

Automobile Purchases and the Business Cycle

Although new-car sales recently have compared favorably with those near the trough of the recession a year ago, they still have failed to equal the rate of 1955, despite 7 years of industrial and economic growth. In both the *Research Reports* and the *Investment Bulletin*, we have discussed the dependence of the business recovery on activity in the automobile industry. Some measure of the importance of automobile purchases in business-cycle fluctuations appears in a report on consumer expenditures for all goods and services, published in the *Survey of Current Business* for March 1962.

The report, which is the basis for this article, describes automobile purchases as a volatile factor in business activity affecting it far beyond their ratio to the total of all purchases and points out some of the long-term changes that have affected automobile purchases. In recent years private passenger car buying (personal and business) has averaged only about 4 percent of final purchases of all goods and services, compared with 3.6 percent in 1929 and 3.1 percent in 1961. Excluding the war years, this percentage was the least (1.5) in 1932 and the greatest (5.0) in 1950 when it was still affected by war-deferred purchases. The percentage was next largest in 1955 when it was 4.8. Car purchases for personal use have increased relatively more than those for business use. In 1929 they accounted for 3.3 percent of all personal consumption expenditures compared with 4 percent last year, one of the smallest percentages of the postwar years.

Changes in the amount spent for the purchase of automobiles compared with changes in the amount spent for all goods and services quarterly since 1957 reveal the volatility of automobile sales, compared with all others. This is apparent from both the frequency of the opposite direction of change and the relative amounts of change. During the 5 years 1957-61 amounts spent for automobiles decreased from those of the preceding quarter during the 8 quarters in which the amount spent for all other goods and for services increased. And when both have changed in the same direction, the change in automobile purchases usually has accounted for more than their proportionate share of the change in all purchases, often having accounted for a fifth or more of the total change. In the first quarter of 1958 when total purchases of goods and services were increasing, purchases of automobiles were decreasing with the result that what would have been an \$8.5 billion increase in total purchases of goods and services was reduced to about \$5 billion. In another quarter, the first of 1961, the decrease in automobile purchases accounted for more than half the decrease in the final purchases of all goods and services. Even in the final quarter of 1961 when the increase in purchases of all goods and services exceeded \$15 billion and was the greatest for any quarter of the 1957-61 period, automo-

mobile purchases accounted for nearly one-fifth of the increase.

The changing portion of all consumer expenditures accounted for by automobile purchases also reflects the volatility of these purchases. This portion increased 50 percent between 1929 and the early 1950's, since when it has decreased about 20 percent. Thus, at recent levels consumer expenditures for automobiles are not large by past standards and are subject to marked increase or decrease without departing from earlier expenditure patterns.

A long-term trend that may have contributed to the volatility of automobile purchases is the increased part of all automobile purchases accounted for by consumers as compared with business. In the pre-World War II years about 70 percent of all automobile purchases were by individuals for personal use. Since World War II this percentage has increased to 83. That the percentage may decrease somewhat, with a contracting influence on automobile purchases, is suggested by its already having decreased from 85 in the mid-1950's and by some of the reasons given for the postwar increase. Among these are large wartime savings, the move to the suburbs, a high rate of family formation, and a shorter workweek and longer vacations. As the more temporary of these influences ceased the percentage of automobile purchases accounted for by consumers has tended to decrease, with a depressing influence on automobile sales.

Another factor tending to make automobile purchases volatile is the shift in consumer choice toward more expensive cars. This trend was especially marked following the war. As measured by the Office of Business Economics of the Department of Commerce, it was marked between 1949 and 1957 before being reversed. Reversal of the trend has been furthered by the entry of foreign manufacturers into the domestic market, aided by a relative absence of inflation abroad and the so-called compact car that they have had to offer. Present indications are that the automobile manufacturers are uncertain whether the dominant trend in evidence since 1957 is continuing or whether it is being reversed.

Auto-related expenditures, which since the war have averaged one and one-half times those for the automobiles themselves, indicate the importance that consumers assign to the use of their cars. Automobiles, in contrast with such items as gasoline, oil, and to a lesser extent tires, have no definite life or use period and changes in the attitude, economic position, and preference of consumers lead them to shift the relative amounts of their expenditure for automobiles.

Automobile buyers have exhibited a tendency to economize drastically when serious recessions occur. For example, expenditures for new cars decreased 75 per-

cent from 1929 to 1932. Consequently, there is little reason to believe that purchases of new automobiles would be a supporting influence for general business activity in the event of a more severe recession than any seen since World War II.

What the Indicators Say

Percentages of the three groups of indicators expanding are plotted on the accompanying chart, with periods of cyclical contractions as determined by the National Bureau of Economic Research indicated by shaded areas.*

Of the monthly leading indicators only 11 percent appear to be expanding, a one-series decrease from the level last reported in our month-end review of the indicators. The only leading monthly series still considered to be expanding is that of new orders for durable goods, but that series decreased in February and may have passed its cyclical peak. The percentage of the leaders expanding is at the lowest level since November 1960.

The status of the roughly coincident series has improved since March with 88 percent now expanding. The only coincident series definitely trending downward is that of industrial wholesale prices, whose unusual cyclical behavior during the past year may be ascribed to a relative absence of inflation.

Perhaps the most significant recent development among the indicators is the attainment of increases by all the lagging series. During all business cycles since 1903, peaks of the lagging series have invariably preceded troughs of the leading indicators, by varying intervals of time.

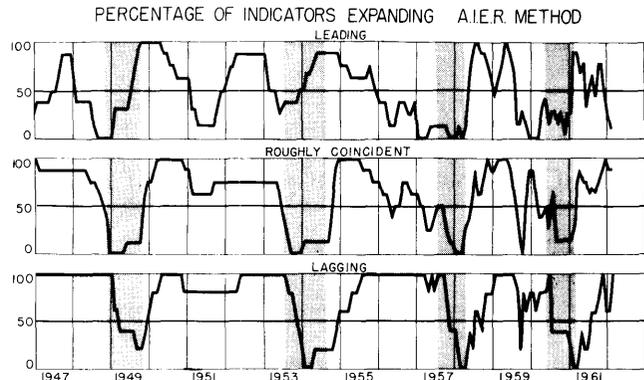
Although continuing moderate expansion of business activity is observed among the coincident indicators, the status of the leaders justifies doubt that the recovery will long continue.

SUPPLY

Steel-Ingots Production vs. Prices of Metals and Metal Products

First-quarter production of steel ingots and steel for castings is estimated at 31,000,000 tons, 13 percent more than that in the previous quarter and 55 percent more than that in the first quarter of 1961. Production during the quarter just ended benefited not only from the impetus of the recovery trend begun in March last year

*The expansion of each indicator is determined by visual inspection and by appraisals of related series. The indicators are grouped as "leading," "roughly coincident," or "lagging" according to their past relationships to peaks and troughs of business cycles.

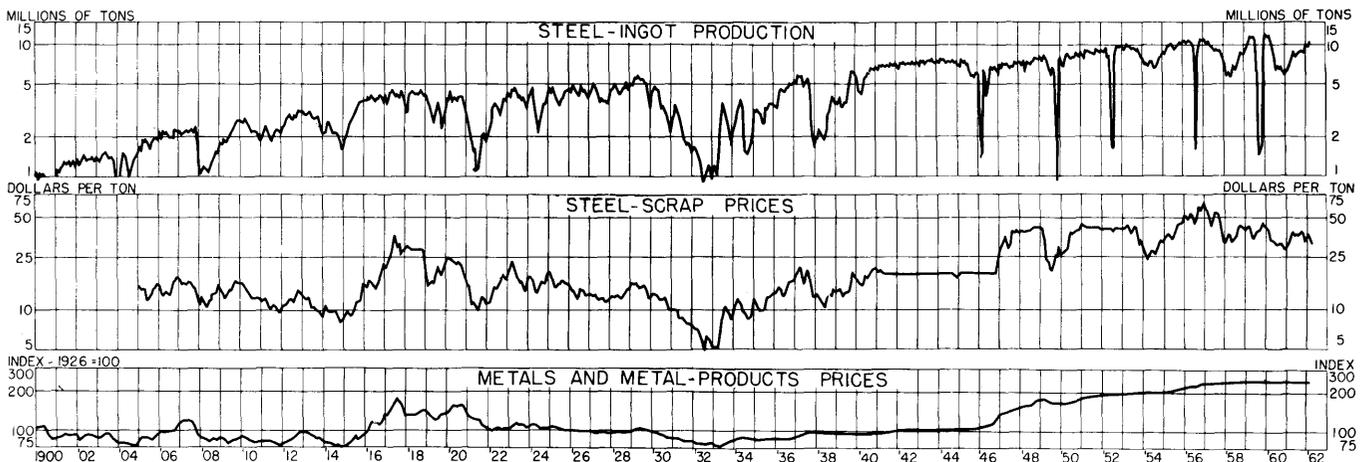


but also from customers' inventory accumulation in anticipation of a possible strike about July 1. However, production in the recent quarter did not exceed that for the corresponding period 2 years ago, when steel output was increased to replenish inventories depleted during the steel strike of 1959.

Weekly production increased steadily through March and was 2,417,000 tons for the week ended March 31. Production in the latter week apparently was not affected by the union-management agreement reached on March 28. Second-quarter output, however, is expected to be somewhat less than that of the first quarter because the demand for inventory no longer appears to be a factor in orders for steel. Moreover, present indications are that second-quarter demand for steel will not be augmented by orders in anticipation of steel price increases based on cost increases attributable to the labor settlement.

The moderation shown in the recent labor-management agreement illustrates the controlling influence of inflationary or deflationary forces on labor-management negotiations. During periods when the money supply is being inflated, both parties to the wage dispute are aware of the relative ease with which cost increases can be passed on to consumers; this strengthens the union position and weakens that of management. Conversely, noninflationary or deflationary conditions minimize management's recourse to price increases and encourage its resistance to the more extravagant union demands. It is only under the latter conditions, as we have observed frequently, that the exhortations of Government "to hold the line" on costs and prices can be influential.

The *Iron Age* composite price of No. 1 heavy melting steel scrap averaged \$31.92 per ton in March, 10 percent less than the February average and 15 percent less than



that in January. The March average was the lowest since the last recession low of \$28.33 and compares with an average of \$39.42 reached last September. As reflected in these price averages, recent demand for steel scrap has been weak. With the removal of the strike threat, further price decreases seem probable.

Prices of metals and metal products have fluctuated within narrow limits during the past 2 years, with a slight downward tendency. Our combined price index for metals and metal products and for machinery and motive products (1926=100) was 244.8 in January and February, having decreased less than 1 percent from 247.2 in February 1960. Further stability in the index is anticipated during the second quarter.

Steel production in the second quarter is expected to decrease from that of the first quarter as a result of the disappearance of the strike-anticipation demand and the use of inventories already accumulated in anticipation of a strike.

Industrial Production

Production of steel, automobiles, electric power, and lumber (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	1957	1960	1961	1962
<i>Steel</i>						
Ingots—million tons						
1 week: March 31	1.31	0.33	2.37	2.54	1.63	2.42
4 weeks: March 31	5.20	1.47	9.57	10.41	6.38	9.57
<i>Automobiles</i>						
Vehicles—thousands*						
1 week: March 31	137	43	164	187	130	174p
4 weeks: March 31	534	149	678	732	470	688p
<i>Electric Power</i>						
Kilowatt-hours—billions						
1 week: March 31	1.7	1.5	11.7	13.5	14.2	15.6
4 weeks: March 31	6.8	6.1	46.9	55.9	57.1	64.0
<i>Lumber</i>						
New York Times Index						
1 week: March 24	129	40	117	120	103	112
4 weeks: March 24	129	39	116	118	100	108

* Cars and trucks in the United States and Canada.
p Preliminary.

DEMAND

Department-Store Sales

Sales of department stores reporting to the Federal Reserve banks compare with those of corresponding periods of a year earlier as follows:

Period	Percent Change
Week ended March 31	- 2
Four weeks ended March 31	- 2
Fourth week before Easter	+ 16
Year to date	+ 2

Note: In order to compare weeks of corresponding relationship to Easter, we compare sales of the week ended March 31 with

sales of the week ended March 11 last year under the "Fourth week before Easter."

PRICES

Commodity Prices

Index	1962		
	Apr. 2	Mar. 26	Apr. 2
Spot-market, 22 commodities	265	258	257
Commodity-futures	301	309	309
Steel-scrap	\$39.50	\$31.50	\$30.83

BUSINESS

Manufacturers' Orders, Sales, and Inventories

Note: Data for new orders, sales, and inventories are seasonally adjusted; data for unfilled orders are not so adjusted.

New orders received by manufacturers during February were two-tenths of 1 percent more than those received during January and 13.5 percent more than those for February 1961. New orders for durable goods, a leading indicator of business-cycle changes, were 2.2 percent less than those of a month earlier but 20.7 percent more than those of the corresponding month last year. New orders for nondurable goods were 2.6 percent more than those of a month earlier and 7.5 percent more than those received during February 1961.

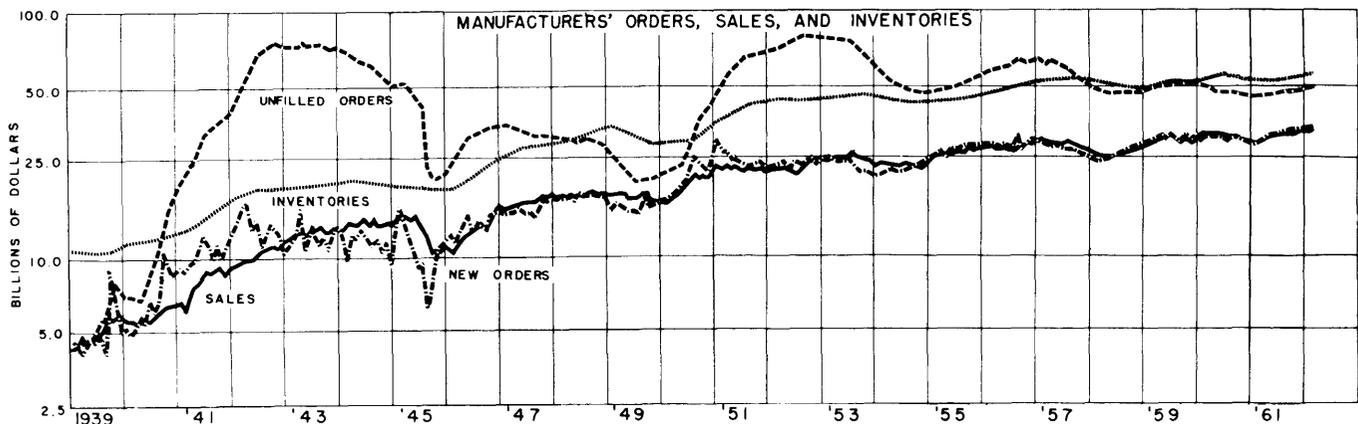
Sales (shipments) of manufacturers in February were 2.2 percent more than those of a month earlier and 12.9 percent more than those in February 1961. Sales of durable goods were 2.2 percent more than those in January and 19.4 percent more than those in the corresponding month last year. Sales of nondurable goods were 2.1 percent more than those in January and 7.5 percent more than those in February 1961.

Inventories of manufacturers at the end of February were eight-tenths of 1 percent more than those of a month earlier and 4.8 percent more than those of a year earlier. Inventories of durable goods manufacturers increased 1 percent during the month and were 4.8 percent more than those of a year earlier. Inventories of manufacturers of nondurable goods increased one-half of 1 percent during February to an amount 4.4 percent more than that of a year earlier.

The ratios of inventories to sales for manufacturers of all goods, durable goods, and nondurable goods for February compare with those for a month and a year earlier as follows:

	1962		
	Feb.	Jan. r	Feb. p
All goods	1.85	1.74	1.71
Durable goods	2.30	2.05	2.03
Nondurable goods	1.46	1.44	1.42

p Preliminary. r Revised.



Unfilled orders of manufacturers at the end of February were 1 percent more than those of a month earlier and were 8.6 percent more than those at the end of February 1961. Unfilled orders for durable goods were nine-tenths of 1 percent more than those of a month earlier and were 8.2 percent more than those of a year earlier. Unfilled orders for nondurable goods, about 6 percent of the total, increased 3 percent during February and were 15 percent more than those at the end of February 1961.

That a boom is not to be expected during the next few months is indicated by a recent survey of manufacturers' expectations by the Department of Commerce. According to the findings of the survey, manufacturers expect their sales to continue to increase through June, but at a diminishing rate as compared with that of the first quarter. Second-quarter sales were expected to exceed those of the first quarter by less than 1 percent.

A polling of members of the National Association of Purchasing Agents in March suggests that purchasing agents may be returning to a more cautious buying policy. The reaching of an agreement by labor and management in the steel industry late last month probably will further encourage a more cautious buying policy among purchasing agents.

Because new orders for durable goods are one of the more sensitive of the leading indicators, the February decrease in that series could be the most significant change among the latest reported data on manufacturers' orders, sales, and inventories.

Industrial Productivity

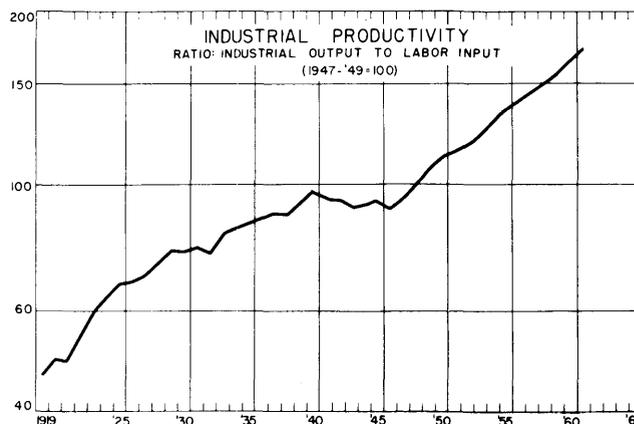
In this article each year we review changes during the preceding year in industrial productivity as it is measured by our index of productivity.† The index measures changes in the efficiency with which labor has been employed directly in manufacturing operations in the United States. In so doing, the index reflects the ability of the economy as a whole to adjust in a competitive world.‡ At this point, however, we caution the reader that the qualities that fit this index for such general use make it unsuitable for such specialized uses as determining wage increases in an industry.

Our index of industrial productivity reveals that productivity of all industry in the United States increased 4.6 percent last year to a level 72 percent greater than that of 1947-49, the base period of the index. The increases in 1959 and 1960 were 4.4 and 5.2 percent, respectively. The irregularities of the curve in the accompanying chart of industrial productivity reveal marked variability of the annual changes. Since 1919, annual increases in productivity have averaged 3.2 percent; the yearly changes in productivity have ranged from an increase of 10.8 percent in 1922 (following a year of decrease) to a decrease of 3.2 percent in 1946 incidental to

†The index is the ratio of industrial output to labor input, both measured by indexes. Gains or losses in productivity are due to changes in the several factors of production and to other influences such as changes in rates of operations and shifts in worker occupations from less to more productive jobs.

‡Other methods than the one we use for measuring changes in productivity have been designed for special purposes. However, the ratio of industrial output to labor input is particularly suited to an overall measurement of changes in productivity when allocation of changes among the several factors of production is not required.

‡For a discussion of industrial growth of Russia versus that of the United States, see "Growth of Russian Industrial Capacity," *Research Reports*, April 17, 1961.



the reconversion of industry to peacetime operations. Moreover, the effects of broad and basic economic changes on industrial productivity are evident in the different rates of change in the several decades beginning with 1921. These rates of change and dominant economic influences of the decades were as follows:

Decade	Annual Rate of Increase (Percent)	Dominant Economic Influence
1921 - 1930	4.4	Widespread introduction of mass production techniques
1931 - 1940	2.4	The Great Depression
1941 - 1950	1.4	World War II
1951 - 1960	4.0	Postwar prosperity

Among the principal determinants of industrial productivity more or less common to all periods are such technological innovations as the results of industrial expenditures for research and development and for new plant and equipment, and variations in the rate of utilization of industrial capacity. Research, apart from its importance in new-product development, affects productivity by increasing the efficiency of productive processes and thereby facilitating increased production. The rate of capacity utilization, as determined by the demand for the final product, affects productivity by reducing man-hour unit cost as the rate of utilization rises toward the optimum. (The most effective rate of capacity utilization is somewhat less than 100 percent in most industries, because complete use of capacity often involves resort to obsolete machinery and relatively less efficient temporary workers with resulting high cost per unit of product.)

The only pronounced and prolonged decrease in American productivity during the past 42 years occurred during World War II, as a result of inefficiencies introduced into productive processes by massive transference of manufacturing efforts from peace to war production and by the withdrawal of millions of skilled workers from production for the armed services. Following World War II, a rapid resumption of consumer-goods production and the reabsorption of skilled workmen into their regular trades were accompanied by a high and sustained rate of increase in productivity, interrupted only briefly by the Korean War.

Overall industrial productivity increased during 1961 at a rate well in excess of the annual average of the decade 1951-60. The 1961 rate was exceeded since 1955 only in 1960.