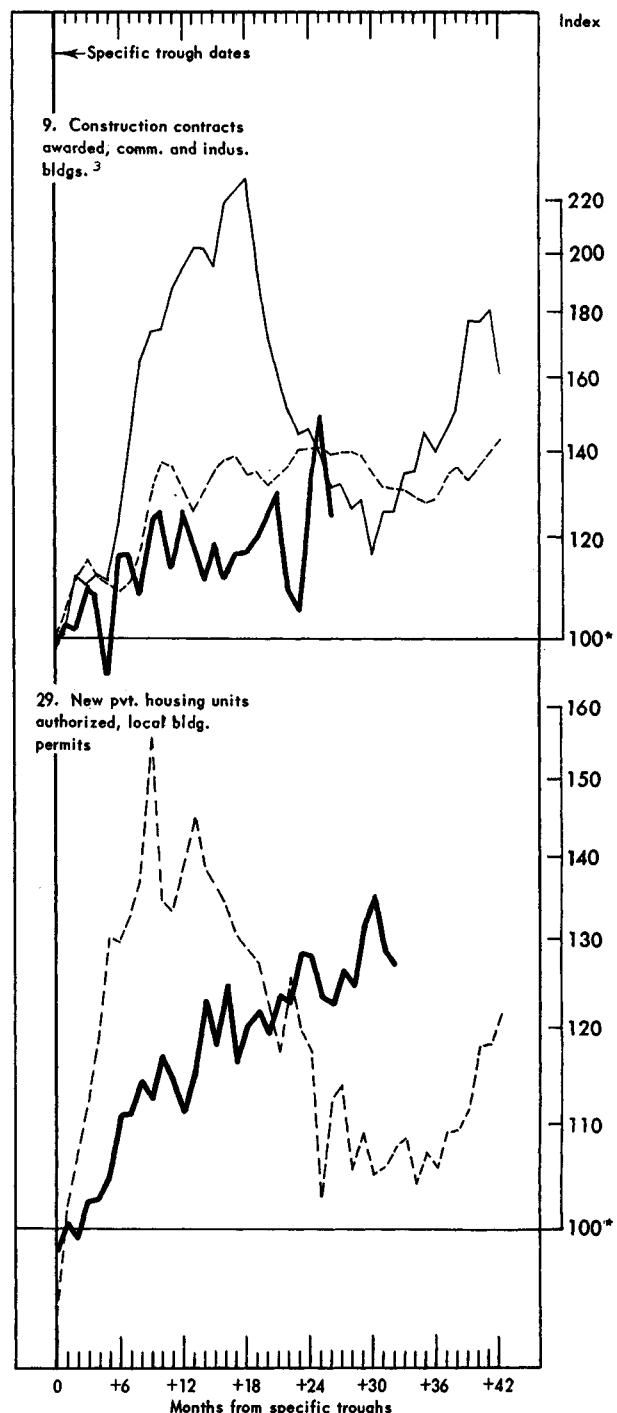
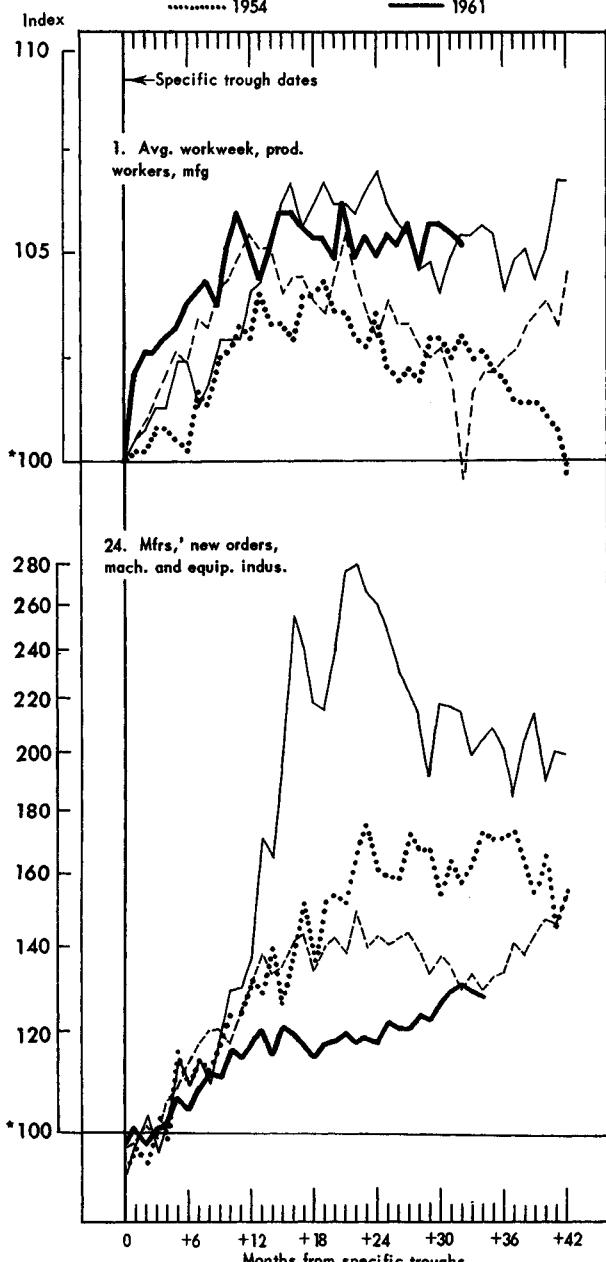
## COMPARISONS OF SPECIFIC CYCLE PATTERNS

Percent of specific trough levels of selected series compared for 4 business expansions. Period begins with the specific trough date<sup>1</sup> of each series for each expansion.

## PERIOD COVERED

From specific trough dates to 42 months later.<sup>2</sup> Specific trough dates are the dates each series actually begins the expansion identified with the reference trough of--

— 1949      - - - 1958  
..... 1954      — 1961



<sup>1</sup>Specific trough level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the specific trough is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the specific trough month is set at "100". For quarterly series, the specific trough quarter is set at "100". MCD values are shown in appendix C.

<sup>2</sup>See appendix B for specific dates. <sup>3</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months after the specific troughs of previous expansions are shown in table 9. <sup>3</sup>For the current cycle, changes are based on the low (L) shown in table 1. For the 1949 and 1958 cycles, a 3-term moving average is shown.

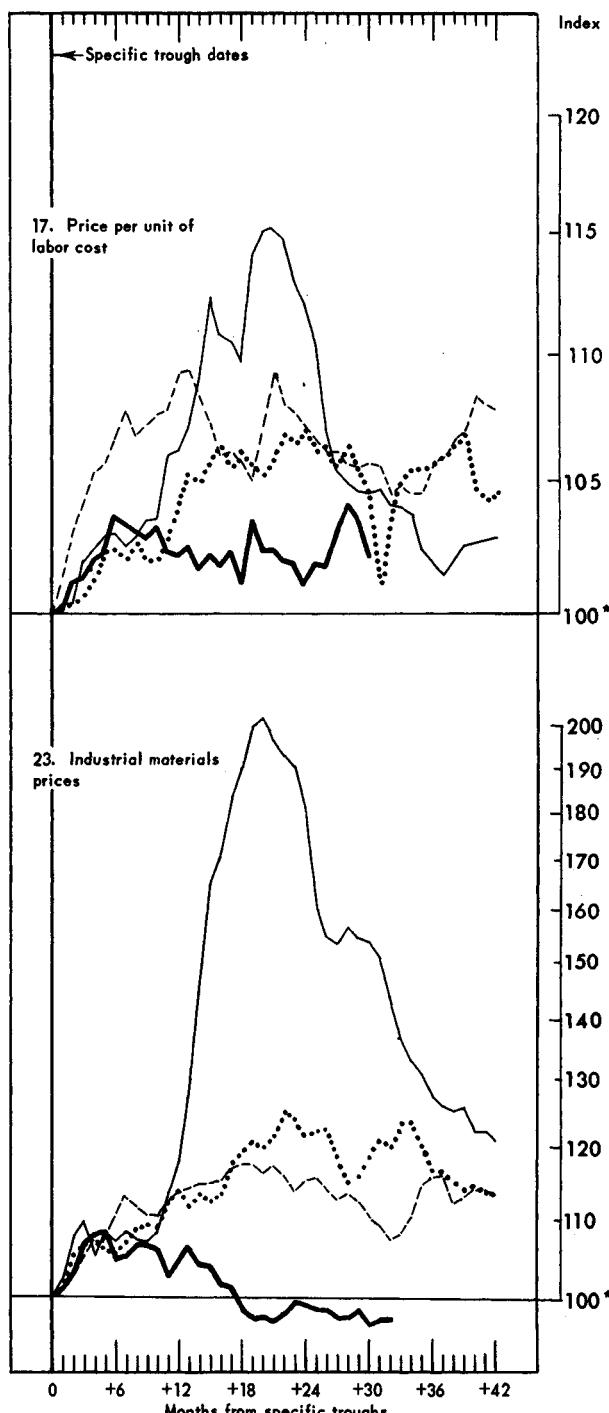
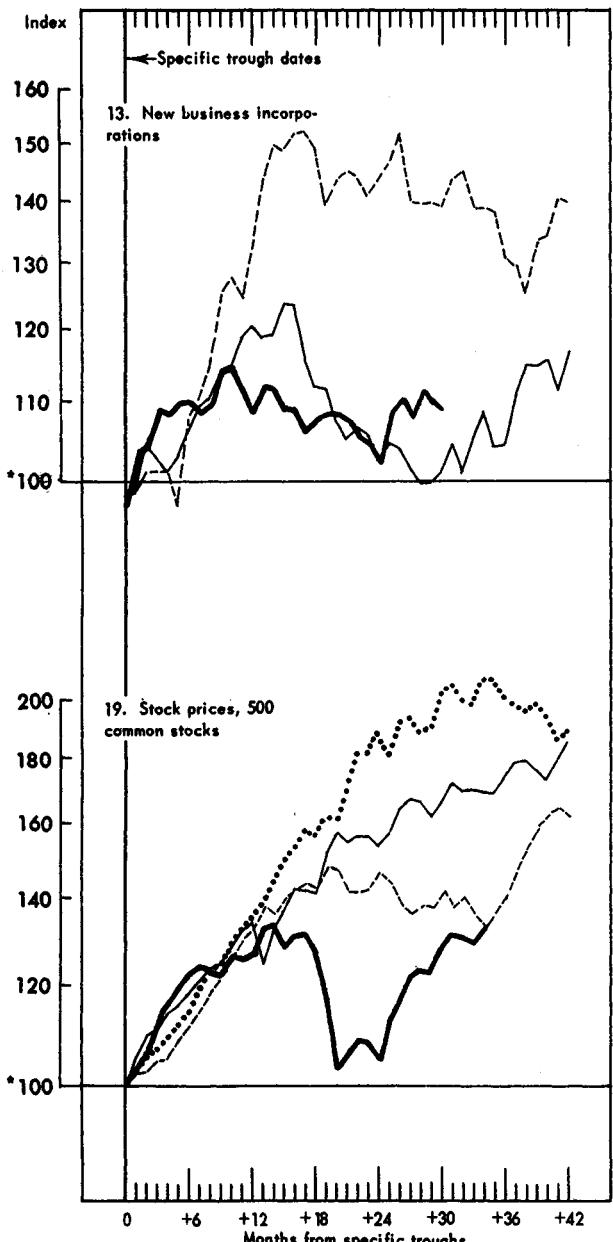
**CHART 5**

## COMPARISONS OF SPECIFIC CYCLE PATTERNS--Con.

Percent of specific trough levels of selected series compared for 4 business expansions. Period begins with the specific trough date<sup>1</sup> of each series for each expansion.

**PERIOD COVERED**

From specific trough dates to 42 months later.<sup>2</sup> Specific trough dates are the dates each series actually begins the expansion identified with the reference trough of--



**\*Specific trough level.** For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the specific trough is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the specific trough month is set at "100". For quarterly series, the specific trough quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See appendix B for specific dates. <sup>2</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months after the specific troughs of previous expansions are shown in table 9.

## CHART 5

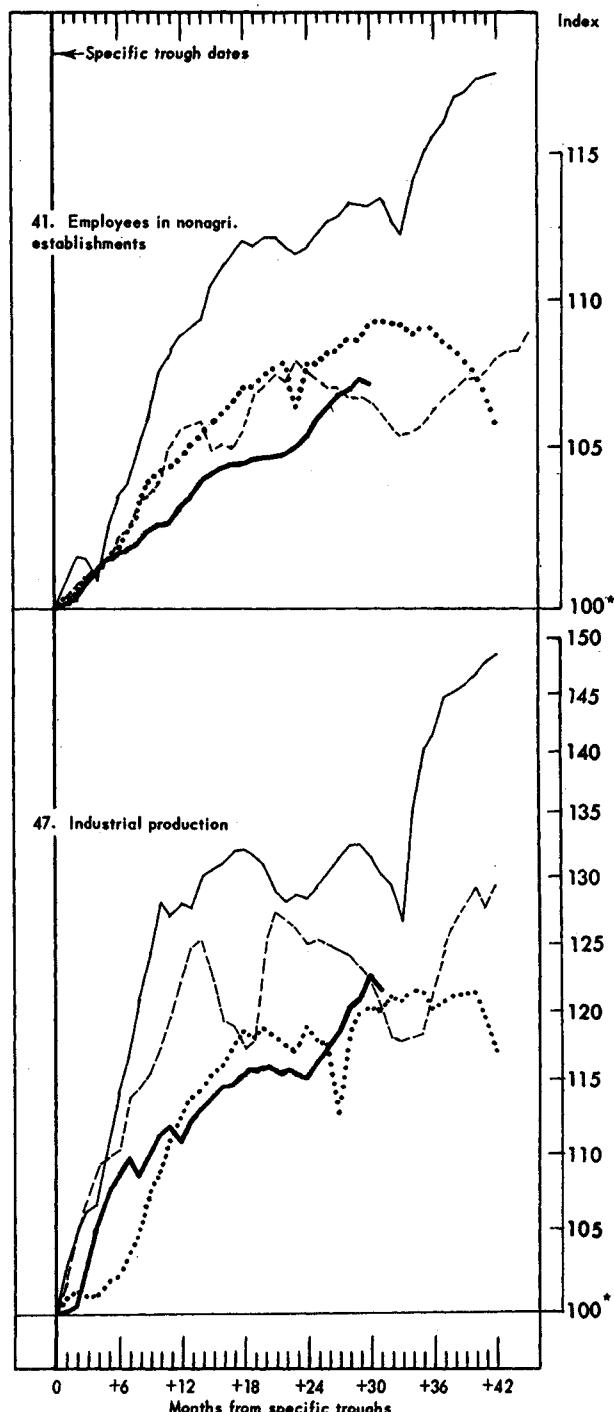
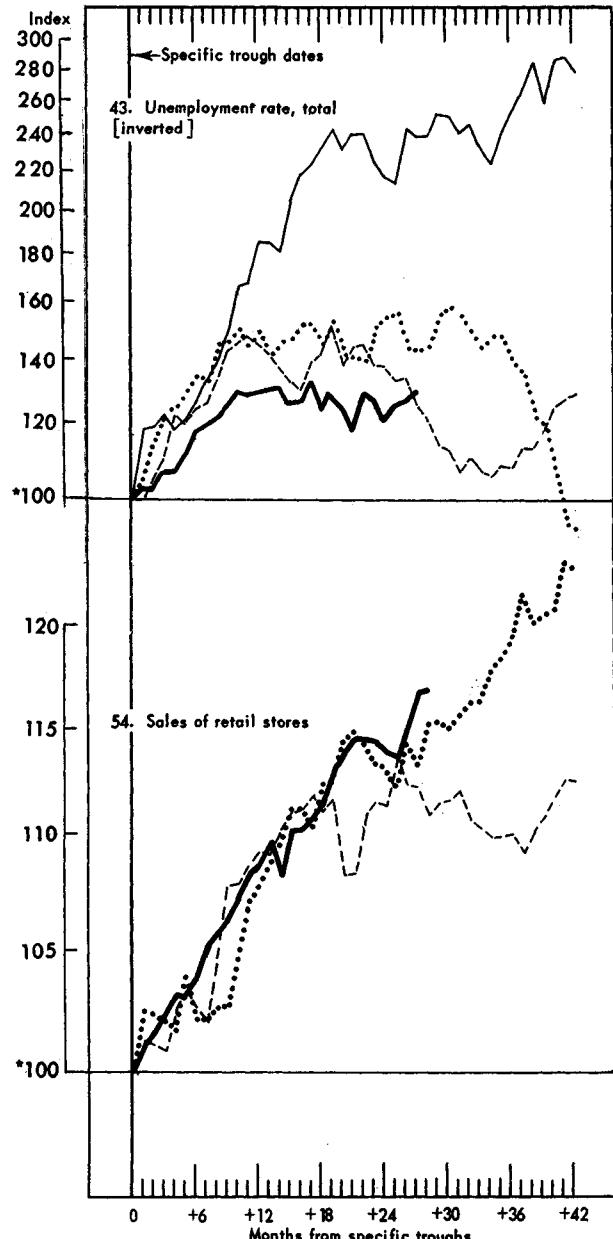
## COMPARISONS OF SPECIFIC CYCLE PATTERNS--Con.

Percent of specific trough levels of selected series compared for 4 business expansions. Period begins with the specific trough date<sup>1</sup> of each series for each expansion.

## PERIOD COVERED

From specific trough dates to 42 months later.<sup>2</sup> Specific trough dates are the dates each series actually begins the expansion identified with the reference trough of--

— 1949      - - - 1958  
..... 1954      — 1961



\*Specific trough level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the specific trough is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the specific trough month is set at "100". For quarterly series, the specific trough quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See appendix B for specific dates. <sup>2</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months after the specific troughs of previous expansions are shown in table 9.

**CHART 5**

## COMPARISONS OF SPECIFIC CYCLE PATTERNS--Con.

Percent of specific trough levels of selected series compared for 4 business expansions. Period begins with the specific trough date<sup>1</sup> of each series for each expansion.

**PERIOD COVERED**

From specific trough dates to 42 months later.<sup>2</sup> Specific trough dates are the dates each series actually begins the expansion identified with the reference trough of--

Index

← Specific trough dates

49. GNP in current dollars

52. Personal income<sup>3</sup>

0 +6 +12 +18 +24 +30 +36 +42

Months from specific troughs

The figure consists of two vertically stacked line graphs sharing a common x-axis representing time in months from specific troughs. The top graph, labeled '50. GNP in 1954 dollars', shows an index on the right y-axis (0 to 140). The bottom graph, labeled '53. Labor income in mining, mfg., and construction', shows an index on the right y-axis (100\* to 170). Both graphs feature a solid line for the index and a dotted line for the cyclical component. In the top graph, the solid line starts at 100\* and rises to approximately 125 at +42 months. In the bottom graph, the solid line starts at 100\* and rises to approximately 165 at +42 months. Specific trough dates are marked on the top graph's x-axis at +6, +12, +18, +24, +30, +36, and +42 months.

\*Specific trough level. For series with a "months for cyclical dominance" (MCD) of "1" or "2", the figure for the specific trough is set at "100". For series with an MCD of "3" or more, the average of the 3 months centered on the specific trough month is set at "100". For quarterly series, the specific trough quarter is set at "100". MCD values are shown in appendix C.

<sup>1</sup>See appendix B for specific dates. <sup>2</sup>See table 1 for latest month in current period. Percent changes for this month and comparable months after the specific troughs of previous expansions are shown in table 9. <sup>3</sup>For the current cycle, changes are based on the low (L) shown in table 1.

Table 7.--PERCENT OF REFERENCE PEAK LEVELS AS MEASURED AT DESIGNATED MONTHS AFTER THE REFERENCE TROUGH DATES IN THE 9 MOST RECENT EXPANSIONS

For series with a "months for cyclical dominance" (MCD) of "1" or "2" (series 1, 17, 19, 23, 41, 43, 47, 52, 54, 55, 62, 64, and 66), the figure for the reference peak month is used as the base. For series with an MCD of "3" or more (series 2, 3, 6, 7, 9, 13, 14, 24, 29 and 51), the average of the 3 months centered on the reference peak month is used as the base. The base for quarterly series (series 16, 49, 50, 61, and 67) is the reference peak quarter. See also MCD footnote to appendix C.

Selected series	Months after reference trough <sup>1</sup>	Percent of reference peak prior to reference expansion beginning in--								
		July 1921	July 1924	Nov. 1927	Mar. 1933	June 1938	Oct. 1949	Aug. 1954	Apr. 1958	Feb. 1961
<b>NBER LEADING INDICATORS</b>										
1. Average workweek of production workers, manufacturing.....	30	NA	95.8	92.4	77.0	99.0	100.8	99.3	99.2	100.8
2. Accession rate, manufacturing.....	29	40.2	33.6	45.2	51.2	124.0	104.2	83.7	105.4	102.7
3. Layoff rate, manufacturing (inverted).....	29	22.6	33.9	47.9	50.0	105.3	128.6	93.3	76.0	133.3
6. Value of manufacturers' new orders, durable goods industries.....	30	191.7	124.8	61.6	49.0	215.6	162.4	126.8	104.5	115.5
7. New private nonfarm dwelling units started.....	30	236.8	129.1	46.8	38.4	262.0	127.3	90.1	106.3	119.9
9. Construction contracts awarded for commercial and industrial bldgs., floor space <sup>2</sup> .....	29	37.8	104.4	77.4	21.0	187.6	97.1	135.7	109.5	113.6
13. Number of new business incorporations.....	29	76.5	94.9	99.3	68.0	72.3	103.8	132.6	129.5	100.0
14. Current liabilities of bus. failures (inv.).....	30	18.4	102.1	63.4	202.5	119.9	93.1	62.9	56.6	155.0
16. Corporate profits after taxes (Q).....	27	62.0	96.2	73.6	22.1	115.1	88.1	121.4	92.5	118.6
17. Price per unit of labor cost index.....	30	NA	NA	NA	NA	NA	98.2	101.8	99.9	100.1
19. Index of stock prices, 500 common stocks.....	30	100.0	154.6	183.9	38.6	64.8	155.3	179.0	110.8	128.5
23. Index of industrial materials prices.....	30	61.6	81.2	79.7	178.0	95.6	94.8	110.1	96.1	90.5
24. Value of manufacturers' new orders, machinery and equipment industries.....	30	NA	NA	NA	NA	NA	158.0	148.2	108.3	118.6
29. Index of new private housing units authorized by local building permits.....	30	NA	NA	NA	NA	NA	NA	NA	102.2	122.9
<b>NBER ROUGHLY COINCIDENT INDICATORS</b>										
41. Number of employees in nonagricultural establishments.....	30	87.4	95.2	93.8	84.4	107.0	107.5	105.2	102.1	105.0
43. Unemployment rate, total (inverted).....	30	NA	NA	NA	NA	103.5	124.0	66.3	69.7	94.5
47. Index of industrial production.....	30	104.5	106.1	96.2	78.7	115.4	120.2	109.2	104.7	114.3
49. Gross national product in current dollars(Q).....	27	NA	116.1	107.4	66.2	108.9	128.2	116.6	112.3	115.0
50. Gross national product in 1954 dollars (Q).....	27	NA	115.8	110.2	81.6	NA	117.6	108.7	107.1	110.7
51. Bank debits outside NYC, 343 centers.....	30	92.7	116.1	110.6	55.0	107.6	129.7	129.9	117.7	126.5
52. Personal income.....	30	NA	111.8	104.7	70.6	111.6	124.9	119.1	114.0	115.6
54. Sales of retail stores.....	30	109.4	108.8	97.3	76.3	114.9	118.4	118.1	108.9	113.4
55. Index of wholesale prices, all commodities other than farm products and foods.....	30	65.7	90.1	88.1	84.9	95.9	107.9	108.7	101.6	99.8
<b>NBER LAGGING INDICATORS</b>										
61. Business expenditures on new plant and equipment, total (Q): <sup>3</sup>										
a.....	27	54.5	108.1	104.3	40.6	105.1	121.6	129.8	95.1	104.8
b.....	33	51.3	96.2	75.7	47.8	NA	115.2	131.8	89.7	113.4
62. Index of labor cost per unit of output, total manufacturing.....	30	81.1	91.5	90.9	86.7	98.1	111.1	106.4	102.0	99.9
64. Manufacturers' inventories, book value.....	29	NA	NA	NA	74.8	108.5	138.5	115.2	101.1	107.3
66. Consumer installment debt.....	29	NA	NA	NA	76.3	136.5	177.3	143.9	127.9	124.5
67. Bank rates on short-term business loans, 19 cities (Q).....	27	90.9	92.8	111.9	60.6	95.5	130.7	117.4	102.9	93.6

NOTE: FOR THE EXPANSIONS BEGINNING IN JULY 1921, JULY 1924, NOVEMBER 1927, AND APRIL 1958, THE PEAK HAD BEEN PASSED AND A REFERENCE CONTRACTION WAS UNDER WAY BY THE MONTH SHOWN IN THE SECOND COLUMN. SEE APPENDIX A FOR THE REFERENCE PEAK DATES AND EARLIER ISSUES OF BUSINESS CYCLE DEVELOPMENTS FOR THE LEVELS REACHED ON THOSE DATES.

NA Not available.

<sup>1</sup>Based on period from February 1961 (current trough) to latest month for which data are available.

<sup>2</sup>Except for 1961, changes are computed in a 3-term moving average of the seasonally adjusted series.

<sup>3</sup>Comparisons are made for this series on the basis of (a) the period 27 months after the February 1961 trough (actual expenditures) and (b) the period 33 months after the same period (anticipated expenditures for 4th quarter 1963).

## Cyclical Patterns

Table 8.--PERCENT CHANGE FROM REFERENCE TROUGH LEVELS AS MEASURED AT DESIGNATED MONTHS AFTER THE REFERENCE TROUGH DATES IN THE 9 MOST RECENT EXPANSIONS

For series with a "months for cyclical dominance" (MCD) of "1" or "2" (series 1, 17, 19, 23, 41, 43, 47, 52, 54, 55, 62, 64, and 66), the figure for the reference trough month is used as the base. For series with an MCD of "3" or more (series 2, 3, 6, 7, 9, 13, 14, 24, 29, and 51), the average of the 3 months centered on the reference trough month is used as the base. The base for quarterly series (series 16, 49, 50, 61, and 67) is the reference trough quarter. See also MCD footnote to appendix C.

Selected series	Months after reference trough <sup>1</sup>	Percent change from reference trough of expansion, beginning in--								
		July 1921	July 1924	Nov. 1927	Mar. 1933	June 1938	Oct. 1949	Aug. 1954	Apr. 1958	Feb. 1961
<b>NBER LEADING INDICATORS</b>										
1. Average workweek of production workers, manufacturing.....	30	+4.6	+4.8	-5.9	+3.9	+13.5	+1.5	+1.8	+2.6	+2.3
2. Accession rate, manufacturing.....	29	NA	+56.3	-38.2	+22.0	+37.8	+19.0	+17.1	+14.7	-5.0
3. Layoff rate, manufacturing (inverted).....	29	NA	+9.3	-32.4	+30.3	+115.8	+92.9	+46.7	+28.0	+50.0
6. Value of manufacturers' new orders, durable goods industries.....	30	+171.6	+11.4	-38.4	+155.2	+258.6	+75.6	+36.4	+22.1	+25.5
7. New private nonfarm dwelling units started.....	30	+141.9	+39.2	-54.9	+154.5	+179.0	-11.5	-24.6	+13.4	+20.2
9. Construction contracts awarded for commercial and industrial bldgs., floor space <sup>2</sup> ....	29	+38.6	+50.4	-10.8	+75.2	+280.0	+12.5	+40.1	+39.3	+21.9
13. Number of new business incorporations.....	29	+5.7	+28.1	-4.3	-14.2	-16.0	-0.8	+12.3	+35.6	+7.6
14. Current liabilities of bus. failures (inv.).....	30	+9.1	+13.3	-31.1	+145.3	+62.8	-20.6	-34.0	-24.8	+58.5
16. Corporate profits after taxes (Q).....	27	NA	+78.6	0.0	NA	+281.2	+12.7	+42.5	+22.2	+39.6
17. Price per unit of labor cost index.....	30	NA	NA	NA	NA	NA	-0.6	+3.7	+5.6	+2.0
19. Index of stock prices, 500 common stocks.....	30	+35.2	+48.4	+40.3	+86.4	+3.1	+49.4	+41.5	+26.9	+14.2
23. Index of industrial materials prices.....	30	+47.1	-3.2	-18.3	+74.2	+42.7	+26.2	+10.1	+10.5	-5.1
24. Value of manufacturers' new orders, machinery and equipment industries.....	30	NA	NA	NA	NA	NA	+79.7	+55.3	+29.2	+23.5
29. Index of new private housing units authorized by local building permits.....	30	NA	NA	NA	NA	NA	-24.2	+0.4	+26.8	
<b>NBER ROUGHLY COINCIDENT INDICATORS</b>										
41. Number of employees in nonagricultural establishments.....	30	+26.8	+9.6	-2.2	+23.4	+19.4	+13.2	+9.0	+6.4	+7.0
43. Unemployment rate, total (inverted).....	30	NA	NA	NA	+37.8	+84.3	+153.0	+50.3	+23.7	+28.3
47. Index of industrial production.....	30	+53.3	+30.0	+4.1	+65.5	+70.5	+31.3	+20.0	+21.9	+21.5
49. Gross national product in current dollars (Q).....	27	+24.0	+18.8	+7.0	+31.3	+23.7	+32.7	+18.8	+15.2	+15.8
50. Gross national product in 1954 dollars (Q).....	27	+24.1	+16.1	+7.7	+13.3	NA	+19.3	+12.0	+11.4	+12.8
51. Bank debits outside NYC, 343 centers.....	30	+19.6	+19.8	+1.8	+44.1	+28.8	+35.0	+27.9	+21.5	+23.6
52. Personal income.....	30	+32.1	+12.3	+2.2	+43.5	+25.3	+30.6	+19.4	+14.4	+14.7
54. Sales of retail stores.....	30	+16.7	+8.8	-2.7	+45.0	+40.9	+18.4	+18.9	+10.7	+15.6
55. Index of wholesale prices, all commodities other than farm products and foods.....	30	+4.3	-1.4	-5.3	+16.7	+1.3	+13.7	+9.5	+2.1	-0.1
<b>NBER LAGGING INDICATORS</b>										
61. Business expenditures on new plant and equipment, total (Q): <sup>3</sup>										
a.....	27	+58.9	+54.9	+18.8	+136.8	+76.1	+51.9	+35.8	+18.4	+12.4
b.....	33	+49.5	+37.9	-13.9	+178.6	NA	+44.0	+38.0	+11.6	+21.6
62. Index of labor cost per unit of output, total manufacturing.....	30	-9.9	-11.0	-7.7	+18.2	-5.5	+15.5	+4.2	-4.0	-1.9
64. Manufacturers' inventories, book value.....	29	NA	NA	NA	+26.3	+14.6	+51.4	+22.1	+6.2	+10.1
66. Consumer installment debt.....	29	NA	NA	NA	+59.5	+46.5	+42.8	+39.2	+26.8	+20.5
67. Bank rates on short-term business loans, 19 cities (Q).....	27	-15.7	+5.8	+16.3	-22.2	-2.2	+30.2	+23.0	+19.2	+0.8

NOTE: FOR THE EXPANSIONS BEGINNING IN JULY 1921, JULY 1924, NOVEMBER 1927, AND APRIL 1958, THE PEAK HAD BEEN PASSED AND A REFERENCE CONTRACTION WAS UNDER WAY BY THE MONTH SHOWN IN THE SECOND COLUMN. SEE APPENDIX A FOR THE REFERENCE PEAK DATES AND EARLIER ISSUES OF BUSINESS CYCLE DEVELOPMENTS FOR THE LEVELS REACHED ON THOSE DATES.

NA Not available.

<sup>1</sup>Based on period from February 1961 (current trough) to latest month for which data are available.

<sup>2</sup>Except for 1961, changes are computed in a 3-term moving average of the seasonally adjusted series.

<sup>3</sup>Comparisons are made for this series on the basis of (a) the period 27 months after the February 1961 trough (actual expenditures) and (b) the period 33 months after the same period (anticipated expenditures for 4th quarter 1963).

Table 9--PERCENT OF SPECIFIC PEAK LEVELS AND PERCENT CHANGE FROM SPECIFIC TROUGH LEVELS AS MEASURED AT DESIGNATED MONTHS AFTER THE SPECIFIC TROUGH DATES IN THE 9 MOST RECENT EXPANSIONS

For series with a "months for cyclical dominance" (MCD) of "1" or "2" (series 1, 17, 19, 23, 41, 43, 47, 52, 53, and 54), the figure for the specific peak (trough) month is used as the base. For series with an MCD of "3" or more (series 9, 13, 24, and 29), the average of the 3 months centered on the specific peak (trough) month is used as the base. The base for quarterly series (series 49 and 50) is the specific peak (trough) quarter. See also MCD footnote to appendix C.

Selected series	Months after specific trough <sup>1</sup>	July 1921	July 1924	Nov. 1927	Mar. 1933	June 1938	Oct. 1949	Aug. 1954	Apr. 1958	Feb. 1961
Percent of specific peak prior to reference expansion beginning in year shown										
BER LEADING INDICATORS										
1. Average workweek of production workers, manufacturing.....	32	NA	*95.0	*84.1	73.6	94.4	NSC	*98.5	*93.7	99.3
9. Construction contracts awarded for commercial and industrial bldgs., floor space <sup>2</sup> ...	26	*40.8	*105.2	*99.4	17.8	168.6	41.0	NSC	95.0	<sup>3</sup> 116.2
13. Number of new business incorporations.....	30	*79.6	*93.3	*98.1	*63.1	50.2	59.5	NSC	*126.2	93.2
17. Price per unit of labor cost index.....	30	NA	NA	NA	NA	NA	*97.2	*88.2	*97.5	97.4
19. Index of stock prices, 500 common stocks....	34	*90.7	139.1	NSC	28.9	NA	141.1	186.3	*110.1	118.8
23. Index of industrial materials prices.....	32	*59.5	*75.0	*45.5	65.7	NA	*95.5	*62.5	*84.9	89.0
24. Value of manufacturers' new orders, machinery and equipment industries.....	34	NA	NA	NA	NA	NA	*154.1	103.7	*95.6	117.9
29. Index of new private housing units authorized by local building permits.....	32	NA	*66.4	95.1						
BER ROUGHLY COINCIDENT INDICATORS										
41. Number of employees in nonagricultural establishments.....	30	*87.4	*95.1	*88.8	84.4	106.5	107.4	105.2	*101.7	104.7
43. Unemployment rate, total (inverted).....	27	NA	NA	NA	NA	87.4	113.0	60.7	*64.7	90.5
47. Index of industrial production.....	31	*104.5	106.1	*94.3	75.4	115.4	117.1	108.1	*102.8	112.4
49. Gross national product in current dollars(Q)	27	NA	NSC	NSC	66.2	103.7	125.5	114.2	112.4	115.0
50. Gross national product in 1954 dollars (Q).....	27	NA	NSC	NSC	79.6	NA	116.5	107.2	107.6	110.7
52. Personal income.....	32	NA	*109.3	112.2	71.9	NA	125.6	117.4	113.8	<sup>3</sup> 114.7
53. Labor income in mining, mfg., and construc.	30	NA	NA	NA	62.5	116.7	128.9	115.0	*106.4	112.3
54. Sales of retail stores.....	28	100.0	NSC	NSC	74.4	105.9	NSC	109.4	*106.8	111.9
Percent change from specific trough related to reference expansion beginning in year shown										
BER LEADING INDICATORS										
1. Average workweek of production workers, manufacturing.....	32	**11.0	*+4.8	*-12.1	-0.8	+13.2	+5.2	**+2.8	*-0.5	+4.9
9. Construction contracts awarded for commercial and industrial bldgs., floor space <sup>2</sup> ...	26	**97.5	*+67.6	*+28.7	+84.2	+271.1	+31.8	NSC	+38.9	<sup>3</sup> +24.9
13. Number of new business incorporations.....	30	*+14.0	*+24.8	*+7.0	*+1.2	-37.1	+0.6	NSC	*+38.7	+9.0
17. Price per unit of labor cost index.....	30	NA	NA	NA	NA	NA	*+4.5	*+4.3	*+5.6	+2.0
19. Index of stock prices, 500 common stocks....	34	**33.8	+63.4	NSC	+89.5	NA	+69.9	+109.6	*+33.2	+32.1
23. Index of industrial materials prices.....	32	**+45.9	*+1.7	*-36.3	+76.6	NA	*+41.6	*+19.7	*+7.3	-2.7
24. Value of manufacturers' new orders, machinery and equipment industries.....	34	NA	NA	NA	NA	NA	*+104.8	+73.8	*+29.0	+26.6
29. Index of new private housing units authorized by local building permits.....	32	NA	*+7.5	+27.6						
BER ROUGHLY COINCIDENT INDICATORS										
41. Number of employees in nonagricultural establishments.....	30	**+26.8	*+9.6	*-6.3	+23.4	+19.4	+13.2	+9.0	*+6.2	+7.0
43. Unemployment rate, total (inverted).....	27	NA	NA	NA	+44.0	+59.4	+141.0	+43.0	*+24.7	+29.7
47. Index of industrial production.....	31	**+53.3	+30.0	*+2.0	+62.3	+74.4	+30.0	+20.1	*+20.0	+21.6
49. Gross national product in current dollars(Q)	27	NA	NSC	NSC	+31.3	+23.7	+30.2	+17.3	+16.4	+15.8
50. Gross national product in 1954 dollars (Q).....	27	NA	NSC	NSC	+18.2	NA	+19.3	+11.3	+12.5	+12.8
52. Personal income.....	32	+32.4	*+13.5	+15.2	+46.0	NA	+32.4	+18.9	+15.1	<sup>3</sup> +15.3
53. Labor income in mining, mfg., and construc.	30	NA	NA	NA	+75.7	+59.6	+47.5	+24.5	*+15.6	+18.3
54. Sales of retail stores.....	28	*+17.2	NSC	NSC	+45.0	+31.1	NSC	+15.0	*+11.0	+16.6

NOTE: FOR MANY OF THE COMPARISONS SHOWN--INDICATED BY AN ASTERISK (\*)--THE SPECIFIC PEAK HAD BEEN PASSED AND A SPECIFIC CONTRACTION WAS UNDER WAY BY THE MONTH SHOWN IN THE SECOND COLUMN. SEE APPENDIX B FOR THE SPECIFIC PEAK DATES AND EARLIER ISSUES OF BUSINESS CYCLE DEVELOPMENTS FOR THE LEVELS REACHED ON THOSE DATES.

NA Not available. NSC No specific cycle related to reference dates.

<sup>1</sup>Based on period from most recent specific trough of each series to the latest month for which data are available.

The number is the same for each expansion. Specific trough and peak dates are shown in appendix B.

<sup>2</sup>Except for 1961, changes are computed in a 3-term moving average of the seasonally adjusted series.

<sup>3</sup>Since no specific trough or peak has been designated, figures are based on the low (L) shown in table 1 and the high preceding that low.



# Appendices

Appendix A---BUSINESS CYCLE REFERENCE DATES AND DURATION OF EXPANSIONS AND CONTRACTIONS  
IN THE UNITED STATES: 1854 TO 1961

Business cycle reference dates	Duration in months				
	Contraction (trough from pre- vious peak)	Expansion (trough to peak)	Cycle		
			Trough from previous trough	Peak from previous peak	
Trough	Peak				
December 1854	June 1857.....	xxx	30	xxx	xxx
December 1858	October 1860.....	18	22	48	40
June 1861	April 1865.....	8	46	30	54
December 1867	June 1869.....	32	18	78	50
December 1870	October 1873.....	18	34	36	52
March 1879	March 1882.....	65	36	99	101
May 1885	March 1887.....	38	22	74	60
April 1888	July 1890.....	13	27	35	40
May 1891	January 1893.....	10	20	37	30
June 1894	December 1895.....	17	18	37	35
June 1897	June 1899.....	18	24	36	42
December 1900	September 1902.....	18	21	42	39
August 1904	May 1907.....	23	33	44	56
June 1908	January 1910.....	13	19	46	32
January 1912	January 1913.....	24	12	43	36
December 1914	August 1918.....	23	44	35	67
March 1919	January 1920.....	7	10	51	17
July 1921	May 1923.....	18	22	28	40
July 1924	October 1926.....	14	27	36	41
November 1927	August 1929.....	13	21	40	34
March 1933	May 1937.....	43	50	64	93
June 1938	February 1945.....	13	80	63	93
October 1945	November 1948.....	8	37	88	45
October 1949	July 1953.....	11	45	48	56
August 1954	July 1957.....	13	35	58	48
April 1958	May 1960.....	9	25	44	34
February 1961		9		34	
Average, all cycles:					
26 cycles, 1854-1961.....		19	30	49	149
10 cycles, 1919-1961.....		15	35	50	254
4 cycles, 1945-1961.....		10	36	46	346
Average, peacetime cycles:					
22 cycles, 1854-1961.....		20	26	45	46
8 cycles, 1919-1961.....		16	28	45	548
3 cycles, 1945-1961.....		10	32	42	641

NOTE: Underscored figures are the wartime expansions (Civil War, World Wars I and II, and Korean War), the postwar contractions, and the full cycles that include the wartime expansions.

<sup>1</sup>25 cycles, 1857-1960.

<sup>4</sup>21 cycles, 1857-1960.

<sup>2</sup>9 cycles, 1920-1960.

<sup>5</sup>7 cycles, 1920-1960.

<sup>3</sup>3 cycles, 1948-1960

<sup>6</sup>2 cycles, 1948-1960.

Source: National Bureau of Economic Research.

## Appendices

## Appendix B--SPECIFIC TROUGH AND PEAK DATES FOR SELECTED BUSINESS INDICATORS

Specific trough and peak dates are the actual dates that each series reaches its trough and peak. Reference dates are those dates designated as the trough or peak of business activity as a whole. This table shows, for selected leading and coincident series, the specific dates related to reference dates in 9 recent business cycles.

Selected series	Specific trough dates for reference expansions beginning in--								
	Feb. 1961	Apr. 1958	Aug. 1954	Oct. 1949	June 1938	Mar. 1933	Nov. 1927	July 1924	July 1921
<b>NER LEADING INDICATORS</b>									
1. Average workweek of production workers, manufacturing.....	Dec.'60	Apr.'58	Apr.'54	Apr.'49	Jan.'38	Jun.'32	Apr.'28	Jul.'24	Feb.'21
9. Construction contracts awarded for commercial and industrial bldgs...	NSC	Jun.'58	NSC	Aug.'49	Sep.'38	Oct.'32	Sep.'27	Jul.'24	Mar.'21
13. Number of new business incorporations.....	Jan.'61	Nov.'57	NSC	Feb.'49	Sep.'39	Dec.'34	Dec.'26	Jun.'24	Jan.'21
17. Price per unit of labor cost index.....	Feb.'61	Apr.'58	Dec.'53	May '49	NA	NA	NA	NA	NA
19. Index of stock prices, 500 stocks.....	Oct.'60	Dec.'57	Sep.'53	Jun.'49	Apr.'38	Jun.'32	NSC	Oct.'23	Aug.'21
23. Index of industrial mat. prices.....	Dec.'60	Apr.'58	Feb.'54	Jun.'49	Jun.'38	Jul.'32	Aug.'28	Jun.'24	Jul.'21
24. Value of mfrs.' new orders, machinery and equipment industries..	Oct.'60	Feb.'58	Jan.'54	Apr.'49	NA	NA	NA	NA	NA
29. Index of new private housing units authorized by local bldg. permits.	Dec.'60	Feb.'58	NA						
<b>NER ROUGHLY COINCIDENT INDICATORS</b>									
41. Number of employees in nonagricultural establishments.....	Feb.'61	May '58	Aug.'54	Oct.'49	Jun.'38	Mar.'33	Jan.'28	Jul.'24	Jul.'21
43. Unemployment rate, total (inverted)	May '61	Jul.'58	Sep.'54	Oct.'49	Jun.'38	May '33	NA	NA	NA
47. Index of industrial production.....	Jan.'61	Apr.'58	Apr.'54	Oct.'49	May '38	Jul.'32	Nov.'27	Jul.'24	Apr.'21
49. GNP in current dollars (Q).....	1stQ'61	1stQ'58	2ndQ'54	2ndQ'49	2ndQ'38	1stQ'33	NSC	NSC	4thQ'21
50. GNP in 1954 dollars (Q).....	1stQ'61	1stQ'58	2ndQ'54	2ndQ'49	1stQ'38	3rdQ'32	NSC	NSC	NA
52. Personal income.....	NSC	Feb.'58	Mar.'54	Oct.'49	May '38	Mar.'33	4thQ'26	2ndQ'24	2ndQ'21
53. Labor income in mining, manufacturing and construction.....	Feb.'61	Apr.'58	Aug.'54	Oct.'49	Jun.'38	Mar.'33	NA	NA	NA
54. Sales of retail stores.....	Apr.'61	Mar.'58	Jan.'54	NSC	May '38	Mar.'33	NSC	NSC	Mar.'22
Selected series	Specific peak dates for reference contractions beginning in--								
	May 1960	July 1957	July 1953	Nov. 1948	May 1937	Aug. 1929	Oct. 1926	May 1923	Jan. 1920
<b>NER LEADING INDICATORS</b>									
1. Average workweek of production workers, manufacturing.....	Apr.'59	Nov.'55	Apr.'53	NSC	Dec.'36	Oct.'29	Nov.'25	Nov.'22	NA
9. Construction contracts awarded for commercial and industrial bldgs...	NSC	Mar.'56	NSC	Mar.'46	Jul.'37	Jan.'29	Sep.'25	Aug.'22	Dec.'19
13. Number of new business incorporations.....	Apr.'59	Feb.'56	NSC	Jul.'46	Dec.'36	Jan.'29	Oct.'25	Apr.'23	Dec.'19
17. Price per unit of labor cost index.....	May '59	Dec.'55	Feb.'51	Jan.'48	NA	NA	NA	NA	NA
19. Index of stock prices, 500 stocks.....	Jul.'59	Jul.'56	Jan.'53	Jun.'48	Feb.'37	Sep.'29	NSC	Mar.'23	Jul.'19
23. Index of industrial mat. prices....	Nov.'59	Dec.'55	Feb.'51	Jan.'48	Mar.'37	Mar.'29	Nov.'25	Mar.'23	Apr.'20
24. Value of mfrs.' new orders, machinery and equipment industries..	Dec.'59	Nov.'56	Feb.'51	Apr.'48	NA	NA	NA	NA	NA
29. Index of new private housing units authorized by local bldg. permits.	Nov.'58	Feb.'55	NA						
<b>NER ROUGHLY COINCIDENT INDICATORS</b>									
41. Number of employees in nonagricultural establishments.....	Apr.'60	Mar.'57	Jul.'53	Jul.'48	Jul.'37	Aug.'29	Jan.'26	Jul.'23	Jan.'20
43. Unemployment rate, total (inverted)	Feb.'60	Mar.'57	Jun.'53	Jan.'48	Jul.'37	NA	NA	NA	NA
47. Index of industrial production.....	Jan.'60	Feb.'57	Jul.'53	Jul.'48	May '37	Jul.'29	Mar.'27	May '23	Feb.'20
49. GNP in current dollars (Q).....	2ndQ'60	3rdQ'57	2ndQ'53	4thQ'48	3rdQ'37	3rdQ'29	NSC	NSC	NA
50. GNP in 1954 dollars (Q).....	2ndQ'60	3rdQ'57	2ndQ'53	4thQ'48	3rdQ'37	3rdQ'29	NSC	NSC	NA
52. Personal income.....	NSC	Aug.'57	Oct.'53	Oct.'48	Jun.'37	Aug.'29	2ndQ'26	1stQ'24	NA
53. Labor income in mining, manufacturing and construction.....	May '60	Jul.'57	Jul.'53	Sep.'48	May '37	Sep.'29	NA	NA	NA
54. Sales of retail stores.....	Apr.'60	Aug.'57	Mar.'53	NSC	Sep.'37	Sep.'29	NSC	NSC	Jul.'20

NA not available. NSC No specific cycle related to reference dates.

Appendix C.--AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY AND  
 QUARTERLY BUSINESS CYCLE SERIES

Monthly series	$\overline{CI}$	$\overline{I}$	$\overline{C}$	$\overline{I}/\overline{C}$	MCD	$\overline{I}/\overline{C}$ for MCD span	Average duration of run			
							CI	I	C	MCD
<b>NBER LEADING INDICATORS</b>										
1. Average workweek of production workers, manufacturing.....	.47	.40	.24	1.67	2	.95	2.57	1.84	9.82	4.26
2. Accession rate, manufacturing.....	6.03	5.31	2.08	2.55	3	.92	2.53	1.82	8.35	4.58
30. Nonagricultural placements, all industries.....	3.41	3.14	1.35	2.33	3	.55	1.86	1.49	8.67	4.53
3. Layoff rate, manufacturing.....	11.94	10.46	5.45	1.92	3	.76	2.49	1.80	7.59	5.16
4. Number of persons on temporary layoff, all industries.....	19.43	17.91	4.88	3.67	5	.81	1.66	1.49	7.10	3.37
5. Average weekly initial claims for unemployment insurance, State programs.....	6.98	6.12	3.16	1.94	2	.97	1.86	1.53	9.28	3.61
6. Value of manufacturers' new orders, durable goods industries.....	5.58	5.00	2.00	2.50	3	.75	1.94	1.48	10.64	3.34
24. Value of manufacturers' new orders, machinery and equipment industries.....	6.07	5.55	2.19	2.53	3	.73	1.68	1.47	12.82	3.56
9. Construction contracts awarded for commercial and industrial buildings.....	12.37	11.94	2.75	4.34	5	.80	1.62	1.49	8.28	3.45
10. Contracts and orders for plant and equipment.....	6.37	5.94	2.19	2.71	3	.79	1.59	1.37	8.56	3.55
7. New private nonfarm dwelling units started <sup>1</sup> .....	7.34	7.31	1.14	6.41	6	( <sup>2</sup> )	1.53	1.53	6.13	2.32
29. Index of new private housing units authorized by local building permits.....	3.90	3.44	1.67	2.06	3	.60	1.93	1.53	12.43	3.70
13. Number of new business incorporations.....	3.04	2.57	1.30	1.98	3	.65	2.19	1.69	9.31	3.50
14. Current liabilities of business failures.....	16.32	16.05	2.81	5.71	6	( <sup>1</sup> )	1.57	1.42	5.32	2.22
15. Number of business failures with liabilities of \$100,000 and over.....	17.30	17.36	3.26	5.33	6	( <sup>1</sup> )	1.54	1.39	6.21	2.82
17. Price per unit of labor cost index.....	.73	.58	.41	1.41	2	.83	2.59	1.77	9.94	3.79
19. Index of stock prices, 500 common stocks.....	2.58	1.90	1.49	1.28	2	.79	2.40	1.73	13.55	3.36
37. Purchased materials, percent reporting higher inventories.....	7.34	5.67	3.67	1.54	2	.94	2.91	1.79	9.79	4.02
26. Buying policy--production materials, percent reporting commitments 60 days or longer.....	6.17	5.53	2.76	2.00	3	.66	1.90	1.61	11.55	4.63
32. Vendor performance, percent reporting slower deliveries.....	11.30	8.12	7.20	1.13	2	.77	3.18	2.01	9.94	3.59
23. Index of industrial materials prices.....	2.15	1.39	1.52	.91	1	.91	2.61	1.84	11.46	2.61
<b>NBER ROUGHLY COINCIDENT INDICATORS</b>										
41. Number of employees in nonagricultural establishments.....	.39	.22	.29	.76	1	.76	3.41	2.04	10.44	3.41
42. Total nonagricultural employment, labor force survey.....	.41	.32	.22	1.45	2	.72	1.94	1.62	15.73	3.44
43. Unemployment rate, total.....	4.73	3.46	2.91	1.19	2	.64	2.44	1.68	7.67	3.48
40. Unemployment rate, married males.....	5.80	4.62	3.26	1.42	2	.67	2.05	1.38	10.50	4.37
45. Average weekly insured unemployment rate, State programs.....	5.63	2.80	4.12	.68	1	.68	3.47	2.44	8.28	3.47
46. Index of help-wanted advertising in newspapers.....	3.28	2.10	2.26	.93	1	.93	2.30	1.40	8.13	2.30
47. Index of industrial production.....	1.16	.66	.81	.81	1	.81	4.25	1.87	11.00	4.25
51. Bank debits outside NYC, 343 centers.....	1.56	1.42	.70	2.03	3	.58	1.82	1.55	10.64	4.32
52. Personal income.....	.69	.43	.54	.80	1	.80	3.39	1.69	21.29	3.39
53. Labor income in mining, manufacturing, and construction.....	1.12	.69	.84	.82	1	.82	3.63	1.80	13.55	3.63
54. Sales of retail stores.....	.78	.63	.44	1.43	2	.85	2.53	1.80	9.54	3.62
55. Index of wholesale prices, all commodities other than farm products and foods.....	.30	.11	.27	.41	1	.41	5.22	2.53	12.85	5.22
<b>NBER LAGGING INDICATORS</b>										
62. Index of labor cost per unit of output, total manufacturing.....	.67	.48	.41	1.17	2	.69	2.52	1.67	9.94	4.14
64. Book value of manufacturers' inventories, all manufacturing industries.....	.88	.27	.40	.34	1	.34	7.84	2.16	13.55	7.84
65. Book value of manufacturers' inventories of finished goods, all manufacturing industries.....	.99	.49	.84	.58	1	.58	6.48	2.61	13.55	6.48
66. Consumer installment debt.....	1.19	.28	1.12	.25	1	.25	8.79	2.29	18.56	8.79

See footnotes at end of table.

## Appendices

## Appendix C.--AVERAGE PERCENTAGE CHANGES AND RELATED MEASURES FOR MONTHLY AND QUARTERLY BUSINESS CYCLE SERIES--Continued

Monthly series	$\overline{CI}$	$\overline{I}$	$\overline{C}$	$\overline{I}/\overline{C}$	MCD	$\overline{I}/\overline{C}$ for MCD span	Average duration of run			
							CI	I	C	MCD
OTHER U.S. SERIES WITH BUSINESS CYCLE SIGNIFICANCE										
81. Index of consumer prices.....	.28	.17	.23	.74	1	.74	4.48	2.18	19.89	4.48
82. Federal cash payments to the public.....	7.17	6.91	1.31	5.27	5	.92	1.47	1.39	7.59	2.30
83. Federal cash receipts from the public.....	7.49	7.23	1.46	4.95	5	.96	1.70	1.52	5.96	2.55
86. Exports, excluding military aid shipments, total.....	3.72	3.39	1.52	2.23	3	.69	1.89	1.51	7.84	4.08
87. General imports, total.....	3.52	3.02	1.32	2.29	3	.79	1.71	1.57	6.21	3.06
94. Index of construction contracts, total value.....	8.29	8.06	2.22	3.63	4	.96	1.67	1.47	7.26	2.93
90. Defense Department obligations, procurement.....	25.35	24.41	4.97	4.91	6	( <sup>2</sup> )	1.58	1.51	6.46	2.44
91. Defense Department obligations, total.....	15.57	15.00	2.88	5.21	5	.99	1.49	1.41	6.67	2.40
92. Military prime contract awards to U.S. business firms.....	29.19	29.33	6.21	4.72	6	( <sup>2</sup> )	1.61	1.50	5.38	2.76
96. Manufacturers' unfilled orders, durable goods industries.....	2.08	.64	1.97	.32	1	.32	5.96	2.14	16.70	5.96
INTERNATIONAL COMPARISONS OF INDUSTRIAL PRODUCTION										
121. OECD European countries, index of indust. prod...	1.32	1.03	.68	1.51	2	.82	2.91	1.95	17.11	5.28
122. United Kingdom, index of industrial prod.....	1.29	1.29	.49	2.63	3	.87	2.41	1.93	15.40	6.91
123. Canada, index of industrial production.....	.98	.88	.52	1.69	2	.98	3.44	2.27	15.50	6.13
125. West Germany, index of industrial production.....	1.61	1.15	.98	1.17	2	.64	2.46	1.62	17.78	4.08
126. France, index of industrial production.....	1.79	1.63	.65	2.51	3	.80	2.20	1.70	17.00	5.09
127. Italy, index of industrial production.....	1.70	1.61	.81	1.99	3	.63	2.27	1.67	22.00	9.50
128. Japan, index of industrial production.....	2.09	1.15	1.60	.72	1	.72	3.37	1.77	23.57	3.37
Quarterly series	$\overline{CI}$	$\overline{I}$	$\overline{C}$	$\overline{I}/\overline{C}$	QCD	$\overline{I}/\overline{C}$ for QCD span	Average duration of run			
							CI	I	C	QCD
NBER LEADING INDICATORS										
11. Newly approved capital appropriations, 602 manufacturing corporations.....	11.15	7.00	7.59	.92	1	.92	2.82	1.48	5.17	2.82
16. Corporate profits after taxes.....	7.66	4.54	5.35	.85	1	.85	2.83	1.65	3.64	2.83
18. Profits (before taxes) per dollar of sales, all manufacturing corporations.....	7.73	5.06	5.01	1.01	2	.51	2.83	1.42	5.67	3.85
22. Ratio, profits (after taxes) to income originating, corporate, all industries.....	5.78	3.73	4.17	.89	1	.89	2.89	1.49	5.50	2.89
NBER ROUGHLY COINCIDENT INDICATORS										
50. Gross national product in 1954 dollars.....	1.44	.65	1.13	.58	1	.58	3.19	1.50	5.10	3.19
49. Gross national product in current dollars.....	1.88	.69	1.59	.43	1	.43	4.25	1.42	6.38	4.25
57. Final sales (series 49 minus 21).....	1.60	.82	1.45	.57	1	.57	4.64	1.46	7.29	4.64
NBER LAGGING INDICATORS										
61. Business expenditures on new plant and equipment, total.....	3.61	1.49	2.94	.51	1	.51	4.64	1.55	5.67	4.64
63. Index of labor cost per unit of output, total gross national product.....	1.02	.60	.84	.71	1	.71	2.68	1.31	7.29	2.68
67. Bank rates on short-term business loans, 19 cities.....	2.96	1.94	2.37	.82	1	.82	2.68	1.55	6.38	2.68
97. Backlog of capital appropriations, manufacturing.....	6.27	1.26	5.79	.22	1	.22	4.38	1.94	5.83	4.38

NOTE: This table does not reflect late revisions of series 1, 2, 3, and 41.

<sup>1</sup>Period covered, May 1959 to April 1963. <sup>2</sup>Not computed for series when MCD is "6" or more.

The following are brief definitions of the measures shown in this table. More complete explanations appear in Electronic Computers and Business Indicators, by Julius Shiskin, issued as Occasional Paper 57 by the National Bureau of Economic Research, 1957 (reprinted from Journal of Business, October 1957).

" $\overline{CI}$ " is the average month-to-month (for quarterly series, quarter-to-quarter) percentage change, without regard to sign, in the seasonally adjusted series. " $\overline{I}$ " is the same for the irregular component, which is obtained by dividing the cyclical component into the seasonally adjusted series. " $\overline{C}$ " is the same for the cyclical component which is a smooth, flexible moving average.

## NOTES FOR APPENDIX C--Continued

"MCD" represents months for cyclical dominance. The average (without regard to sign) percentage changes in the irregular component and cyclical component are computed for 1-month spans (Jan.-Feb., Feb.-Mar., etc.), 2-month spans (Jan.-Mar., Feb.-Apr., etc.), up to 5-month spans. MCD is the shortest span for which the average change (without regard to sign) in the cyclical component is larger than the average change (without regard to sign) in the irregular component. Since changes are not computed for spans greater than 5 months, all series with an MCD greater than "5" are shown as "6". MCD is small for smooth series and large for erratic series. "QCD" represents quarters for cyclical dominance. It is the shortest span (in quarters) for which the average change (without regard to sign) in cyclical component is larger than the irregular average (without regard to sign) in component.

" $\bar{I}/\bar{C}$ " is a measure of the relative smoothness (small values) or irregularity (large values) of the seasonally adjusted series. For monthly series, it is shown for 1-month spans and for spans of the period of MCD. When MCD is "6", no  $\bar{I}/\bar{C}$  ratio is shown for the MCD period. For quarterly series,  $\bar{I}/\bar{C}$  is shown for 1-quarter spans and QCD spans.

"Average duration of run" is a measure of smoothness, and is equal to the average number of consecutive monthly changes in the same direction in any series of observations. When there is no change between 2 months, it is assumed that the "no change" is a change in the same direction as the preceding change. The average duration of run is shown for the seasonally adjusted series CI, irregular component I, cyclical component C, and the MCD moving average. The MCD moving average is a moving average (with the number of terms equal to MCD) of the seasonally adjusted series. For quarterly series, average duration of run is the average number of consecutive quarterly changes in the same direction.

## Appendixes

Appendix D--CURRENT SEASONAL ADJUSTMENT FACTORS FOR BUSINESS CYCLE SERIES ADJUSTED BY BUREAU OF THE CENSUS OR NBER  
(NOVEMBER 1962 TO DECEMBER 1963)

Series	1962		1963											
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4. Number of persons on temporary layoff, all industries.....	83.4	102.6	121.0	116.2	97.5	82.2	92.2	83.8	99.9	140.7	89.7	88.4	81.9	102.7
5. Av. weekly initial claims for unemploy. insurance, State.....	104.8	132.5	140.7	109.1	97.3	94.3	82.7	82.6	103.0	85.5	77.7	90.9	105.0	132.5
13. No. of new business incorp. <sup>1</sup> .....	86.8	94.3	120.0	91.0	104.2	106.8	106.7	96.8	103.5	93.8	88.3	101.4	82.5	94.3
14. Cur. liabilities of bus. failures.....	99.9	89.9	105.1	105.2	107.5	112.3	96.7	96.4	84.7	111.7	92.8	97.4	100.2	89.3
15. No. of bus. failures with liabilities of \$100,000 and over....	96.0	88.6	111.3	113.6	116.8	110.4	94.9	105.5	89.3	95.9	89.6	88.7	96.0	88.5
17. Price per unit of labor cost index.....	101.1	98.1	98.6	100.6	100.9	100.5	100.0	101.0	95.4	99.3	101.8	103.4	101.2	98.1
18. Profits (before taxes) per dol. of sales, all mfg. corp. <sup>2</sup> .....	98.8	...	...	97.9	...	...	106.1	...	...	97.4	...	...	98.8	...
30. Nonagri. placements, all indus....	94.7	82.0	82.3	77.4	90.2	99.8	109.0	110.9	103.3	116.7	120.6	113.2	95.0	81.8
37. Purchased materials, percent reporting higher inventories.....	96.2	98.8	109.0	108.5	110.6	109.4	102.1	96.1	93.9	91.6	91.9	92.5	96.1	98.9
55. Index of wholesale prices, exc. farm products and foods.....	99.9	100.0	100.2	100.1	100.1	100.2	100.0	99.9	99.9	99.8	99.9	99.8	99.9	100.0
62. Index of labor cost per unit of output, total manufacturing.....	98.8	101.7	101.9	99.7	99.5	99.8	100.0	98.9	104.7	100.4	98.2	96.5	98.8	101.7
81. Index of consumer prices.....	100.1	100.0	99.8	99.9	99.9	100.0	99.8	99.9	100.0	99.9	100.2	100.1	100.1	100.0
82. Federal cash payments to public.....	104.8	98.3	90.8	98.9	92.3	98.9	103.2	106.0	95.6	114.4	93.8	102.8	105.2	98.3
83. Federal cash receipts from pub....	102.3	105.1	70.0	113.1	129.6	79.0	119.3	149.5	49.0	113.3	124.4	46.0	102.8	105.1
90. Defense Department obligations-- procurement.....	96.0	117.4	76.9	91.6	132.2	81.2	69.2	192.7	77.9	78.1	97.1	89.2	96.0	117.4
91. Defense Dept. oblig., total.....	90.7	105.0	90.6	90.0	117.7	96.4	84.7	148.2	96.7	86.7	97.2	95.4	90.7	105.0
92. Military prime contract awards to U.S. business firms.....	72.9	108.5	89.5	79.7	125.3	93.2	92.8	216.4	68.0	72.9	92.7	90.4	72.9	108.5
128. Japan, index of industrial production.....	99.6	103.2	94.3	100.3	109.1	99.4	100.2	100.4	98.8	96.5	98.6	99.8	99.6	103.2

These data are not published by the source agency in seasonally adjusted form. Seasonal adjustments were made by the Bureau of the Census or the National Bureau of Economic Research, Inc. Seasonally adjusted data prepared by the source agency will be substituted whenever they are published.

<sup>1</sup>Factors are a combination of seasonal and trading day factors.

<sup>2</sup>Quarterly series; figures are placed in middle month of quarter.

## Appendix E.--SUMMARY DESCRIPTION OF X-9 AND X-10 VERSIONS OF THE CENSUS METHOD II SEASONAL ADJUSTMENT PROGRAM

Introduction

Two versions of the Census Method II seasonal adjustment program have been used to compute the new seasonal factors shown in appendix D. These versions, designated X-9 and X-10 (Experimental Programs 9 and 10), replaced, in February 1962, the method described in "Electronic Computers and Business Indicators," NBER Occasional Paper No. 57, and the X-3 version described in "Tests and Revisions of Bureau of the Census Methods of Seasonal Adjustments," Census Technical Paper No. 5. (The X-3 program had been used for about 2 years as the standard program prior to February 1962.) The X-9 program incorporates several changes from the original method and is recommended for general use for a wide range of series. The X-10 program incorporates the changes in X-9 plus a major departure from earlier versions of Method II. This major change in X-10 is the selection of the seasonal factor curve for each month on the basis of an estimate of the size of the irregular component for that month relative to the amount of moving seasonality present in an estimate of the seasonal factor. The selection of curves available for each month includes a 3-, 3x3-, 3x9-, and 3x15-term moving average and a horizontal straight line. This is in contrast to the original and X-9 methods of treating all months the same, either with the use of a 3x3 or 3x5 moving average.

These programs are available for several different electronic computers. Detailed specifications and additional information can be obtained by writing to the Office of the Chief Economic Statistician, Bureau of the Census, Washington 25, D.C.

Description of the X-9 Program

The changes from the original program included in X-9 are listed below:

(1) In the original version of Method II described in Occasional Paper No. 57 and X-3, "the six missing SI ratios at the beginning of the series are supplied by extending the first available ratios for the corresponding months back to the initial month of the series. The six missing ratios at the end are supplied similarly" (Occasional Paper No. 57, step 6d). In the new programs the missing values are not supplied until after the seasonal factors have been computed. They are then supplied by extending (i.e., repeating) the first available seasonal factor back to the initial month and similarly for the last available factor at the end of the series. The effect of this change is to reduce the weight given the end SI ratios in the computation of the preliminary seasonal factors.

(2) Extremes are replaced by averaging the two preceding and two following ratios, instead of averaging the extreme with the preceding and following values. This revision completely eliminates SI ratios defined as extreme from the computations of the seasonal factors (included in X-3).

(3) The 5-term moving average, used in computing the sigma control limits, is extended by repeating the last moving-average value instead of repeating the average of the last two ratios and taking the moving average. This revision improves the prospects that extreme values at the end of series will be identified as such.

(4) The method of centering or forcing the seasonal factors to add to 1200 for the calendar year has been replaced with a moving centering device which makes the seasonal factors add as closely as possible to 1200 for any 12-month period. The centering is done after the computation of a 3- or 5-term moving average for each month. Following the centering, a 3-term moving average is applied to each month. In the original version and X-3, the ratios were centered before moving averages were computed for each month.

(5) Less weight is given to the ratios for end years in the computation of the seasonals. To extend the 3x5 moving average, the end four ratios instead of the end two are averaged to obtain additional SI ratios (included in X-3). To extend the 3x3 moving average, the end three ratios, instead of the end two, are averaged to obtain additional SI ratios.

Description of the X-10 Program

The X-10 program includes the first four changes listed above for the X-9. In addition, for each month, the curve to measure the seasonal factor is selected on the basis of an estimate of the size of the irregular component relative to the amount of change in the seasonal factor. This estimate of the relative amount of irregular to changing seasonality is designated the moving seasonality ratio. Moving seasonality ratios are calculated as follows: First, a 7-term moving average of the SI ratios is computed for each month and taken as an estimate of the seasonal factor; this 7-term moving average is divided into the SI ratios and the resultant series is taken as an estimate of the irregular series. Next, the average year-to-year percent change without regard to sign is computed in the 7-term moving average and in the irregular series. Then, the average change in the estimate of the irregular to the average change in the estimate of the seasonal is calculated. This is the moving seasonality ratio. A moving average is then chosen for each month on the basis of this ratio as is shown in the table below. In constructing this table, the parameters have been chosen to select a curve which reduces the year-to-year percentage change in the residual irregular remaining in the estimate of the seasonal to about one-half the year-to-year percentage change in the seasonal.<sup>1</sup>

Moving seasonality ratio	Average of SI ratios for seasonal factor curve
0 to 1.49	3-term moving average
1.50 to 2.49	3x3-term moving average
2.50 to 4.49	3x5-term moving average
4.50 to 6.49	3x9-term moving average
6.50 to 8.49	3x15-term moving average
8.50 and over	All ratios (stable)

In the actual computations, the moving seasonality ratio selects from 1-, 3-, 5-, 9-, 15-term moving average and an average of all the ratios. After a selection is made and the appropriate moving average is calculated, a moving centering device is employed to make each 12-month period add as close to 1200 as possible. Finally, further smoothing of the data for each month is carried out by a 3-term moving average.

It has been possible thus far to conduct only a limited amount of testing of the X-10 program and for this reason especially careful review of such adjustments is required. In some cases the original Method II or other approaches will give similar or perhaps better results. The Bureau of the Census is continuing research intended to improve seasonal adjustment techniques and will provide new variants of the general method as is warranted from the evidence. The results of our experimental work will be reported in detail as soon as feasible.

<sup>1</sup>The variable seasonal factor technique was developed by Dr. Stephen N. Marris, Head of the Statistics Division of the Organisation for Economic Cooperation and Development, and is described in Seasonal Adjustment on Electronic Computers, pp. 257-309 (OECD, Paris, 1961). Copies can be obtained from the regional office: Organisation for European Economic Cooperation, 1346 Connecticut Avenue, N.W., Washington, D.C., price \$9.50.) The Bureau of the Census and the OECD have cooperated in further theoretical and empirical development of this technique since completion of the OECD paper, and the X-10 program differs slightly from that in the original description.

## Appendices

Appendix F.--PERCENT CHANGE FOR SELECTED SERIES OVER CONTRACTION AND EXPANSION PERIODS OF BUSINESS CYCLES:  
1920 TO 1961

Contractions: Reference peak to reference trough	Percent change: Reference peak to reference trough							43. Unemployment rate		
	41. Em- ployees in non- agri. es- tablish- ments	47. Index of indus- trial produc- tion	50. GNP in 1954 dollars (Q) <sup>1</sup>	49. GNP in cur- rent dollars (Q) <sup>1</sup>	51. Bank debits outside NYC	52. Per- sonal income	54. Re- tail sales	Change in rate, peak to trough	Rate at peak	Rate at trough
Jan. 1920-July 1921.....	NA	-31.6	NA	-19.7	-22.5	-21.9	-6.2	+27.9	24.0	21.9
May 1923-July 1924.....	NA	-18.0	-0.3	-2.3	-3.1	0.0	0.0	+2.3	23.2	25.5
Oct. 1926-Nov. 1927.....	NA	-5.9	+2.3	+0.4	+8.7	+0.9	0.0	+2.2	21.9	24.1
Aug. 1929-Mar. 1933.....	-31.6	-51.8	-28.0	-49.6	-61.9	-50.8	-47.4	+25.4	30.0	25.4
May 1937-June 1938.....	-10.4	-31.7	-8.9	-11.9	-16.5	-10.9	-18.5	+8.8	11.2	20.0
Feb. 1945-Oct. 1945 <sup>4</sup> .....	-7.8	-31.4	NA	-10.9	-1.0	-4.0	+9.9	+2.2	1.1	3.3
Nov. 1948-Oct. 1949.....	-5.1	-8.5	-1.4	-3.3	-4.0	-4.3	0.0	+3.6	4.0	7.6
July 1953-Aug. 1954 <sup>5</sup> .....	-3.4	-9.1	-3.0	-1.8	+1.6	-0.2	-0.7	+3.4	2.6	6.0
July 1957-Apr. 1958.....	-4.1	-14.1	-3.8	-2.5	-3.1	-0.3	-1.6	+3.2	4.2	7.4
May 1960-Feb. 1961.....	-1.9	-5.9	-1.8	-0.7	+2.4	+0.7	-1.9	+1.8	5.2	7.0
Median: <sup>6</sup>										
All contractions.....	-5.7	-16.0	-2.4	-2.9	-3.1	-2.2	-1.2	+3.3	3.6	7.2
Excluding postwar con- tractions.....	-6.5	-16.0	-2.6	-2.9	-3.6	-2.3	-1.8	+3.4	4.0	7.5
4 contractions since 1948.....	-3.8	-8.8	-2.4	-2.2	-0.8	-0.2	-1.2	+3.3	4.1	7.2
Expansions: Reference trough to reference peak	Percent change: Reference trough to reference peak							43. Unemployment rate		
	41 Em- ployees in non- agri. es- tablish- ments	47. Index of indus- trial produc- tion	50. GNP in 1954 dollars (Q) <sup>1</sup>	49. GNP in cur- rent dollars (Q) <sup>1</sup>	51. Bank debits outside NYC	52. Per- sonal income	54. Re- tail sales	Change in rate, trough to peak	Rate at trough	Rate at peak
July 1921-May 1923.....	NA	+64.2	NA	+25.1	+23.5	+29.6	+13.3	+8.7	21.9	23.2
July 1924-Oct. 1926.....	NA	+30.4	+12.4	+14.7	+18.9	+13.2	+8.8	+3.6	25.5	21.9
Nov. 1927-Aug. 1929.....	NA	+24.1	+12.6	+13.3	+20.4	+12.2	+2.7	-0.9	24.1	23.2
Mar. 1933-May 1937.....	+40.2	+119.9	+42.1	+73.9	+78.4	+76.3	+85.6	-14.2	25.4	11.2
June 1938-Feb. 1945 <sup>4</sup> .....	+45.9	+183.3	NA	+169.6	+131.7	+157.3	+102.0	-18.9	20.0	1.1
Oct. 1945-Nov. 1948.....	+17.2	+21.9	+3.3	+34.9	+51.5	+28.5	+59.7	+0.3	3.3	3.6
Oct. 1949-July 1953 <sup>5</sup> .....	+17.7	+50.0	+27.4	+43.5	+49.3	+41.5	+26.3	-5.0	7.6	2.6
Aug. 1954-July 1957.....	+8.9	+19.7	+13.5	+23.8	+28.6	+22.8	+20.0	-1.8	6.0	4.2
Apr. 1958-May 1960.....	+7.2	+25.2	+11.9	+15.3	+21.2	+13.6	+10.8	-2.2	7.4	5.2
Median: <sup>6</sup>										
All expansions.....	+17.4	+35.2	+12.8	+27.9	+33.8	+27.0	+19.9	-3.6	7.0	3.3
Excluding wartime ex- pansions.....	+13.0	+26.6	+12.5	+21.5	+24.4	+21.6	+14.7	-2.5	6.3	3.7
4 expansions since 1945.....	+13.0	+23.5	+12.7	+29.4	+39.0	+25.6	+23.2	-2.0	6.7	3.9

For series with a "months for cyclical dominance" (MCD) of "1" or "2" (series 41, 43, 47, 52, and 54), the figure for the reference peak (trough) month is used as the base. For series with an MCD of "3" or more (series 51), the average of the 3 months centered on the reference peak (trough) month is used as the base. The base for quarterly series (series 49 and 50) is the reference peak (trough) quarter. See also MCD footnote to appendix C.

<sup>1</sup>The most recent quarterly reference dates are as follows: 2d quarter 1958 (trough); 2d quarter 1960 (peak); and 1st quarter 1961 (trough). For earlier dates, see *Business Cycle Indicators* (NEBR), vol. 1, p. 670.

<sup>2</sup>Based on average for the calendar year.

<sup>3</sup>Differs from figure for same date in expansion (contraction) part of table because of change in series used.

<sup>4</sup>World War II contraction or expansion period.

<sup>5</sup>Korean War contraction or expansion period.

<sup>6</sup>The median is an average of the middle 2 or 3 items.

Source: National Bureau of Economic Research, Inc.

Appendix materials retain their original alphabetical designations. Therefore, when appendixes are dropped from an issue, the continuity is interrupted.

"Appendix G.—Historical Data for Selected Series", not included in this issue, appeared in the August 1963 issue.

## Appendices

### Appendix H.--BUSINESS CYCLE INDICATORS: THE KNOWN AND THE UNKNOWN

The following paper, by Julius Shiskin, was presented at the 34th session of the International Statistical Institute in Ottawa, Canada, on August 24, 1963, and is being published in the Review of the ISI, Vol. 31, No. 3. It is printed here as an aid to the understanding of business indicators and methods and concepts followed in the Business Cycle Developments report. A summary appears at the end.

#### INTRODUCTION

During the past few years business indicators have been more and more widely used by business and academic economists in diagnosing current business conditions and forecasting short-term trends. Newspapers and magazines report on the progress of "leading" and "lagging" series periodically. High government officials, including the President himself, follow the course of these series.

Thus in a press conference held on July 5, 1962, President Kennedy was asked the question, "Could you spell out a little bit the formula that you will use to make the decision whether you will ask a tax cut this year or not..." The President responded, "...we will look at the indicators, the basic indicators which have had some historical significances in previous years as indication ...a prognosis for the economy."

There is a great deal of scattered knowledge about business cycles in the popular press and a detailed account can be found in the technical literature. This paper attempts to bring together an account of what is known about business indicators, what are the problems of using them, and what research is needed to improve their usefulness.

There are, of course, other approaches to the study of business fluctuations, with different merits and limitations; for example, the econometric model approach, through which forecasts of gross national product and its composition can be made mathematically on the basis of the historical relations between consumption, private investment, government and various components of these major aggregates. The stakes involved in accurate forecasts of business and business fluctuations, particularly recessions, are so great that the country cannot afford to neglect any approach which offers some hope of success.

It is most convenient to present the available knowledge about business indicators around Business Cycle Developments, a monthly publication of the Department of Commerce. This report presents data, in charts and tables, for a large number of economic time series arranged so as to maximize their usefulness for business cycle studies. It contains data on the current state and recent experience of the economy in a form designed to aid students of business conditions. These data are the record of the past and are not in themselves an appraisal of the future. But they constitute some of the vital raw materials from which judgments about the economic outlook are fashioned.

In its selection of data and in grouping data analytically, Business Cycle Developments follows the economic indicators approach to business cycle analysis which has been developed over the years largely by the National Bureau of Economic Research in New York. A brief description of this approach and the statistical measures used is

<sup>1</sup>Further background on the approach and fuller explanations of the measures used in the monthly report may be found in Signals of Recession and Recovery, by Julius Shiskin issued in October 1961 by the National Bureau of Economic Research, New York (Occasional Paper No. 77). See also the following: Arthur F. Burns and Wesley Clair Mitchell, Measuring Business Cycles, National Bureau of Economic Research, 1946, especially chapter 1; Wesley C. Mitchell, What Happens During Business Cycles, National Bureau of Economic Research, 1951; and Business Cycle Indicators, Geoffrey H. Moore, Editor, volume 1, 1961. This paper is based upon material provided in these sources. For reference to other studies of business cycles, see these sources and the bibliography at the end of this paper.

given in the introduction which appears in Business Cycle Developments each month.<sup>1</sup>

It may be helpful at the outset to provide some perspective on the usefulness of the indicator approach through the following two quotations by prominent students of the business cycle:

"My overall judgment would be that their judicious use does provide a valuable addition to the forecasters' tool box. The indicators have been of some help in every post-war cyclical turn, but have been more helpful in some than in others. They have also given some false signals." (Professor R.A. Gordon, University of California, "Alternative Approaches to Forecasting," The Review of Economics and Statistics, August 1962).

"In conclusion, the...statistical indicators, like most other tools of economic analysis, probably have considerably more merit than their most uninformed critics see and probably more limitations than their most ardent advocates like to recognize. The difficulties in applying the indicators to forecasting on a current basis... should demonstrate that these indicators do not provide a certain and easy method of forecasting. They have not brought automation to forecasting, and they do not threaten the professional judgment of economists with technological unemployment. However, I believe that the postwar experience does show that, properly used, the indicators can be a very valuable tool for the forecaster." (Frank E. Morris, Proceedings of the Business and Economic Statistics Section, American Statistical Association, September 11, 1957).

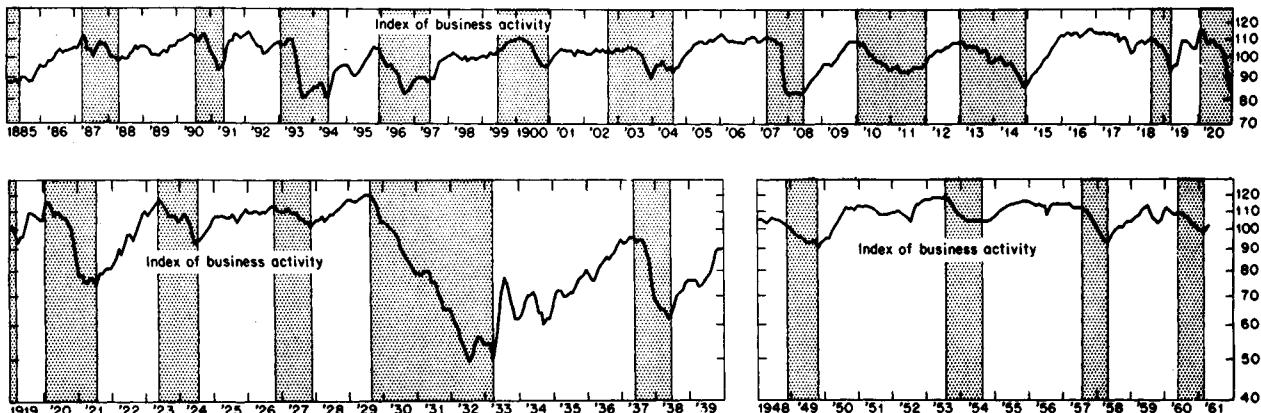
#### EXPLANATION OF THE BUSINESS CYCLE

The "business cycle" concept has been developed from the sequence of events discerned in the historical study of the movements of economic activity. Though there are many crosscurrents and variations in the pace of business activity, periods of business expansion appear to cumulate to peaks. As they cumulate, contrary forces tend to gain strength bringing about a reversal in business activity and the onset of a recession. As a recession continues, forces making for expansion gradually emerge until they become dominant and a recovery begins. This pattern of expansion and contraction may be seen in chart 1 showing an index of business activity covering the years 1885-1961 plotted against the background of the reference cycles. The regularities as well as some of the irregularities of the pattern are evident from the chart.

Monthly business cycle peaks and troughs have been dated by the National Bureau of Economic Research for the period 1854-1961. Over this span expansion has prevailed 61 percent of the time and recession 39 percent. If war periods are disregarded, expansion has prevailed 56 percent of the time and recession 44 percent. A recession-free society is one of the major goals of economic policy. But in view of this historical record, it is prudent to take the possibilities of recession into account in considering short-term economic prospects.

## Appendices

Chart 1. AN INDEX OF BUSINESS ACTIVITY, 1885 TO 1961



The index of business activity shown above is published by the Cleveland Trust Company and is adjusted for trend. Shaded areas represent business contractions; unshaded areas, expansion.

Though the recurrence of successive waves of business activity is generally acknowledged, many different explanations of the underlying causes for these business fluctuations have been advanced. Some economists lay primary stress on the role of investments in inventory and fixed capital; others emphasize the central role of the supply of money and credit and the interest rate; still others look for clues in the relations among prices, costs, and profits. All of these factors undoubtedly influence the course of business activity, and some are more important at some times than at others, but there is no general agreement as to which are usually more crucial to the process. The Business Cycle Developments report provides data bearing on all, or most, of these factors. The analyst using the report must therefore exercise his own judgment as to the state of the economy, using those measures which he considers most significant.

For purposes of illustration, it may be useful to summarize one view of the sequence of events during a business cycle, the view espoused by the late Wesley C. Mitchell and Arthur F. Burns, leading students of business cycles. In the advanced stage of an expansion, business concerns frequently encounter obstacles to further growth. New supplies of materials and components may come into short supply; business loans may be less readily available and interest on such loans higher. Shortages of some types of labor may occur. Competitive pressures make it somewhat hazardous to raise prices, even though costs, such as wages and interest rates, tend to be rising more rapidly than in the early stages of the advance. The outlook for further expansion becomes less favorable and a "squeeze" on profits or profit rates may develop. When this occurs, businessmen become more cautious and are likely to reduce their commitments for the future. As the prospects for forward profits appear to become more uncertain, investment commitments, involving inventories, new orders for machinery and equipment, and contracts for commercial and industrial construction tend to drop. Sometimes the reaction is promptly apparent in the stock market where changes in outlook can be registered quickly. Reductions in overtime and hours of work and the closing down of marginal activities are also symptoms which may appear at this juncture.

However, current production and employment which flow from earlier business commitments continue to rise, often to all-time highs. Actual expenditures for plants and equipment—contracts for which were necessarily made long in advance—may continue to go up even after the peak of production and employment has been passed. Thus, at the very time when forward commitments, in the form of new contracts and new orders, are being reduced and forces set in motion which may lead to a reversal in business activi-

ty, production and employment may be at full strength and plant and equipment expenditures may continue to rise for some months. However, the decisions to reduce investment commitments finally begin to affect production and employment and a decline in aggregate economic activity sets in. During a recession, when facilities and supplies become more readily available, inventories tend to be low, costs often decline and, as future profit prospects appear improved, a reverse movement gets underway and the forces which lead to a new expansion gradually come to the fore. In this way, the effects of investment decisions by businessmen are spread over many months and among many different economic processes.

This highly generalized and over-simplified pattern is, of course, affected by international developments and by government policies and programs which in modern society play a significant role in the economy. The impact of "external" events must necessarily be considered carefully in any study of cyclical trends.

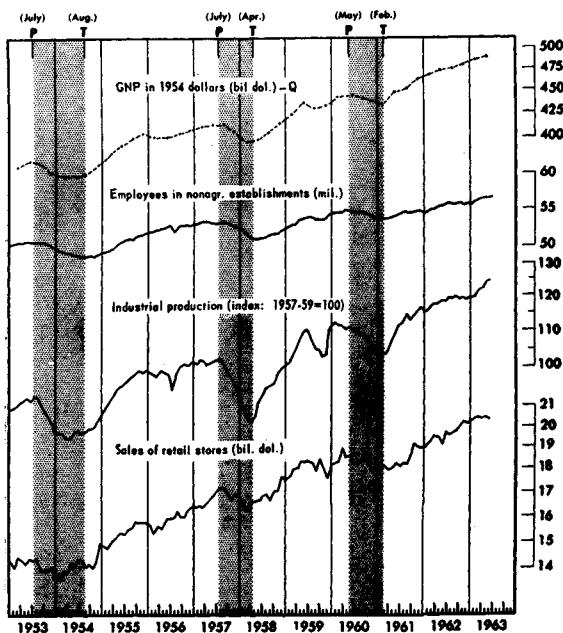
## LEADING, COINCIDENT, AND LAGGING INDICATORS

Although economists differ with regard to the relative importance of various economic indicators as prime determinants of cyclical fluctuations and the reliability of the indicators at different stages of the business cycle, there is a widespread view and much historical evidence that business indicators tend to move through the cyclical course in consistent but different time sequences. Accordingly, in the Business Cycle Developments report, economic indicators useful for business cycle studies are grouped into three major categories and are designated as "leading," "roughly coincident," and "lagging." This classification of the series is based upon the general theoretical framework alluded to above and upon extensive empirical tests of the performance of the series conducted since World War I primarily by the National Bureau of Economic Research of New York under the leadership of Wesley C. Mitchell, Arthur F. Burns, and Geoffrey H. Moore. Professor Edwin B. Frickey, Warren M. Persons, and Joseph Schumpeter of Harvard might be mentioned among many others at universities, research organizations, and government agencies who have made significant contributions to the study of business cycle phenomena in the past.

One group of economic time series, which may be referred to as "roughly coincident," relate primarily to aggregate economic activity. This group includes such output measures as gross national product and industrial production, as well as employment, income, bank debits, retail sales, and wholesale prices. The movements of these

activities tend to coincide with, and in a sense, measure and define the business cycle. Several of these series are shown in chart 2.

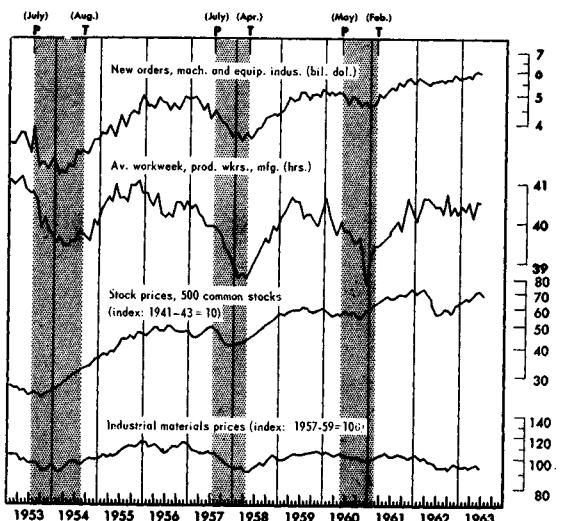
Chart 2. RECENT EXPANSIONS AND RECESSIONS DEFINED BY ROUGHLY COINCIDENT SERIES



It should be noted that the individual series do not always "coincide" precisely with each other or with the "reference" dates; that is, the dates selected as the turning points in aggregate economic activity. A composite of all the series would tend to demonstrate a more faithful "coincidence." This emphasizes the importance of studying many series rather than a few in making judgments as to the position and prospects of the economy.

As our economy is organized, certain activities frequently foreshadow changes in the aggregate economic activities which define the business cycle. For the most part,

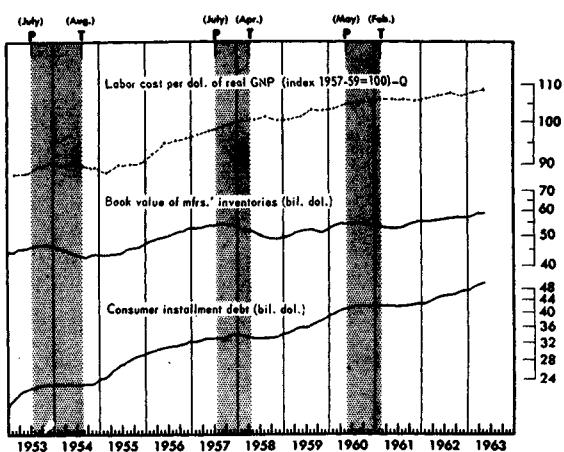
Chart 3. EARLY WARNING SIGNALS BY LEADING SERIES



these are measures of activities which reflect future production and employment; for example, new orders are placed, particularly for machinery and other types of equipment; contracts are let for the construction of new plants; investments in materials inventories are made and new businesses are started. Also, hours of work are adjusted and profit margins altered. Statistical measures of activities which foreshadow turning points in the business cycle are called "leading series." They are—in a manner of speaking—signals of things to come. (See chart 3.)

In contrast to these advance signals, there are some activities which have been observed to lag behind, or follow, aggregate economic activity. (See chart 4.) Some of these relate to business costs, which respond sluggishly to changing business conditions. This group includes such statistical series as labor cost per unit of output, bank interest rates, inventories of finished goods, and consumer debt. Some of the "lagging" activities, in their turn, contribute to an economic climate which is conducive to opposite changes in the activities measured by the leading series. For example, as various business costs decline during a recession, there is more incentive for business to place new orders and make new capital investments. By the same token when these costs rise during the latter part of an expansion, there is pressure to reduce or postpone new business commitments, and a contraction in activities may soon begin.

Chart 4. CONFIRMATION BY LAGGING SERIES



In utilizing these three categories of series, it should be borne in mind that the terms "leading," "coincident," and "lagging" are short-cut expressions summarizing important economic concepts and findings of many years of empirical research.

Students of the business indicators approach state that while the sequence of events varies from cycle to cycle, it is sufficiently orderly so that it is possible to make judgments about the pattern of the next stage of the cycle from developments during a given cyclical phase. The arrangement of the series in the Business Cycle Developments report is aimed at assisting in this process. But in order to improve our judgments, it is essential to examine certain other measures of economic activity which do not behave in a manner sufficiently consistent to be easily classified into one of the three foregoing groups. A number of such series are shown in the report including data relating to the rate of change in the money supply, consumer prices, Federal cash surplus or deficit as reflected in the balance of receipts and payments, military obligations, foreign trade and the balance of international payments. Most of these do not move up and down with the business cycle in an orderly and repetitive fashion (see chart 5). Indeed some represent exogenous factors which distort the normal course of the business cycle and suggest

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forces which may be harnessed to control it. Additional background information is provided by inclusion of production indexes for the principal industrial countries with which the United States trades. The publication of these other series in *Business Cycle Developments* is an implicit acknowledgment that the leading, coincident, and lagging indicators by themselves comprise an incomplete tool for current business analysis.

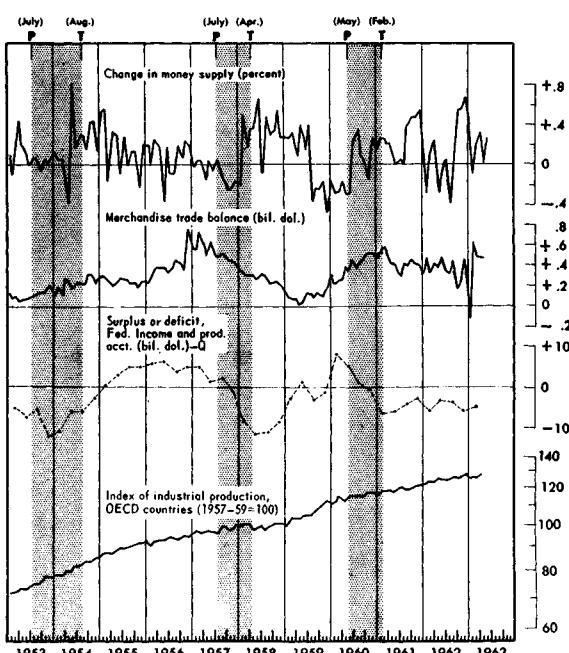
## ANALYTICAL MEASURES OF CURRENT TRENDS

As a further aid to understanding current and prospective business conditions, *Business Cycle Developments* (BCD) contains various analytical measures which are designed to show how widespread and how fast are the movements through the economy.

Generally, the scope narrows and the rate of change declines in the late stages of expansion and contraction. This knowledge about business cycles is taken into account by diffusion indexes and rates of change. These measures are closely correlated. Diffusion indexes show how widespread a recession or recovery is, whether it is continuing to spread, and are helpful in judging the effects of policies and developments that are likely to make it spread still further. On the other hand, rates of change indicate the magnitudes of change over different cyclical stages and different cycles. Diffusion indexes are occasionally somewhat smoother, particularly in periods of abrupt changes as, for example, during strikes.

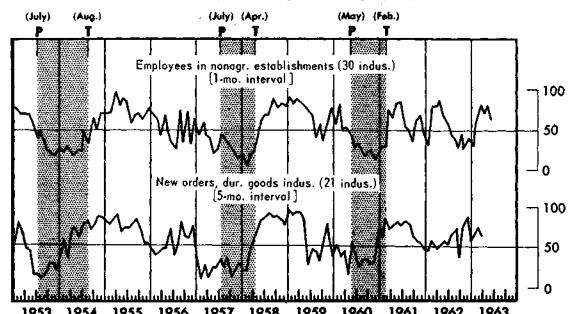
Diffusion indexes show the percentage of companies, industries, or geographic areas which are experiencing rises over the time interval measured (see BCD table 4). For example, of 30 industries measured, about 63 percent had increases in employment (apart from seasonal movements) in June 1962 compared with May 1962. In July 1962, some 48 percent of the industries experienced rises in employment. The diffusion indexes thus measure the scope or breadth of a fluctuation in total activity. Widespread increases are often associated with rapid growth in aggregate activity and widespread declines with sharp reductions. A rapid decline which is widespread is more likely to be

## Chart 5. OTHER SERIES WITH BUSINESS CYCLE SIGNIFICANCE



cyclically significant than one of narrow scope. The diffusion indexes are useful predictive tools because they almost always reach their highs and lows before the highs or lows in the corresponding aggregates, frequently leading by 6 months or more. Diffusion indexes are also helpful to an understanding of business conditions because they make clear that there is rarely a period, either during expansions or recessions, when business activities are all moving in the same direction. Some cross currents are to be expected at all times. The activities that are moving counter to the general tide often provide a clue to the eventual reversal of the tide. Finally, certain types of diffusion indexes show how widespread businessmen expected a rise in sales or orders to be, as compared with how things actually turned out. Hence they show current opinion as to the state of business, and sometimes reveal widespread errors of optimism or pessimism (see chart 6 and BCD table 5).

## Chart 6. DIFFUSION INDEXES



Certain series which represent rates of change (e.g. initial claims for unemployment insurance and inventory investment) are used as leading indicators. In addition, a tabulation of "rates of change" for the principal 72 business indicators shows how fast business is expanding or declining from month to month (see BCD table 2). It provides a quick summary of current movements of the key indicators. The average monthly change, from 1948 to 1961, for each series is also given to provide a perspective against which to judge recent changes. It should be noted that, as in the case of the diffusion indexes, month-to-month percentage changes are frequently erratic in their behavior.

The "direction of change" table (BCD table 6) shows, by pluses and minuses, which economic activities went up, which went down, and how long such movements have persisted. They are additional guides which indicate, in depth, how a recession or recovery spreads from one sector of the economy to another.

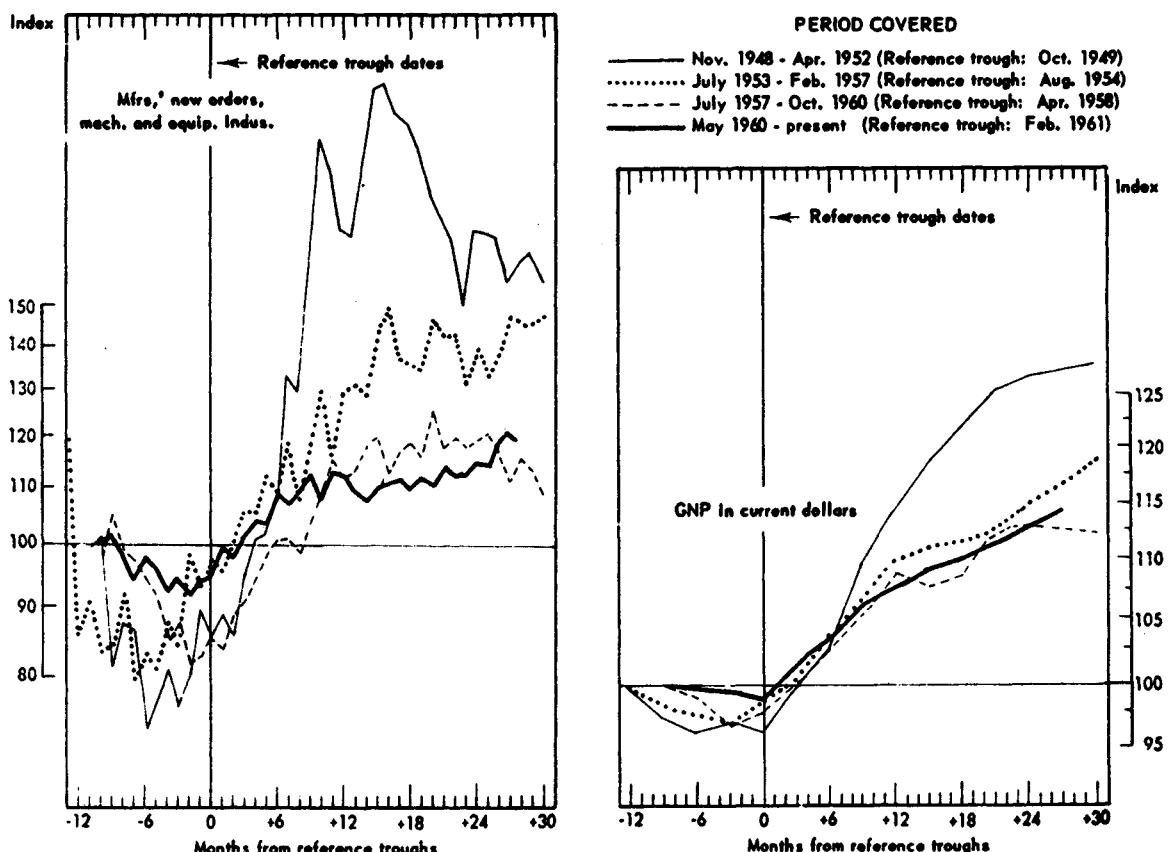
Finally, the cyclical patterns section of *Business Cycle Developments* includes charts and tables which compare the behavior of the indicators in the current business cycle phase with their behavior during the corresponding phase of previous business cycles. For example, comparisons are shown of the movements of series from previous business cycle peaks (reference peak levels); similar comparisons are shown of the movements of series from their previous cyclical low points (specific trough levels). Such data are helpful in placing a current movement in the historical perspective of previous cyclical developments (see chart 7).

## SUMMARY MEASURES

In studying the current economic situation, there is always a conflict between examining a wide variety of aspects of the economy, so as to be sure that all the relevant points are covered, and examining a few selected indicators so that it is easy to grasp the overall trends. Most business analysts move back and forth from a detailed

## Chart 7. COMPARISONS OF BUSINESS CYCLE PATTERNS

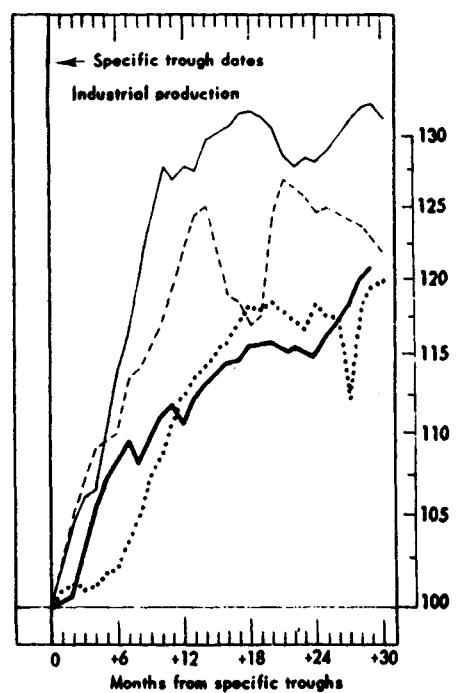
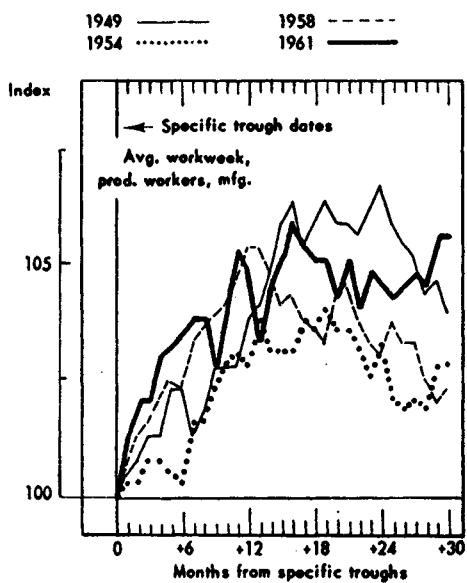
### REFERENCE CYCLE PATTERNS



### SPECIFIC CYCLE PATTERNS

**PERIOD COVERED**

From specific trough dates to 30 months later. Specific trough dates are the dates each series actually begins the expansion identified with the reference trough of--



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examination of many sectors to a broad view of the overall situation, and there is a feedback of information and insight from one view to the other.

The summarization of the large variety of data to highlight business cycle developments involves combining different kinds of economic series. Some such summaries, such as Gross National Product (GNP) in current and constant dollars, are widely used. But, for the most part, such summary measures cover only one aspect of economic activity, such as production, or prices, or income. It is appropriate to ask whether there is a conceptual basis for a broader type of summary which would combine different economic processes in a meaningful way.

Business cycles are characterized by coordinated movements among many diverse sectors of the economy, (e.g., production, employment, money flows, inventories, and prices) but not all (e.g., agricultural output). In order to provide a composite picture helpful in formulating a judgment about the overall performance of those sectors of the economy which do experience cyclical fluctuations, a broad but nevertheless selective type of summary is needed. Activities, such as production, employment, and prices, are heterogeneous in the sense that they cannot be added to any meaningful total. They are homogeneous, however, in the sense that they measure related aspects of business change, and undergo similar cyclical fluctuations. The combination of series measuring different economic processes provides a single measure of the complex of economic activities which experience business cycle fluctuations. For this reason, it is appropriate to combine them for business cycle studies (though not for certain other purposes, such as measuring long-term growth). Many students of business cycles have utilized such combinations; for example, Wesley C. Mitchell and Arthur F. Burns at the National Bureau of Economic Research and Edwin B. Frickey of Harvard University. Statements involving a crude concept of this sort, such as that recession is "widespread" or that "all the indicators are moving up," are frequently found in the daily press.

There are various ways of summarizing the data on business cycle developments. Of the different types of summaries that we have constructed for experimental purposes, each shows the overall cyclical pattern in a somewhat different light, and each has different merits and limitations. There probably is no one best way of summarizing the information and no single summary measure is ever likely to suffice for all purposes. The use of different summary measures together, and as supplements to the detailed series, is often enlightening. For example, after a decline in the comprehensive diffusion index for the leaders, one would look for confirmation to a decline in the diffusion index for the coincident series and, in the general index, for the leaders. If these declines take place, one would watch for a decline in the general index for the coincident series. While there are always some irregularities in the movements of these series, the use of all of them together, along with the component series from which they are constructed, makes possible a more reliable judgment on underlying cyclical trends.

These separate types of summary measures (a) highlight the cyclical timing and pattern of business cycles, (b) measure their scope, and (c) provide clues to the current vigor of cyclical forces. They are more useful when the individual series are classified according to their cyclical timing. Separate compilations have therefore been constructed for series which have in common a tendency to lead, for series which measure different aspects of aggregate economic activity and are used to determine business cycle turning points (roughly coincident), and for series which have a common tendency to lag. Each such combination provides a measure of the performance of a different phase of the decision making processes which result in the business cycle. These combinations contribute a composite picture of the economy as it moves through expansion and contraction.

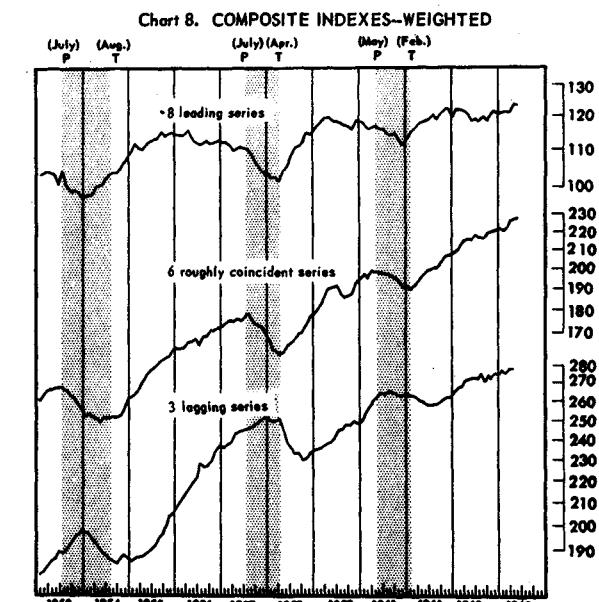
## Amplitude-adjusted composite indexes

The summary measures referred to as "amplitude-adjusted" composite indexes are constructed by standardizing the month-to-month percentage changes of each series so that all the series are expressed in comparable units. To do this, each series is adjusted so that its average month-to-month change, without regard to direction, is "1". This method facilitates the interpretation of the current month's change both with respect to earlier periods and other series. The individual amplitude-adjusted series are weighted and combined into an index. This index is also adjusted so that its average month-to-month change is "1". The amplitude-adjusted indexes provide a composite measure of the amplitude and pattern of the business cycle, readily interpreted currently. For example, if the index shows an increase of 2.0 in the current month, it is rising twice as fast as its average rate of change in the past; if the increase is 0.5, it is rising only half as fast as the historical average.

A substantial number of general indexes have now been constructed. For the leading series, a weighted index of eight principal indicators has thus far been most frequently used. A second index of 12 different leading series moves very similarly and adds support to the view that the cyclical trends in these series are due to a large variety of causes and not to isolated phenomena. An index of all 20 monthly leading series is a little smoother than either of such indexes, and has been used more often in recent months. Weighted indexes of six principal coincident series and three principal lagging series are also computed each month. The weights are the historical records of the timing and conformity of each series. Studies have demonstrated that these indexes are smoother than any of the individual series included in them and have better timing and conformity records. Studies have also demonstrated that the short-term changes in the weighted and unweighted indexes are very similar. Small differences are to be expected since the indicators were selected from more than 1,000 candidates because of their superior business cycle performance. Some of these indexes are illustrated in chart 8.

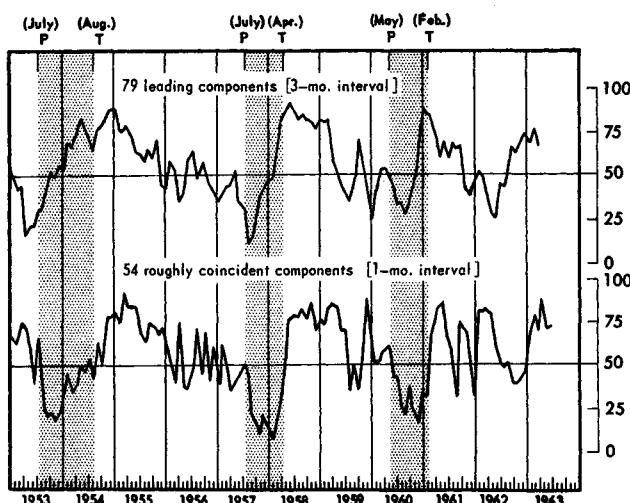
## Comprehensive diffusion indexes

Diffusion indexes covering a variety of economic processes make up another type of summary measure. Dif-



fusion indexes based upon 79 leading series and upon 54 coincident series have proven useful because they reduce, though by no means eliminate, irregularities (see chart 9). Although many economic series are included, these indexes cover a limited number of economic processes. They have, therefore, been supplemented by 3 diffusion indexes based upon the 24 leading monthly series, 8 coincident series and 7 lagging series. This second type of comprehensive diffusion index includes fewer series, but more economic processes.

Chart 9. COMPREHENSIVE DIFFUSION INDEXES



Even these comprehensive diffusion indexes are quite erratic, but they provide a useful supplement to other summary measures and to the detailed information shown in the monthly report. Suppose, for example, that the general index of the leading series has been declining for several months and that this decline is in part due to declines of some of the most reliable leading indicators, such as orders and contracts for machinery and equipment, hours worked, and stock prices. The diffusion index constitutes information as to whether the movement is, or is not, as widespread as in other instances in the past when a recession was about to begin. A decline that is widespread is more likely to be "cyclically significant" than one that is not.

These diffusion indexes are unweighted; that is, each component is given equal weight. Conceptually, it would be better to weight diffusion indexes by measures of their cyclical performance, as in the case of the amplitude-adjusted composite indexes. This would provide a measure of the scope of a recession or recovery that would give heavier weight to processes that have had a more consistent cyclical performance in the past. However, it would be a large job to determine the weights for the most comprehensive diffusion indexes since so many series are involved. The weighted indexes would probably be quite similar to the unweighted ones, because only series which would be expected, on the basis of the behavior of their aggregates, to have good cyclical performance, are included. Consequently, it has not seemed worthwhile to go to the expense of making up the weighted indexes.

#### Timing distributions

"Timing distributions" of current highs or lows show the number of individual series reaching highs during each of the recent months of an expansion—or lows during the recent months of contraction. The highs or lows designated during a current cyclical phase will not necessarily be specific cycle turning points. Thus as new high levels are reached during an expansion, the current highs will be moved ahead. On the other hand, lows designated for the previous cyclical phase usually do identify specific cycle turning points. Comparisons of the current timing distributions with those for periods around earlier business cycle troughs and peaks are helpful in appraising the evidence of a prospective business cycle turning point.

Detailed timing distributions for the post-World War II expansions are shown in table 3 of *Business Cycle Developments* each month. Various types of summary distributions can be made up from these. One that is useful is presented here.

The summary measures are still exploratory, and for this reason most are not included in the official Government publication, *Business Cycle Developments*. Similar measures can, however, be obtained monthly from various private organizations.<sup>2</sup>

<sup>2</sup>Statistical Indicator Reports, Statistical Indicator Associates, Leonard H. Lempert, Director, North Egremont, Mass. A similar report for Canada is issued by W. A. Beckett Associates, Toronto, Canada. A commentary on business conditions is included with these reports.

#### DISTRIBUTION OF HIGHS IN BUSINESS CYCLE INDICATORS DURING RECENT MONTHS COMPARED WITH PERIODS BEFORE PREVIOUS BUSINESS CYCLE PEAKS

Number of months before benchmark date that latest high was reached	Percent distribution of highs, when benchmark date was—						
	6 months before peak	3 months before peak	Peak	March 1963	April 1963	May 1963	June 1963
Average: 4 business cycle peaks (1948, 1953, 1957, 1960)							Current expansion
<u>23 leading indicators</u> <sup>1</sup>							
Total.....	100	100	100	100	100	100	100
6 months or more.....	52	64	77	61	57	57	61
3, 4, or 5 months.....	24	17	17	13	4	4	9
1 or 2 months.....	16	13	2	9	13	17	21
Benchmark date.....	8	6	4	17	26	22	9
<u>11 roughly coincident indicators</u>							
Total.....	100	100	100	100	100	100	100
6 months or more.....	5	14	16	18	36	36	27
3, 4, or 5 months.....	27	9	36	18	0	0	9
1 or 2 months.....	30	39	21	9	9	28	18
Benchmark date.....	38	38	27	55	55	36	46

<sup>1</sup>Based on 18 leading indicators in 1948, 19 in 1953, and 23 from 1957 through June 1963.

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### KNOWN AND UNKNOWN

The study of previous cycles over the past 100 years provides the basis for the organization of data in the Business Cycle Developments report and for explanations of the sequence of events which permits us to make intelligent use of these data. In addition to the knowledge that has accumulated about the timing sequence of economic processes and the behavior of diffusion indexes and rates of change, certain key findings relevant to short-term analysis emerge from studies of successive ebb and flow of business activities. These findings may be summarized as follows:

a. Since 1854, peacetime business cycles have averaged about 46 months. On the average, expansions have run about 26 months and recessions about 20 months. Since World War II, the recessions have been shorter and milder, lasting only about a year from peak to trough. There is, however, considerable variation around these averages, and contractions have sometimes been longer than expansions.

b. The severity of a recession in its early stages is often correlated to its ultimate severity. Historically, when industrial production and employment have dropped sharply during the first 6 months of a recession, the full decline during the recession has usually been large; when the initial declines were small, the recession has usually been mild. The leading series provide advance clues to these developments.

c. The rates of advance in aggregate economic activity during expansions have been more nearly uniform in different cycles than the rates of decline during different cyclical contractions. Thus a more accurate estimate can ordinarily be made of the rate of advance at the beginning of an expansion than can be made of the rate of decline at the beginning of a contraction.

d. The rate of expansion has usually been more rapid in the early stages of an upswing—the first 6 or 9 months—than in the later stages.

e. The rate of rise during the early stages of an expansion has ordinarily been more rapid after a severe contraction than after a mild one.

f. Despite slower rates of expansion, recoveries have generally attained and exceeded previous peak levels much more quickly after mild contractions because the amount of ground to be recovered is smaller than after a severe contraction.

g. The amount of expansion relative to the previous business cycle peak during the early stages of expansion is usually correlated with the level ultimately attained in that expansion. Thus the relative standing of the leading series during the first 6 months provides an early indication of the level of aggregate economic activity that will eventually be reached. The relative standing of the coincident series a few months later provides a similar indication. Thus, after about 6 to 9 months of expansion, the standing of the indicators compared to previous expansions may be helpful in forecasting the ultimate peak level of the current expansion.

In addition to this knowledge about business cycles, there are certain other kinds of information that are useful to bear in mind in trying to interpret current trends. For example, the knowledge of a prospective reversal in business conditions does not come at any one point in time. At first there may be scattered and tentative indications of recessive tendencies, perhaps in the behavior of the lagging series; later declines in leading series may occur and then become widespread, and some of the coincident series may falter. Uncertainties also exist because the underlying pattern of cyclical movements is often disturbed by unusual economic and political events. Strikes and strike threats have been especially trouble-

some in recent years. Counter-cyclical actions taken by the government may also influence the course of events.

Again, although the leading series will frequently point to a decline in aggregate economic activity, they cannot pinpoint the precise dating of a turning point; to designate a peak or trough date, we must wait until some period after the fact, and such a determination must be based upon the coincident series.

It is also notable that, from the point of view of business cycle studies, a critical question is whether business has been rising to or declining to the current levels. To say that the current level of the leading series, for example, is below the level 10 or 12 months ago is not a "cyclically significant" statement. The critical question is whether the most recent trends have been upward or downward. Of course, whenever the indicators are at an all-time high, they must have been rising to that level.

The findings summarized above are useful for current business analysis, but there are a great many things that are not known about business cycles. A few are listed below:

a. Little is known about the factors determining the duration of different expansions and recessions. For this reason, the duration of these cyclical phases cannot be forecast reliably when they begin.

b. While declines in the leading indicators have frequently been followed by a decline in aggregate economic activity, there is no historical basis for determining at about what time it occurs, and whether the decline in the leading indicators is signaling a lull, a minor setback, or a decline of sufficient depth and duration to be designated a recession. Thus declines in the leading series can be interpreted at the most as signaling a decline in aggregate economic activity of unknown amplitude and duration.

c. There is no historical basis for determining late in expansion whether the decline which follows will be mild or severe. Similarly, historical cyclical patterns do not indicate in the late stages of recession what the amplitude of the expansion is likely to be.

d. Our present statistical techniques are usually inadequate for disentangling the more meaningful cyclical trends from seasonal and irregular factors in the current statistics. For this reason, we frequently can only guess when a current change is "cyclically significant." Sometimes months must go by before trends underlying the crisscross patterns in current figures become clear.

e. Little is known about the quantitative effects of various economic policies at different stages of the cycle. The infinite variety of economic relations and the extraordinary range of international and military events which affect them complicate this problem. But effective application of the knowledge that we do have about current and prospective cyclical movements requires complementary information about the effects of economic policy.

An organized and extensive research effort to provide answers to these and many similar questions about business cycles continues to be a compelling need of our times.

### APPRAISING CYCLICAL TRENDS AT DIFFERENT CYCLICAL STAGES

The use of the research findings may be illustrated by following a cycle from the beginning of an expansion, after a trough has been recognized. Though we can do better at

some stages than at others, knowledge of past business cycles is helpful in making a forecast of trends during subsequent months. Armed with the general principles outlined above, it is usually possible, by studying the patterns of previous business cycles and with due allowance for governmental fiscal and monetary policies and other related economic, political, and international events, to estimate the trend 6 months to a year ahead.

After mild recessions, the first year of expansions tends to follow the same general pattern: relatively mild recovery and early achievement of previous peak levels. Severe contractions are likely to be followed by more vigorous upward surges from the very low levels to which activity had fallen. After a year or so of expansion, a different judgment, based upon the patterns of previous expansions, can be made. In the absence of overriding external developments, and especially if preceding peak levels of activity have already been exceeded, the expected rate of advance is likely to be somewhat less during the second year than during the first. The fact that there is usually more variability in the rate of expansion in the second year than in the first should also be taken into account. The strength in the advance of the leading series during the first year, relative to that in the first year of earlier expansions, is another factor in judging the prospective pace of the second year of an expansion.

Of course, not all expansions have lasted 2 full years. Thus, of the 26 expansions recorded since 1854, 10 have lasted less than 2 years. Two expansions, one just prior to and the other just after World War I, lasted a year or less. The most recent expansion which lasted less than 2 years was that which extended from November 1927 to August 1929, a period of 21 months; the expansion from April 1958 to May 1960 scarcely exceeded 2 years. Thus, it is necessary to take into account the possibility that an expansion will last less than 2 years.

Beyond 2 years, forecasts of further expansion become even more difficult. For one thing, only 14 of the 26 expansions have lasted more than 2 years. Of these 14, 4 came during periods of war. Thus there is not much basis for making a judgment of the rate of expansion after 2 years. About all that can be said is that, if it continues at all, the advance is likely to be relatively moderate and to be characterized by many cross currents. The historical record of the duration of expansion similarly does not provide reliable clues to indicate when a reversal is apt to begin. However at this stage it is usually helpful to observe closely the behavior of the lagging series, especially those that represent rising business costs and potential business losses, for the strength of their advance may be a warning signal. Then we should turn to the leading series to see if they are as yet showing significant declines, and to the diffusion indexes for various groups of leading series to gage the scope of the movement through the economy. These indicators are the ones most likely to provide warning signals of a coming downturn in the measures of aggregate economic activity. The diffusion indexes for the roughly coincident series should also be considered for clues to the emerging pattern.

Continuing along the cyclical course, it is likely that if downturns in the leaders and in the diffusion indexes are followed by downturns in measures of aggregate economic activity, a recession is underway. This finding can usually be established 4 to 6 months after the turning point occurs on the basis of the coincident series, and it can be confirmed a few months later by downturns in the lagging series. It then becomes important to determine promptly whether the recession is apt to be severe or mild, for the types of remedial measures taken will depend upon such a judgment. Knowledge of past recessions is helpful in this respect. As noted, severe recessions usually show relatively sharp drops in the early stages, and mild recessions, relatively small drops. It is, therefore, helpful to compare current rates of decline with rates of

declines in previous recessions at corresponding intervals after the turning points. The historical record shows that the ultimate decline during a recession has been correlated with the rate of decline which has occurred in the leading series about 4 or 5 months after the turning point. For the coincident series the same comparison is significant after 6 or 7 months. If, therefore, after 4 or 5 months of recession, the rate of decline in the leading series is severe compared with the rate of decline in previous recessions, there is reason to believe that the ultimate decline will be relatively large, in the absence of effective measures to combat recession. This inference is reinforced if the rates of decline in the coincident series are also comparatively severe 6 or 7 months after the turning point.

Finally, for signs of an end to a recession, warning signals are often provided by declines in lagging series and upturns in the leading series and the diffusion indexes. The signs are opposite to those that signal a downturn late in an expansion. Once a new trough is passed, the cycle has been completed and a new cycle begins to take form.

While these characteristics of historical business cycle behavior are helpful in making forecasts, they do not provide automatic keys to the future. Each month the situation must be reconsidered in the light of the new data on business cycle indicators that become available and in the light of new economic, political, and international developments. Because of variations from the typical cyclical pattern and the uncertainties of economic and political life, frequent reappraisals of the prospective course of the business cycle must be made.

#### MERITS AND LIMITATIONS

The statistical record shows that leading series tend to lead, that coincident series tend to coincide, and that lagging series tend to lag. It shows that the scope of expansions and contractions tends to narrow and the rate of change tends to slow down in the late stages of expansion and contraction. The inspection of the record since 1921 in Signals of Recession and Recovery shows that there were some early warning signals for every reversal. The theoretical reasons for this behavior are spelled out and more detailed statistical evidence is provided in the various essays of the NBER volume, Business Cycle Indicators.

Despite this record, the business cycle indicators approach to short-term business forecasting is by no means infallible and never should be used mechanically. Various limitations on their use were noted in the earlier sections, but the hazards of forecasting are so great that it seems desirable to bring them together in one place at the end of this primer.

The indicators occasionally give signals that lend themselves to misinterpretation. Sometimes such signals can readily be discounted, as in 1951 when the expansion of activity in the defense industries offset declines in others. Other times, as in 1956, the prospective downturn may have been delayed by the high levels of unfilled orders and the backlog of capital appropriations which provided a cushion for the economy. It is to be hoped that on occasion the signals will, after the fact, prove to have been false because they provided a sufficiently early warning for the government and business to take prompt counter-cyclical measures which averted or mitigated a decline.

The variability of leads among series during a given cycle is another source of difficulty. To some extent, this variability can be taken into account since certain types of series, such as the accession and layoff rates, typically have longer leads than others, such as new orders, the average workweek, and stock prices. Again, the variability of the leads of a given series from cycle to cycle

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is confusing. These variations may be related to the levels of backlog of accumulated business, such as unfilled orders, unexpended capital appropriations, and unstarted building contracts and permits. At the present level of our understanding of business cycle processes, however, the variability of leads must be recorded as one of the principal sources of difficulty.

There are often periods of hesitancy in the middle stages of expansions which are difficult to interpret when they are occurring. In fact, the most common pattern of expansion is a vigorous advance in the early stages, a "pause," and then another, but more modest, advance in the late stages. A major problem during an advance stage of expansion appears to be that of distinguishing, currently, between declines in the leading indicators which are signaling only minor setbacks in economic activity and those which are signaling more significant changes. Similarly, some business contractions have reached "double bottoms"—periods of low activity separated by an advance and a subsequent decline. During such periods it is difficult to determine whether a new expansion has begun.

Business activity may also be affected by political, international, and financial developments which cannot be encompassed in a statistical forecasting system. The Korean War during the 1949-53 expansion, the steel strikes of 1953, 1956, and 1959, the Suez crisis in 1956, the rapid swing from a government budget surplus position late in 1957 to a pronounced deficit early in 1959 and back to a surplus position in the spring of 1960, all had marked effects on the cyclical pattern. The recent Cuban disturbance may have to be added to this list. Sudden changes in business confidence and consumer attitudes also must be reckoned with in appraising short-term prospects.

There are also problems of a statistical nature. The raw data on business activities collected from various sources must be adjusted to eliminate, as far as possible, irregular and seasonal fluctuations so that the series will show, over time, primarily the cyclical movements. Many series in Business Cycle Developments are seasonally adjusted by a method worked out at the Census Bureau (Census Method II) which is carried through with the aid of electronic computers. The seasonal factors, under this method, are computed from historical data in the series being adjusted. However, no perfect method of seasonal adjustments has yet been found, and the adjustments of the current months often have a substantial margin of error. It is unfortunately true that the leading series are the most erratic—the average month-to-month changes in these series are usually larger than in the coincident series. As a result, it is most difficult to distinguish random interruptions of the underlying trend from true cyclical changes in the leading series. While helpful in studies of historical cycles, no effective way has as yet been found to apply moving averages to the most current figures to smooth out irregular fluctuations because moving averages require data for future months, which, obviously, are not available. Such limitations of the data are probably most significant at the time when the greatest accuracy is needed—around business cycle turning points. At such critical stages of the cycle, the magnitude of the cyclical changes is frequently smaller than at other stages and confusing crosscurrents are most likely to be dominant. Revisions of data are another source of difficulty. Frequently, in making judgments of the current economic situation, we must depend upon preliminary figures, which are sometimes substantially changed when final figures become available.

For purposes of forecasting future short-term trends, it cannot be stressed too much that the business cycle indicators must be used together with other data, such as the national income accounts, or financial statistics which are arranged in a different framework. Findings from contemporary studies of industry, consumer, and government trends and plans are obviously pertinent. Close attention must also be paid to contemporary industrial, financial, political, and international developments.

The difficulties of using the indicators are formidable. In interpreting current changes, we are sometimes confronted with false signals, pauses in the underlying trends, variability in the performance of our most trusted series, shifts in attitudes arising from external events, and errors of measurement. Progress has slowly, but steadily, been made to reduce these difficulties. The publication of Business Cycle Developments has made it possible for many additional business analysts from different sectors of the economy to enter this field of study, and their combined contributions may be expected to expedite the solutions of some of these problems. However, while the inherent difficulties of forecasting changes in our vast and complicated economy may be reduced, they will never be completely eliminated, so that we shall always have to contend with a margin of error in our forecasts.

Each year research brings us new knowledge about the relations among business cycle processes. This knowledge is often helpful in interpreting current trends and prospects. The availability of the data in Business Cycle Developments each month and the widespread use of these data by businessmen, academic economists, and government officials each month is bound to stimulate research studies and to put the findings to hard tests. Consequently, the form and shape of this report may be expected to change and improve. But the basic approach of utilizing data such as appropriations, new orders, contracts, and new business formation, which relate to future rather than current production, as the basis for appraising prospective business conditions may be expected to remain unchanged.

In concluding, what can be said of the usefulness of business cycle indicators? It seems clear from the record cited above and spelled out in detail elsewhere that the business indicators are helpful in judging the tone of current business and short-term prospects. But because of the limitations described above, the indicators must be used together with other data; with full awareness of the background of political and international events; with the expectation that they will often be difficult to interpret; and with the knowledge that the signals they give will not always be correctly interpreted. To cite the appraisal made in Signals of Recessions and Recovery, the indicators provide a sensitive and revealing picture of the ebb and flow of economic tides, which a skillful analyst of the economic, political, and international scene can use to improve his chances of making a good forecast of short-run economic trends. If the analyst is aware of their limitations and alert to the world around him, the indicators appear to provide useful guideposts for taking stock of the economy and its needs.

## SUMMARY

This paper explains what is known about business cycle indicators, the problems of using them, and the research needed to improve their usefulness. For convenience, the paper is organized around Business Cycle Developments, a monthly publication of the U.S. Bureau of the Census.

Many different explanations of the causes of business cycle fluctuations have been advanced. Some economists stress the role of investment in inventory and fixed capital. Others emphasize the central role of the supply of money and credit and the interest rate. Still others look for clues in the relations among prices, costs, and profits. All of these factors undoubtedly influence the course of business activity and some are more important at some times than at others. However, there is no general agreement on which are usually more crucial to the process. Business Cycle Developments provides the data bearing on all of these factors.

The basic concept underlying the business cycle indicators approach is that various economic processes tend to move through the course of the business cycle in consistent but different time sequences. Accordingly, business cycle indicators are grouped into three major categories: "Leading," "roughly coincident," and "lagging." The leading

indicators are measures of activity which reflect future production and employment. They are, in a manner of speaking, signals of things to come. The coincident indicators relate primarily to aggregate economic activity and include such measures as the gross national product, industrial production and nonagricultural employment. Lagging indicators measure activities which follow aggregate economic activity. Some, for example, relate to business costs, which usually respond slowly to changing business conditions.

Other knowledge about the business cycle is helpful in interpreting current economic changes and short-term prospects. In the later stages the scope of expansions and contractions generally narrows and the rate of change generally declines. Diffusion indexes as well as the related measures of rates of change reflect these developments. Similarly, we know that the severity of a recession in its early stage is often correlated with its ultimate severity; that the rates of advance in aggregate economic activity during expansions have been more nearly uniform in different cycles than the rates of decline during different cyclical contractions; and that the rate of expansion has usually been more rapid in the early stages of an upswing than in the later stages.

However, we still lack a great deal of important knowledge about business cycles. Little is known about the factors determining the duration of expansions and contractions. There is no way of determining at about the time it occurs whether a decline in the leading indicators is signaling a lull, a minor setback, or a decline of sufficient depth and duration to be designated a recession. And there is no historical basis for forecasting during an expansion whether the decline which follows will be mild or severe. An organized and extensive research effort to provide answers to these and many similar questions about business cycles is a compelling need of our times.

#### Books

Burns, Arthur F. and Mitchell, Wesley Clair, Measuring Business Cycles. New York: National Bureau of Economic Research, 1946.

Burns, Arthur F., Prosperity Without Inflation. New York: Fordham University Press, 1957.

Frickey, Edwin B., Economic Fluctuations in the United States. Cambridge: Harvard University Press, 1942.

Mitchell, Wesley C., What Happens During Business Cycles? New York: National Bureau of Economic Research, 1951.

Moore, Geoffrey H., editor, Business Cycle Indicators. Princeton: Princeton University Press, 1961. This volume is a compendium of 20 papers by various writers on the selection, interpretation, and application of business indicators. Some of the important articles are: Chapter 2, "New Facts on Business Cycles," by Arthur F. Burns; Chapter 3, "Leading and Confirming Indicators of General Business Changes," by Geoffrey H. Moore; Chapter 6, "Statistical Indicators of Cyclical Revivals," by Wesley C. Mitchell and Arthur F. Burns; Chapter 7, "Statistical Indicators of Cyclical Revivals and Recessions," by Geoffrey H. Moore; and Chapter 17, "Electronic Computers and Business Indicators," by Julius Shiskin.

Shiskin, Julius, Signals of Recessions and Recovery--An Experiment With Monthly Reporting. Occasional Paper 77. New York: National Bureau of Economic Research, Inc., 1961.

#### Articles

Alexander, Sidney S., "Rate of Change Approaches to Forecasting--Diffusion Indexes and First Differences." The Economic Journal, Volume 68, No. 270 (June 1958), pp. 288-301.

There are other difficulties of using the indicators. We are sometimes confronted with misleading signals, pauses in the underlying trends, variability in the performance of our most trusted series, shifts in attitudes arising from external events, and errors of measurement. Consequently, the indicators must be used together with other data such as the national income accounts and series reflecting government action programs, with full awareness of the background of political and international events and with the expectation that they will often be difficult to interpret.

On balance, however, the indicators provide a sensitive and revealing picture of the ebb and flow of economic tides, which a skillful analyst of the economic, political, and international scene can use to improve his chances of making a good forecast of short-run economic trends. If the analyst is aware of their limitations and alert to the world around him, the indicators do provide useful guideposts for taking stock of the economy and its needs.

**NOTE:** The writer is under heavy obligation to many persons for suggestions and advice in the preparation of this paper. Especially helpful were the following members of a committee appointed by the American Economic Association to advise the Bureau of the Census on the monthly publication Business Cycle Developments: Bert Hickman (chairman), Donald J. Daly, Gottfried Haberler, Lawrence R. Klein, John P. Lewis, Geoffrey H. Moore, Frank E. Morris, Arthur M. Okun, Beryl W. Sprinkel, and Lorman C. Trueblood. In addition, A. Ross Eckler, Bureau of the Census, Herbert Blackman, formerly of the Bureau of the Census, and Roye L. Lowry of the Federal Statistics Users' Conference made important contributions. However, the views expressed in this paper are the author's and not necessarily those of the Bureau of the Census or any person listed above.

#### BIBLIOGRAPHY

#### Articles--Continued

Broida, Arthur L., "Diffusion Indexes." American Statistician, Volume IX, No. 2 (June 1955), pp. 7-16.

Gordon, R. A., "Alternative Approaches to Forecasting: The Recent Work of the National Bureau," The Review of Economics and Statistics, Volume XLIV, No. 3 (August 1962), pp. 284-291.

Hickman, Bert G., "Diffusion, Acceleration, and Business Cycles," The American Economic Review, Volume XLIX, No. 4 (September 1959), pp. 555-565.

Lempert, Leonard, "On the Value of Cyclical Indicators," The Conference Board Business Record, Volume XIV, No. 6 (June 1957), pp. 264-276.

Lewis, John P., "Short-Term General Business Conditions Forecasting," The Journal of Business of the University of Chicago, Volume XXXV, No. 4 (October 1962), pp. 343-356.

Persons, Warren M., "Indices of General Business Conditions," Review of Economics and Statistics, Volume I, No. 1 (January 1919).

Okun, Arthur M., "On the Appraisal of Cyclical Turning Point Predicators," The Journal of Business of the University of Chicago, Volume XXXIII, No. 2 (April 1960), pp. 101-120.

Sachs, Alexander, "The Cyclical Indicator Approach," The Conference Board of Business Record, Volume XIV, No. 8 (April 1957), pp. 186-191.

Wright, C. Ashley, "Business Cycle Research and Business Policy," Conference on Business Cycles, Volume II. New York: National Bureau of Economic Research, Inc., 1951.



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<sup>1</sup>See back cover for series titles and sources.

## TITLES AND SOURCES OF PRINCIPAL BUSINESS CYCLE SERIES AND DIFFUSION INDEXES

The numbers assigned to the series are for identification purposes only and do not necessarily reflect series relationships or order. "M" indicates monthly series and "Q" indicates quarterly series. Data apply to the whole period except for series designated by "EOM" or "EOQ". "EOM" indicates that data are for the end of the month and "EOQ" indicates that data are for the end of the quarter. The general classification of series follows the approach of the National Bureau of Economic Research. The series preceded by an asterisk (\*) were included in the 1960 NBER list of 26 indicators.

### 30 NBER LEADING INDICATORS

- \*1. **Average workweek of production workers, manufacturing (M).**--Department of Labor, Bureau of Labor Statistics
- \*2. **Accession rate, manufacturing (M).**--Department of Labor, Bureau of Labor Statistics
- \*3. **Layoff rate, manufacturing (M).**--Department of Labor, Bureau of Labor Statistics
- 4. **Number of persons on temporary layoff, all industries (M).**--Department of Labor, Bureau of Labor Statistics; seasonal adjustment by Bureau of the Census
- 5. **Average weekly initial claims for unemployment insurance, State programs (M).**--Department of Labor, Bureau of Employment Security; seasonal adjustment by Bureau of the Census
- \*6. **Value of manufacturers' new orders, durable goods industries (M).**--Department of Commerce, Bureau of the Census and Office of Business Economics
- \*7. **New private nonfarm dwelling units started (M).**--Department of Commerce, Bureau of the Census
- \*9. **Construction contracts awarded for commercial and industrial buildings, floor space (M).**--F. W. Dodge Corporation; seasonal adjustment by Bureau of the Census and National Bureau of Economic Research, Inc.
- 10. **Contracts and orders for plant and equipment (M).**--Department of Commerce, Office of Business Economics, and F. W. Dodge Corporation; seasonal adjustment by Bureau of the Census and National Bureau of Economic Research, Inc.
- 11. **Newly approved capital appropriations, 602 manufacturing corporations (Q).**--National Industrial Conference Board; component industries are seasonally adjusted by National Bureau of Economic Research, Inc., and added to obtain seasonally adjusted total
- \*12. **Net change in the business population, operating businesses (EOQ).**--Department of Commerce, Office of Business Economics
- 13. **Number of new business incorporations (M).**--Dun and Bradstreet, Inc.; seasonal adjustment by Bureau of the Census and National Bureau of Economic Research, Inc.
- \*14. **Current liabilities of business failures (M).**--Dun and Bradstreet, Inc.; seasonal adjustment by Bureau of the Census and National Bureau of Economic Research, Inc.
- 15. **Number of business failures with liabilities of \$100,000 and over (M).**--Dun and Bradstreet, Inc.; seasonal adjustment by Bureau of the Census and National Bureau of Economic Research, Inc.
- \*16. **Corporate profits after taxes (Q).**--Department of Commerce, Office of Business Economics
- 17. **Price per unit of labor cost index--ratio, wholesale prices of manufactured goods index to index of compensation of employees (sum of wages, salaries, and supplements to wages and salaries) per unit of output (M).**--Department of Commerce, Office of Business Economics; Department of Labor, Bureau of Labor Statistics; and Board of Governors of the Federal Reserve System; seasonal adjustment by Bureau of the Census
- 18. **Profits (before taxes) per dollar of sales, all manufacturing corporations (Q).**--Federal Trade Commission and Securities and Exchange Commission; seasonal adjustment by Bureau of the Census
- \*19. **Index of stock prices, 500 common stocks (M).**--Standard and Poor's Corporation; no seasonal adjustment
- 20. **Change in book value of manufacturers' inventories, purchased materials (EOM).**--Department of Commerce, Office of Business Economics
- \*21. **Change in business inventories, farm and nonfarm, after valuation adjustment (GNP component) (Q).**--Department of Commerce, Office of Business Economics
- 22. **Ratio of profits (after taxes) to income originating, corporate, all industries (Q).**--Department of Commerce, Office of Business Economics
- \*23. **Index of industrial materials prices (M).**--Department of Labor, Bureau of Labor Statistics; no seasonal adjustment
- 24. **Value of manufacturers' new orders, machinery and equipment industries (M).**--Department of Commerce, Bureau of the Census, from special tabulations of the Office of Business Economics
- 25. **Change in manufacturers' unfilled orders, durable goods industries (EOM).**--Department of Commerce, Office of Business Economics
- 26. **Buying policy--production materials, percent reporting commitments 60 days or longer (M).**--National Association of Purchasing Agents; no seasonal adjustment

- 29. **Index of new private housing units authorized by local building permits (M).**--Department of Commerce, Bureau of the Census
- 30. **Nonagricultural placements, all industries (M).**--Department of Labor, Bureau of Employment Security; seasonal adjustment by Bureau of the Census
- 31. **Change in book value of manufacturing and trade inventories, total (EOM).**--Department of Commerce, Office of Business Economics
- 32. **Vendor performance, percent reporting slower deliveries (M).**--Chicago Purchasing Agents Association; no seasonal adjustment
- 37. **Percent reporting higher inventories, purchased materials (M).**--National Association of Purchasing Agents; seasonal adjustment by Bureau of the Census

### 15 NBER ROUGHLY COINCIDENT INDICATORS

- 40. **Unemployment rate, married males, spouse present (M).**--Department of Labor, Bureau of Labor Statistics
- \*41. **Number of employees in nonagricultural establishments (M).**--Department of Labor, Bureau of Labor Statistics
- 42. **Total nonagricultural employment, labor force survey (M).**--Department of Labor, Bureau of Labor Statistics, and Department of Commerce, Bureau of the Census
- \*43. **Unemployment rate, total (M).**--Department of Labor, Bureau of Labor Statistics, and Department of Commerce, Bureau of the Census
- 45. **Average weekly insured unemployment rate, State programs (M).**--Department of Labor, Bureau of Employment Security
- 46. **Index of help-wanted advertising in newspapers (M).**--National Industrial Conference Board and B. K. Davis and Bro. Advertising Service
- \*47. **Index of industrial production (M).**--Board of Governors of the Federal Reserve System
- \*49. **Gross national product in current dollars (Q).**--Department of Commerce, Office of Business Economics
- \*50. **Gross national product in 1954 dollars (Q).**--Department of Commerce, Office of Business Economics
- \*51. **Bank debits outside New York City, 343 centers (M).**--Board of Governors of the Federal Reserve System
- \*52. **Personal income (M).**--Department of Commerce, Office of Business Economics
- 53. **Labor income in mining, manufacturing, and construction (M).**--Department of Commerce, Office of Business Economics
- \*54. **Sales of retail stores (M).**--Department of Commerce, Bureau of the Census and Office of Business Economics
- \*55. **Index of wholesale prices, all commodities, other than farm products and foods (M).**--Department of Labor, Bureau of Labor Statistics; seasonal adjustment by Bureau of the Census
- 57. **Final sales (series 49 minus series 21) (Q).**--Department of Commerce, Office of Business Economics

### 7 NBER LAGGING INDICATORS

- \*61. **Business expenditures on new plant and equipment, total (Q).**--Department of Commerce, Office of Business Economics; and the Securities and Exchange Commission
- \*62. **Index of labor cost per unit of output, total manufacturing--ratio, index of compensation of employees in manufacturing (the sum of wages and salaries and supplements to wages and salaries) to index of industrial production, manufacturing (M).**--Department of Commerce, Office of Business Economics, and the Board of Governors of the Federal Reserve System; seasonal adjustment by Bureau of the Census
- 63. **Index of labor cost per unit of output, total gross national product (ratio of compensation of employees to GNP in 1954 dollars) (Q).**--Department of Commerce, Office of Business Economics
- \*64. **Book value of manufacturers' inventories, all manufacturing industries (EOM).**--Department of Commerce, Office of Business Economics
- 65. **Book value of manufacturers' inventories of finished goods, all manufacturing industries (EOM).**--Department of Commerce, Office of Business Economics
- \*66. **Consumer installment debt (EOM).**--Board of Governors of the Federal Reserve System. FRS seasonally adjusted net change added to seasonally adjusted figure for previous month to obtain current figure (NBER seasonally adjusted data through January 1955 used as base).
- \*67. **Bank rates on short-term business loans, 19 cities (Q).**--Board of Governors of the Federal Reserve System; no seasonal adjustment

Continued on reverse

OFFICIAL BUSINESS

FIRST CLASS MAIL

TITLES AND SOURCES OF PRINCIPAL BUSINESS CYCLE SERIES AND DIFFUSION INDEXES--Con.

18 OTHER U.S. SERIES WITH BUSINESS CYCLE SIGNIFICANCE

81. **Index of consumer prices (M)**--Department of Labor, Bureau of Labor Statistics; seasonal adjustment by Bureau of the Census
82. **Federal cash payments to the public (M)**--Treasury Department, Bureau of Accounts, and Executive Office of the President, Bureau of the Budget. Monthly seasonal adjustments by the Bureau of the Census do not equal quarterly totals of the official seasonally adjusted series because of differences in the method of seasonal adjustment.
83. **Federal cash receipts from the public (M)**--Treasury Department, Bureau of Accounts, and Executive Office of the President, Bureau of the Budget. Monthly seasonal adjustments by the Bureau of the Census do not equal quarterly totals of the official seasonally adjusted series because of differences in the method of seasonal adjustment.
84. **Federal cash surplus or deficit (M)**--Treasury Department, Bureau of Accounts, and Executive Office of the President, Bureau of the Budget. Monthly seasonal adjustments by the Bureau of the Census do not equal quarterly totals of the official seasonally adjusted series because of differences in the method of seasonal adjustment.
85. **Percent change in total U.S. money supply (demand deposits plus currency) (M)**--Board of Governors of the Federal Reserve System
86. **Exports, excluding military aid shipments, total (M)**--Department of Commerce, Bureau of the Census
87. **General imports, total (M)**--Department of Commerce, Bureau of the Census
88. **Merchandise trade balance (series 86 minus series 87) (M)**--Department of Commerce, Bureau of the Census
89. **Excess of receipts or payments in U.S. balance of payments (Q)**--Department of Commerce, Office of Business Economics
90. **Defense Department obligations, procurement (M)**--Department of Defense, Fiscal Analysis Division; seasonal adjustment by Bureau of the Census
91. **Defense Department obligations, total (M)**--Department of Defense, Fiscal Analysis Division; seasonal adjustment by Bureau of the Census
92. **Military prime contract awards, U.S. business firms (M)**--Department of Defense, Directorate for Statistical Services; seasonal adjustment by Bureau of the Census
93. **Free reserves (member bank excess reserves minus borrowings) (M)**--Board of Governors of the Federal Reserve System; no seasonal adjustment
94. **Index of construction contracts, total value (M)**--F. W. Dodge Corporation
95. **Surplus or deficit, Federal income and product account (Q)**--Department of Commerce, Office of Business Economics
96. **Manufacturers' unfilled orders, durable goods industries (EOM)**--Department of Commerce, Office of Business Economics

97. **Backlog of capital appropriations, manufacturing (Q)**--National Industrial Conference Board; component industries are seasonally adjusted by National Bureau of Economic Research, Inc., and added to obtain seasonally adjusted total
98. **Percent change in total U.S. money supply (demand deposits and currency) and commercial bank time deposits (M)**--Board of Governors of the Federal Reserve System

7 INTERNATIONAL COMPARISONS OF INDUSTRIAL PRODUCTION

121. **Organization for Economic Cooperation and Development, European Countries, index of industrial production (M)**--Organization for Economic Cooperation and Development
122. **United Kingdom, index of industrial production (M)**--Organization for Economic Cooperation and Development
123. **Canada, index of industrial production (M)**--Dominion Bureau of Statistics, Ottawa
125. **West Germany, index of industrial production (M)**--Organization for Economic Cooperation and Development
126. **France, index of industrial production (M)**--Organization for Economic Cooperation and Development
127. **Italy, index of industrial production (M)**--Organization for Economic Cooperation and Development
128. **Japan, index of industrial production (M)**--The Bank of Japan, Statistics Department; seasonal adjustment by Bureau of the Census
- ... **United States, index of industrial production (M)**--See series 47.

DIFFUSION INDEXES

The "D" preceding a number indicates a diffusion index. Diffusion indexes and corresponding business cycle series bear the same number and are obtained from the same sources. See sources above for D1, D5, D6, D11, D19, D23, D41, D47, D54, and D61. Sources for other diffusion indexes are as follows:

- D33. **Profits, Chicago PAA (M)**--Purchasing Agents Association of Chicago; no seasonal adjustment
- D34. **Profits, Manufacturing, FNCB (Q)**--First National City Bank of New York; no seasonal adjustment of series components. Diffusion indexes are seasonally adjusted by National Bureau of Economic Research, Inc.
- D35. **Net sales, total manufactures (Q)**--Dun and Bradstreet, Inc.; no seasonal adjustment
- D36. **New orders, durable manufactures (Q)**--Dun and Bradstreet, Inc.; no seasonal adjustment
- D48. **Freight carloadings (Q)**--Association of American Railroads; no seasonal adjustment
- D58. **Wholesale prices, manufacturing (M)**--Department of Labor, Bureau of Labor Statistics; no seasonal adjustment of series components. Diffusion indexes are seasonally adjusted by National Bureau of Economic Research, Inc.