

Statistical Indicators of Business-Cycle Changes

Among the primary leading indicators of business-cycle changes, revised data for the net change in inventories on hand and on order in constant dollars indicate that this series decreased during July and new data indicate it decreased during September. Together with the previously reported decrease during August, these data reveal a decreasing trend of 3 months' duration in this series. Such developments in this series have been accompanied by business-cycle contractions in about one-third of the postwar occurrences. Therefore, some doubt has been raised that this series was continuing to expand cyclically, and we currently appraise its status as probably expanding.

Both the inverted layoff rate in manufacturing and new orders for consumer goods in constant dollars decreased during October. The 3-month moving average of the inverted layoff rate has not exceeded a peak reached during February, and this series is appraised as contracting cyclically. The 3-month moving average of new orders for

consumer goods has decreased for 4 consecutive months, leaving the cyclical status of this series indeterminate inasmuch as such decreases were accompanied by cyclical contractions in about one-half of the postwar episodes.

The index of net business formation increased and continued to expand cyclically during October. Contracts and orders for plant and equipment in constant dollars also increased during October and apparently continued to expand cyclically then. The base year for this series has been changed from 1967 to 1972 by the Bureau of Economic Analysis, and we shall be unable to ascertain the magnitude of the October increase in this series until we receive the revised historical data.

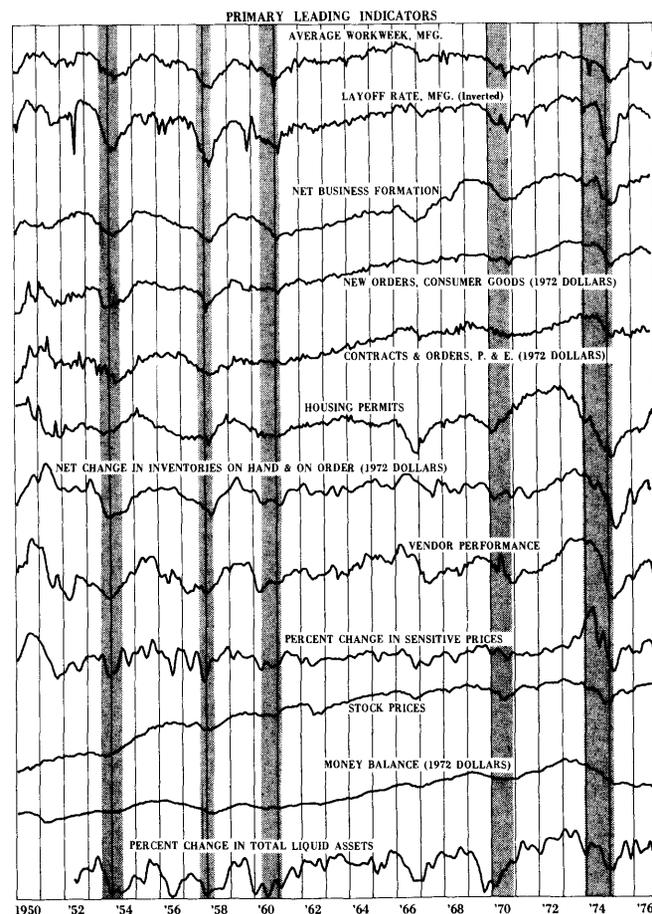
The money balance (M_1) in constant dollars increased substantially during October. This series had been trending downward since April. As we have written in earlier reports, changes in the money balance in constant dollars have been unusual during the months since the apparent business-

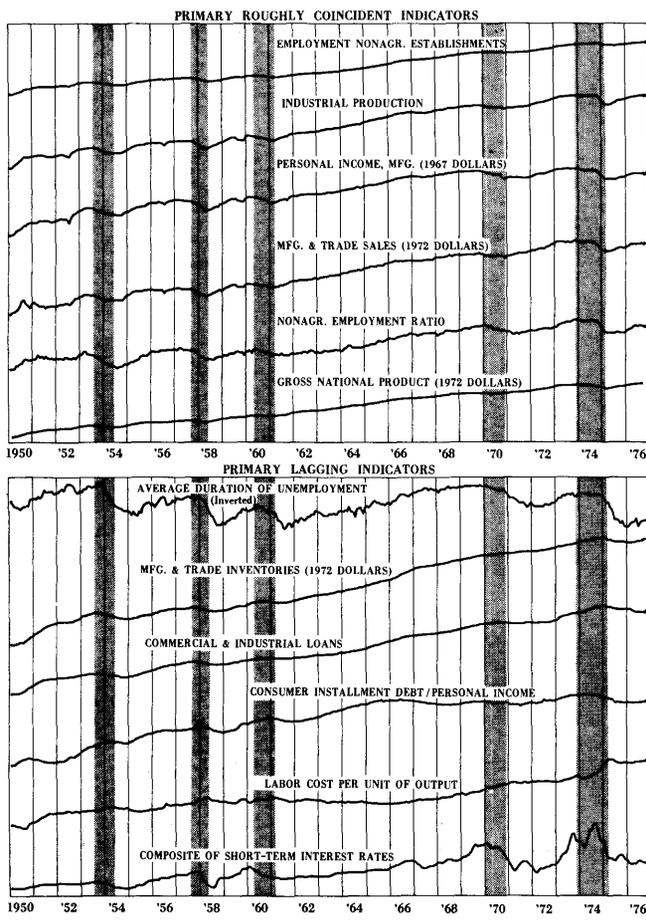
THE STATISTICAL INDICATORS

Primary Leading	Direction of Change					Apparent Cyclical Status
	July	Aug.	Sept.	Oct.	Nov.	
Average workweek, mfg.	nc	—	—	+	+	—?
Layoff rate, mfg.*	—r	nc	—	—	—	—
Net business formation	—	nc	—	+	+	+
New orders, con. gds.†	—	—	—	—	—	?
Contracts & ords. p. & e.†	—	—	+	+	—	+
Housing permits	+	+	+	—	+	+
Chg. invs., hnd. & ord.†	—r	—	—	—	—	+?
Vendor performance	—	+	—	—	—	+?
Chg. in sensitive prices	—	+	—	—	+	+?
Stock prices	+	—	+	—	—	+
Money balance (M_1)†	+	—	—	+	—	?
Chg. in liquid assets	+	—	—	—	+	?
Percent expanding cyclically						58
Primary Roughly Coincident						
Empl'm't. nonagr. estabs.	+	+	+	—	+	+
Industrial production	+	+	—	—	+	+
Personal income, mfg.†	+	—	—	—	+	+
Mfg. & trade sales†	—	+	—	—	—	+
Nonagr. employment ratio	+	—	—	—	+	+?
Gross national product†q	+	+	+	—	—	+
Percent expanding cyclically						100
Primary Lagging						
Avg. duration of unempl.*	+	+	+	nc	—	+?
Mfg. & trade inventories†	+	+	+	—	—	+
Com'l & industrial loans	—	—	+	+	—	+
Cons. instal. debt/per. inc.	nc	+	+	+	—	+
Labor cost/unit of output	+	—r	+	+	—	+
Short term int. rates	—	—	—	—	—	—
Percent expanding cyclically						83

* Inverted. † In constant dollars. nc No change. q Quarterly.
 r Revised.

Plus and minus signs indicate, respectively, increases or decreases in monthly or quarterly data and expansions or contractions of each series as currently appraised. Blank spaces indicate data not yet available; question marks indicate doubtful or indeterminate statuses of series.





cycle trough in March 1975. During no other postwar cyclical expansion did the trough in the money balance series occur after the trough in general business activity. However, this series reached an apparent cyclical trough in January 1976, 10 months after the trough in general business activity. It has fluctuated within a narrow range since then, and no clear cyclical trend is apparent at this time.

Vendor performance decreased during November for the third consecutive month, and the 2-month moving average of this series has decreased for 2 months. This series remains appraised as probably expanding, since such trends have less than a 40-percent chance of indicating a cyclical contraction. The index of 500 common stock prices also decreased during October and November. However, such decreases in this series usually have not been cyclically significant, and we continue to appraise it as expanding cyclically.

The index of housing permits increased substantially during November and continued to expand cyclically then. The percent change in sensitive prices also increased substantially during November and probably is expanding cyclically. Nevertheless, readers should note that the 4-month moving average of this series has trended downward for 2 months, which raises some doubt concerning its continued cyclical expansion. The average workweek in manufacturing increased during October and November but remains substantially below the peak reached in January. Further data are needed before we might ascertain if the contraction of this series has ended and a cyclical expansion has begun. The percent change in total liquid assets increased during November after having decreased during the preceding 3 months. This series has fluctuated erratically since the middle of 1975, and no cyclical trend is apparent.

The percentage of primary leaders appraised as expanding cyclically remains 58. Readers should note that among the 12 primary leaders, four series clearly are expanding cyclically but only two series probably are contracting cyclically. The cyclical statuses of three series cannot be ascertained at this time, and, in spite of decreases in the remaining three series during recent months, they probably are expanding cyclically. These data suggest that the situation among the primary leading indicators has not changed much since last month. We believe that some doubt about the continued cyclical expansion is warranted, but the conclusion that a cyclical contraction of business activity will begin soon does not seem warranted at this time.

Coincident and Lagging Series

Among the primary roughly coincident indicators, five series increased during the most recent period for which data are available and one series decreased then. Gross National Product in constant dollars increased and continued to expand cyclically during the third quarter. The number of persons employed in nonagricultural establishments, the index of industrial production, the nonagricultural employment ratio, and personal income in manufacturing in constant dollars increased during November. Of these four series, employment in nonagricultural establishments and industrial production increased to record levels then, which removed doubt that they were expanding cyclically. The 2-month moving average of the nonagricultural employment ratio has trended downward for 3 months. Nevertheless, this average during October was only slightly smaller than the peak reached during July, and this series probably is expanding cyclically. Personal income in manufacturing in constant dollars decreased slightly during each of the 3 months ended in October but increased to a new high during November. That increase clearly revealed that this series was expanding cyclically through November. Manufacturing and trade sales in constant dollars decreased slightly during September. However, a 1-month decrease in this series is not cyclically significant, and this series is appraised as expanding cyclically. The clarification of the status of personal income in manufacturing increased the percentage of primary roughly coincident indicators appraised as expanding cyclically from 83 to 100.

Among the primary lagging indicators, manufacturing and trade inventories in constant dollars increased and continued to expand cyclically during September, and both the ratio of consumer installment debt to personal income and that of labor cost per unit of output increased and continued to expand cyclically during October. The inverted average duration of unemployment and the composite of short-term interest rates decreased during November. The moving average of the inverted average duration of unemployment has decreased for only 1 month, and this series probably was expanding cyclically. Short-term interest rates, however, decreased to their lowest level since August 1972, and this series clearly was contracting cyclically. The increase in such rates from April through June apparently was only a temporary interruption in the cyclical contraction of this series that began in September 1974.

Commercial and industrial loans increased substantially during October after increasing moderately during September. Until September, such loans were contracting cyclically from January 1975. The recent data reveal that this series now is expanding cyclically. Last month its cyclical status was indeterminate. Because of this change, the percentage of primary laggings appraised as expanding

cyclically increased from 67 to 83.

Financial Series

In *Research Reports* for May 24, 1976, we compared the changes in three financial series during the current expansion with changes in those series during similar postwar periods of recovery in general business activity. The purpose of that discussion was to assess the implications of the apparently different pattern of changes during the current expansion. We concluded: "That the economy has been expanding for about a year without substantial increases in these financial series has favorable implications for continued economic expansion."

The accompanying charts show these series through the most recent months for which data are available.* Seven months earlier, data were available through 12 months after the trough. Subsequently, short-term interest rates increased moderately during 2 consecutive months, but they then decreased during the remaining 5 months to a level only slightly below that of 7 months earlier. Commercial and industrial loans subsequently continued in a downward trend for several months until increasing during the most recent 2 months. The ratio of consumer installment debt to personal income clearly has trended upward during the past 7 months. That these series either have continued to decrease or have not increased markedly from their recent cyclical lows continues to have favorable implications for general business activity.

Note that the recent values of both short-term interest rates (Chart 1) and commercial and industrial loans (Chart 2) were about the same as they were at the comparable month of expansion during the recovery from the 1969-70 recession. Except for the fact that the excesses were greater during the preceding expansions and therefore the necessary corrections were larger, perhaps the current short-term interest rate and the commercial and industrial loan cyclical situations are not markedly different from those during preceding postwar cycles.

The cyclical statuses of both commercial and industrial loans and the ratio of consumer installment debt to personal income are appraised as expanding cyclically. However, the increases in these series apparently have not as yet involved the excessive use of credit characteristic of the latter stage of business expansions. Furthermore, that

*For Charts 2 and 3, the percent changes were calculated from the value of each series in the peak month of the appropriate business cycle.

short-term interest rates still are contracting cyclically reveals that the demand for such credit is small in relation to the availability of it.

Although recent changes in the primary leading series have raised some doubt that the expansion of general business activity will continue, there is not sufficient evidence to warrant the conclusion that a business-cycle contraction will begin soon.

SUPPLY INDUSTRIAL PRODUCTION

Production of steel, automobiles, and electric power (1) in the 1- and 4-week periods ended on the indicated dates in the current year and (2) in the corresponding periods of earlier years was as follows:

	1929	1932	1973	1974	1975	1976
<i>Steel</i>						
Ingots (million tons)						
1 week: December 18	0.88	0.21	2.93	2.54	2.07	2.14
4 weeks: December 18	3.64	0.96	11.76	10.02	8.22	8.58
<i>Automobiles</i>						
Vehicles (thousands)						
1 week: December 18	17	26	125	113	176	213p
4 weeks: December 18	84	61	766	441	606	738p
<i>Electric Power</i>						
Kilowatt-hours (billions)						
1 week: December 18	1.9	1.6	36.1	37.2	39.6	41.9
4 weeks: December 18	7.2	6.1	137.7	145.6	151.1	165.4

Percent change from 4 weeks a year earlier: +9.5

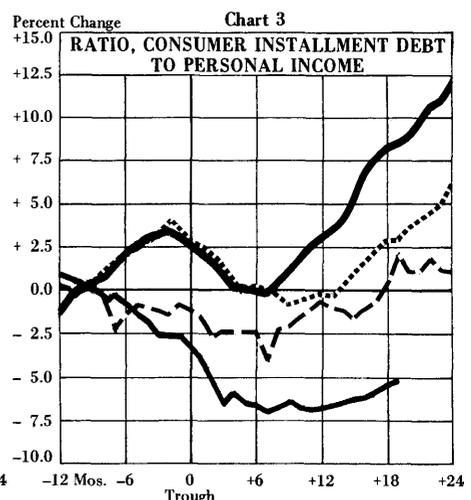
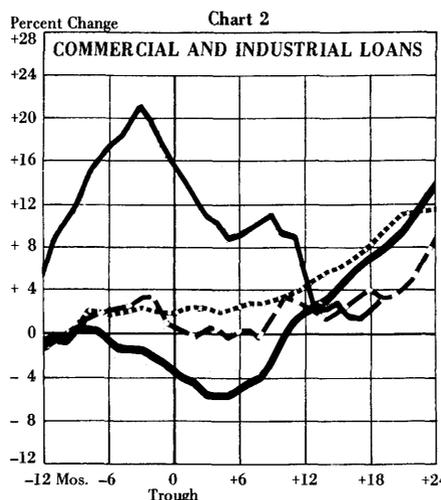
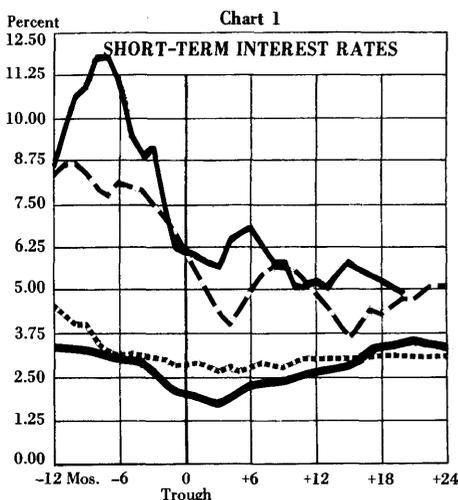
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DEMAND RETAIL SALES

Note: All data are adjusted for seasonal variations and trading-day differences.

According to the Department of Commerce, retail sales totaled \$149.4 billion during the 3 months ended in October. This amount was 1.7 percent more than that during the preceding 3-month period and 9.4 percent more than that during the 3 months ended October 1975.

Recent trends of retail sales volume have been obscured by price increases. Adjusting the current-dollar data by the commodities component of the Consumer Price Index reveals trends in the physical volume of retail sales. This procedure is not entirely satisfactory, since the "market basket" represented by the Consumer Price Index, which is based on the spending patterns of "urban wage and clerical workers," probably does not coincide with the items actually sold at retail. Nevertheless, constant-dollar retail sales data calculated by this method seem more useful than the current-dollar data.



Cyclical Periods: 1960-1961 - - - - 1969-1970 _____ 1973-1975 _____ Average (This "average" was calculated from the 5 postwar periods by dropping the highest and lowest figure for each comparable month and taking a mean of the remaining 3 figures.)

As the accompanying chart shows, the constant-dollar series has fluctuated within a narrow range during recent months and has yet to surpass the record volume of retail sales during March 1973. In spite of the irregular fluctuations of monthly retail sales during recent months, the overall trend appears to remain upward. The percent changes in total retail sales, in sales of durable-goods stores, and in sales of nondurable-goods stores during the 3 months ended in October from those during the preceding 3-month period and from the 3 months ended in October 1975 are shown in the accompanying table.

As the data show, the rate of increase in retail sales (in both current and constant dollars) has diminished during recent months, and this reduction was attributable to the retail sales activity at durable-goods stores. Sales at such stores increased markedly following the cyclical trough of general business activity in the spring of 1975. Retail sales of durable-goods stores increased at an annual rate of about 20 percent in current dollars and almost 12 percent in constant dollars between the 3 months ended in March 1975 and the 3 months ended in July 1976. These rates of increase were clearly unsustainable, and they decreased sharply during the most recent 3-month period. Sales of durable-goods stores then increased at an annual rate of 2.6 percent in current dollars. The constant-dollar series decreased at an annual rate of 3.4 percent during the 3 months ended in October.

The recent disappointing volume of durable-goods sales (or of all retail sales) probably was attributable in part to the strike at the Ford Motor Company during late September and early October, because this strike reduced the availability of some models of new cars. Although sales of automobile stores decreased during the 3 months ended in October, retail sales of nonautomotive durable goods then increased at a much smaller rate than they had during recent preceding periods. These data suggest that retail sales of durable goods probably would have been disappointing even if the strike had not occurred.

Unlike the sales of durable-goods stores, retail sales of nondurable-goods stores (both in current and constant dollars) appear to have accelerated somewhat during recent months.

The index of consumer sentiment compiled by the Survey Research Center of The University of Michigan increased 6.6 points between May and September, to 88.8 (February 1966=100), which was the highest level since 1972. Thus, through September, at least, this index remained in a clear upward trend that began in May 1975. However, another survey of consumer attitudes, that of the Conference Board, reportedly indicated that consumer confidence has waned since September.

PERCENT CHANGE IN SALES OF RETAIL STORES
Aug. 1976 through Oct. 1976 from
May-July 1976* Aug.-Oct. 1975

	May-July 1976*	Aug.-Oct. 1975
<i>Current Dollars</i>		
All retail stores	+7.2	+9.4
Durable-goods stores	+2.6	+14.3
Nondurable-goods stores	+9.5	+7.1
<i>Constant Dollars</i>		
All retail stores	+3.8	+5.8
Durable-goods stores	-3.4	+7.9
Nondurable-goods stores	+5.1	+4.0

*Annual rate.

An advance-sample estimate of retail sales during November indicated that such sales increased markedly then to a new record for the current-dollar series and to within 0.5 percent of the record for the constant-dollar series. However, advance-sample estimates often have been revised substantially after the full-sample data have been compiled. Recent reports from retail establishments suggest that sales during this year's holiday shopping season will be substantially larger than those a year earlier but that a repeat of last year's gain (December 1975 sales of retail stores were 18 percent more than those during December 1974) is highly improbable.

Increases in both the current-dollar and constant-dollar amounts of retail sales are probable during the next few months.

Latest Weekly Data

Estimates of retail sales during the most recent week and 4 weeks compare with such sales during the corresponding periods a year earlier as follows:

Period	Percent change
Week ended December 11	+10
Four weeks ended December 11	+10

PRICES
COMMODITIES PRICES

Index	1975		1976	
	Dec. 15	Dec. 6	Dec. 13	Dec. 23
Spot-market, 22 commodities*	496	514	527	
Commodity-futures	592	767	761	
Steel-scrap	\$64.83	\$66.50	\$69.50	
Gold	Dec. 23	Dec. 16	Dec. 23	
	\$140.80	\$134.40	\$132.35	

*For the preceding Tuesday.

Research Reports is published weekly at Great Barrington, Massachusetts 01230 by American Institute for Economic Research, a nonprofit, scientific, educational, and charitable organization. Second class postage paid at Great Barrington, Massachusetts 01230. Sustaining membership: \$9 per quarter or \$35 per year.

BILLIONS OF DOLLARS

