

MONTHLY

Business Review

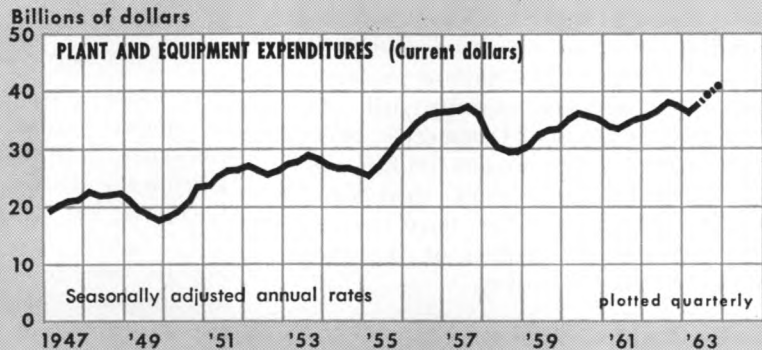
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Since 1947, the ratio of capital spending to Gross National Product has declined on balance. However, the ratio increased in 1962 and preliminary estimates indicate a slight advance in 1963. This marks the first time in the postwar period that the ratio has advanced for two consecutive years.



Sources of data: U. S. Department of Commerce, Securities and Exchange Commission

Capital Spending—Stimulus For Business Expansion

THE PERFORMANCE of capital spending is a key factor in the pace and duration of the current business expansion.

In line with that consideration, this article first assesses the recent record, noting that the current upswing in capital spending has shown moderate but significant strength. In order to view the current performance of capital spending in perspective, attention is focused on the earlier postwar expansions.

The second part of the article considers the short-term outlook in capital spending. There is some evidence of a further increase in capital spending. This view is supported by the recent performances of corporate profits, the rate of manufacturing capacity utilization, and recent Department of Commerce—Securities and Exchange Commission (S.E.C.) surveys of business investment intentions.⁽¹⁾ These factors, taken together, have proven to be relatively accurate guides of the future direction of capital spending.

Measuring Capital Spending

Before undertaking a more detailed examination of the current behavior of capital spending, it is important to assay the data that are used in the article. In its broadest meaning, capital spending includes expenditures for new plant and equipment necessary to the operation of industrial and commercial facilities.

The estimates of plant and equipment investment provided jointly by the U. S. De-

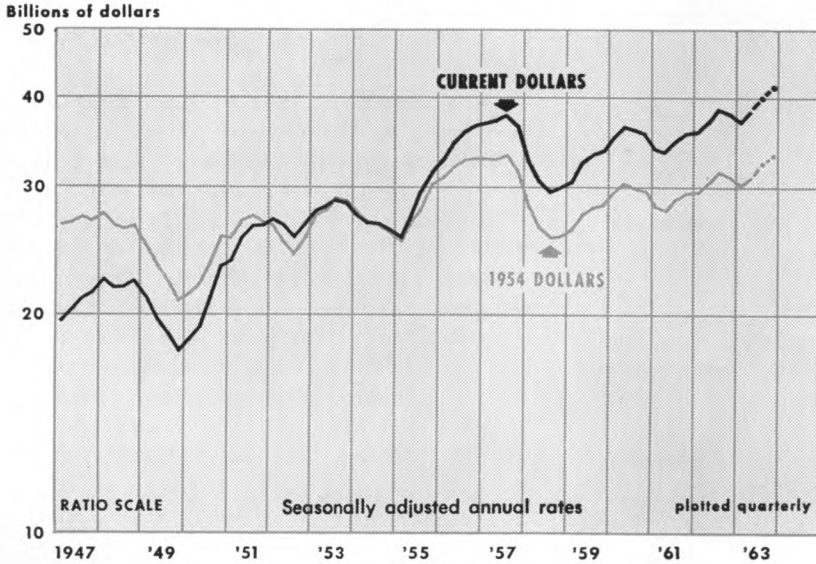
partment of Commerce and the S.E.C. include anticipated spending by major manufacturing industries, mining firms, railroads, utilities, and commercial enterprises and cover the bulk of capital expenditures in the United States. It is important to note that the estimates do not include spending by professional persons for equipment used in their practice, nor do these estimates include capital spending by certain other areas of the economy, e.g., agriculture. Because many of these sectors of the economy have grown substantially in the postwar period, estimates of total capital spending are understated to the extent that these sectors are not included in the estimates.

In order to compare accurately changes in the dollar volume of capital spending, some allowance must be made for price changes. During the postwar years price increases have accounted for a large part of the rise in the dollar figures of plant and equipment spending. In order to eliminate the distortions due to changes in price levels, it is essential to use a deflated or a constant dollar series. Such a measure of capital spending is the most meaningful representation of capital spending throughout the postwar years, where one year may be compared with any other year without qualification concerning price levels.

Chart 1 compares plant and equipment spending in 1954 dollars with the series showing plant and equipment spending in current dollars. In the past two years price increases of capital goods have been moderate, as the gap between the deflated and the current dollar series increased only slightly. Most of the advance in the price level of capital goods

(1) "Plant and Equipment Programs, Second Half 1963—Continued Rise Projected." *Survey of Current Business*, Office of Business Economics of the U. S. Department of Commerce, September, 1963.

Chart 1.
PLANT AND EQUIPMENT SPENDING



During the post-war years price increases have accounted for a large part of the rise in the dollar volume of plant and equipment spending.

Sources of data: U. S. Department of Commerce, Securities and Exchange Commission

occurred during three periods: the years immediately following World War II, the first two years of the Korean War, and the years 1956-1957. The overall increase in the price level of capital goods from 1947 to the estimate for 1963 has been substantial, amounting to over 60 percent. Except where noted, deflated values of plant and equipment spending are used throughout the remainder of the article.

Strength, But No Boom

Historical comparisons are useful in interpreting the current pace of capital spending. Of course, some attempt must be made to present the historical periods so that they provide a clear and complete evaluation of the present period. In such a comparison the present expansion in fixed investment shows moderate strength.⁽²⁾

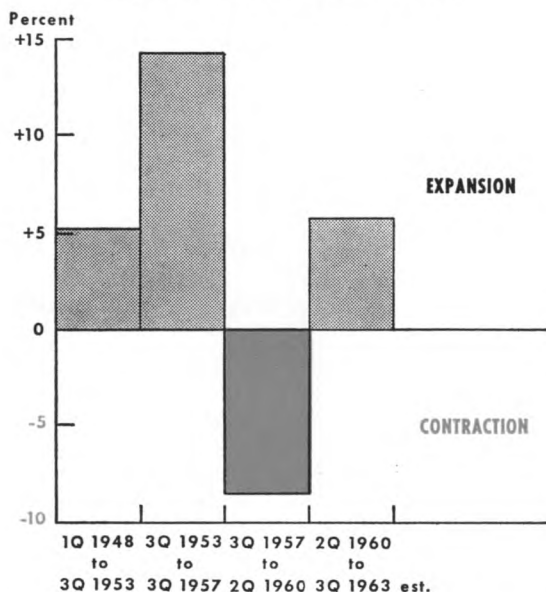
The 1947 boom in capital spending reflected the changed circumstances of the U. S. econ-

omy during the years immediately following World War II. Following the end of the war, a sustained high level of business activity coupled with strong consumer demand were incentives for an expansion in capital spending. For nearly two decades preceding the 1947 expansion in capital spending, plant and equipment expenditures had been restrained. During the depression of the 1930's businessmen were not experiencing sufficient demand to warrant additional investment; during World War II, the demands of the war effort

(2) A look at the current performance of capital spending would not be complete without note of the drop in plant and equipment spending that occurred in both the fourth quarter of 1962 and in the first quarter of 1963. Those declines are regarded as a temporary pause in the prevailing upward direction in capital spending, as the pace of capital spending during the second quarter of 1963 nearly recouped the loss of the earlier two quarters. The recent pause was not without a precedent; a similar arrest in capital spending occurred during part of the years 1952-1953.

The factors that are significant in explaining the recent pause in capital spending include the uncertainty in the direction of corporate profits in the second and third quarters of 1962 and the lack of upward momentum in the economy during the second half of 1962. The use of the tax credit plan and the new depreciation guideline may have been contributing factors in the advance in capital spending during the second quarter of 1963.

Chart 2.
CHANGES IN PLANT AND EQUIPMENT SPENDING



Sources of data: U. S. Department of Commerce, Securities and Exchange Commission

The advance in capital spending which began in the second quarter of 1960 represents the second best postwar expansion by a slim margin. (Changes are measured from the high of each period of expansion in capital spending to the high of the subsequent period of expansion in 1954 dollars.)

severely limited additions to plant and equipment.

The second postwar surge in capital spending occurred in 1956 and reflected the impact of a rapid expansion of demand for the output of two of the nation's key industries during the preceding year. Steel production reached an all-time high in 1955, rising from a considerably lower volume of output during

the year earlier. In addition, 7.4 million domestic new cars were sold in 1955, up sharply from the level of 1954. Consequently, capital spending in these, as well as many other, associated industries moved up substantially in 1956.

It is also important to note comparisons that point up the strength of the current expansion in capital spending. Chart 2 shows changes in plant and equipment spending, in 1954 dollars, measured from the high of each period of expansion to the high of the subsequent period of expansion. The current advance, which we assume has not yet reached a peak, already represents by a slight margin the second best postwar expansion in capital spending. This type of measurement is useful because it emphasizes the improvement in capital spending that has recently occurred.

The cover chart shows that capital spending increased as a share of Gross National Product in 1962, and current estimates indicate a further modest increase in 1963.⁽³⁾ Thus, capital spending appears to be increasing its direct contribution to the growth of the nation's economy for two consecutive years, the first occurrence of this type in the past sixteen years.

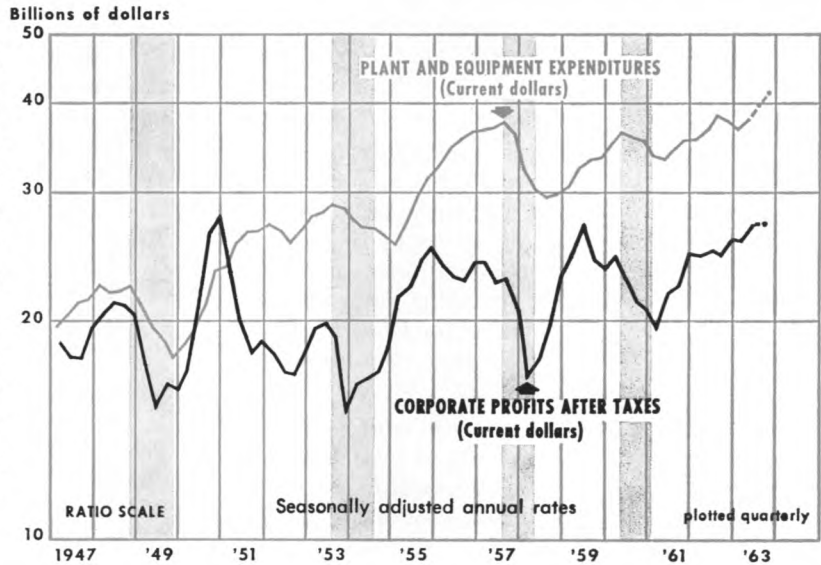
Most importantly, a continued rise in plant and equipment spending would lay the groundwork for the future growth of the nation's economy. The installation of capital goods in the nation's industrial and commercial enterprises nearly always boosts productivity, which could result in higher wages or higher profits, or both. Consumers may benefit either from more attractive prices for existing goods or from improved quality in new goods, or both.

Improvements in productivity may also enhance the competitive position of the nation's industries relative to the rest of the world. Over a period of years such an improvement may be an important factor in boosting the nation's exports.

(3) The figures used in calculating the 1963 estimates (in current dollars) are as follows: Gross National Product, \$581 billion; Plant and Equipment Expenditures, \$39.09 billion.

Chart 3.

The fact that corporate profits after taxes have tended to move upward moderately throughout the present expansion in business activity may be regarded as a favorable factor with respect to capital spending. (Shaded areas represent recession periods as measured by N.B.E.R.)



Sources of data: U. S. Department of Commerce, Securities and Exchange Commission

As noted earlier, capital spending is also an important consideration in short-term forecasts of overall business conditions. For example, in both the first half of 1957 and the first quarter of 1960 stepped-up capital spending contributed to an expansion in general business activity. It is expected that capital spending will again represent a strong plus factor for the nation's total economy in the next few months.

The Importance of Profits

The performance of corporate profits has always been a major factor in business decisions to invest in new plant and equipment. Together with depreciation allowances, corporate profits are the sources of funds for the purchase of fixed assets. (See Chart 3.)

The current performance of corporate profits suggests that capital spending is likely to sustain its present pace or move even higher in

the last half of 1963. In line with the record of corporate profits and capital spending during the past ten years, there are two observations which support the above conclusion.

First, the current performance of corporate profits indicates that corporations have both the means and the incentive to continue adding new plants and equipment. Even though the rise in profits has been moderate, expressed in current dollars, a new record level was attained in the second quarter of this year.⁽⁴⁾

Second, during the preceding two expansions in capital spending, corporate profits turned down and subsequently declined moderately for one to two years prior to decline in plant and equipment spending. Consequently, even a moderate drop in corporate

(4) "Corporate Profits and National Income in Second Quarter, 1963" *Business News Reports*, Office of Business Economics of the U. S. Department of Commerce, September 19, 1963.

profits accompanied by a continued expansion in general business activity, cannot be interpreted as a signal of an immediate decline in spending.⁽⁵⁾

Spending to Save

In addition to serving as an indication of the ability of establishments to purchase capital goods, profits are also an important yardstick in measuring the desirability of acquiring capital goods. Fixed investments are often made in order to reduce operating costs and raise profit margins. The methods of cost reduction may be classified into two broad categories.

First, many firms utilize new equipment that contributes to a net savings in total costs at most levels of output, if such equipment is available. An important example of this type of cost reduction is provided by the primary iron and steel industry, which plans to increase outlays for capital goods in 1963 in spite of relatively low operating rates and low profit margins in recent years. The increase in capital spending by the primary iron and steel industry in 1963 largely reflects the success of the new oxygen reduction process, as well as other related developments, in reducing costs of steel production over a wide range of operating rates. In fact, the volume of this year's capital expenditures by the primary iron and steel industry is expected to be the largest of any major durable industry grouping.

A second, and more common, method of cost reduction is associated with a rise in output, in response to a rise in demand. When output rises beyond levels designed to yield a maximum output at lowest unit cost, average unit costs begin to rise due to an intensive use of machinery as well as the need for longer work weeks. Thus, capital goods are purchased in order to reduce average unit costs at expanded levels of output and thereby boost profit margins.

(5) However, declines in corporate profits associated with declines in general business activity are usually accompanied by sharp declines in capital spending. During such periods, corporations have shown a record of quickly reducing their capital spending.

Motor vehicle and parts manufacturers serve as an important example of this type of incentive for capital spending. In response to the strong demand for cars and trucks that has prevailed throughout 1963, motor vehicle and parts manufacturers have stepped up output over the levels of 1962. In meeting the current demand, manufacturers scheduled overtime operations for their work forces in certain plants during the spring and summer of 1963. As a consequence, it is presumed that average unit costs increased in 1963 over 1962, when auto and truck output was not at such advanced levels.

Reflecting this year's high level of output, capital expenditures for motor vehicle and parts manufacturers are expected to total \$970 million in 1963, up from \$830 million in 1962. (Data are expressed in current dollars.)⁽⁶⁾ By increasing the number of assembly lines and by installing equipment capable of producing an increased volume of output during the current year, motor vehicle and parts manufacturers aim to reduce average unit costs and thereby further boost profit margins, provided the present high volume of output is maintained.

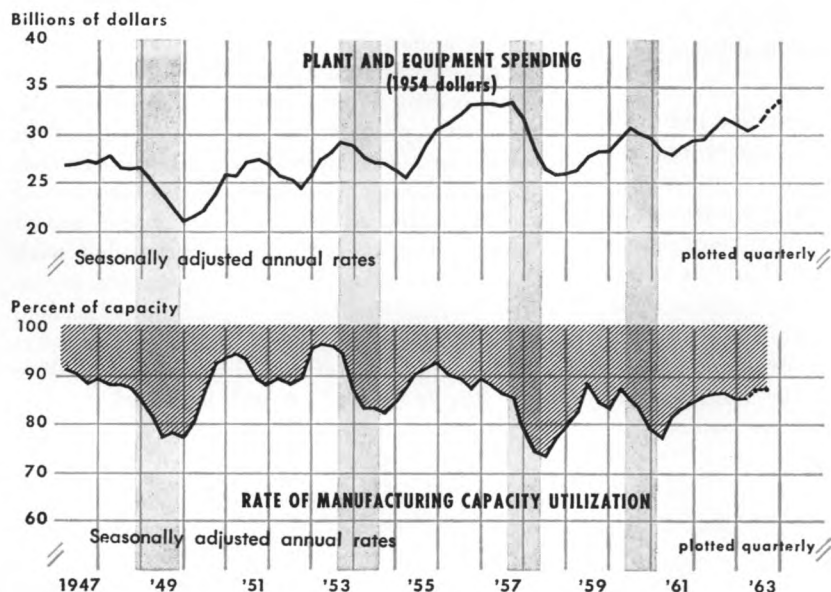
The Role of Capacity

The effect of increased output on manufacturing facilities is also an important consideration in capital spending. As already noted, a look at costs represents a direct way of measuring that effect. Although data on costs are not readily available for most industries, the rate of manufacturing capacity utilization serves, for the purposes of this article, as a useful alternative to data on costs.⁽⁷⁾ Unit labor costs, as well as other manufacturing costs, usually increase when the rate of manufacturing capacity utilization reaches the range of 85 percent to 90 percent. Thus, a

(6) See footnote (1).

(7) Manufacturers are the principle users of capital goods; thus, the rate of manufacturing capacity utilization is used here as a general measure for all industries. For a discussion of the problems of capacity measurement and for a definition of the capacity measure used here, see: "Measures of Productive Capacity," *Report of the Subcommittee on Economic Statistics to the Joint Economic Committee, Congress of the United States*, U. S. Government Printing Office, 1962.

Chart 4.



The rate of manufacturing capacity utilization has risen moderately for more than two years on an overall basis, lending strength to a continued expansion in capital spending.

Sources of data: U. S. Department of Commerce, Securities and Exchange Commission, The Board of Governors of the Federal Reserve System

look at the performance of the rate of manufacturing capacity utilization serves as a rough, but nevertheless useful, guide of the incentive to invest in capital equipment. On balance, the current rate of capacity utilization provides further indication that capital spending will accelerate in the last half of this year.

Chart 4 shows the rate of manufacturing capacity utilization together with plant and equipment spending expressed in 1954 dollars. As has been widely reported, the current rate of capacity utilization is low in comparison with other postwar recovery periods. A glance at the chart indicates, however, that the current rate of capacity utilization is still high enough to prompt a moderate expansion in capital spending, if historic relationships continue to apply.

The fact that the rate of capacity utilization is still in an expansion phase represents an-

other favorable indication of continued strength in business investment. The second quarter of 1963 represents the ninth quarter that the rate of capacity utilization has been steady or has moved up. The gradual and prolonged rise in the rate of capacity utilization on an overall basis during the present recovery is significant because capital spending has shown an historical pattern of continued increases for more than one year following a moderate decline in the rate of capacity utilization. The lag is due to the fact that some time usually elapses between orders for capital equipment and the installation of that equipment.

In a broader perspective, the current advance in capital spending may rest on a more sustainable footing than the two preceding expansions. Lending support to this view is the fact that capital acquisitions, thus far, have increased along with a corresponding

rise in the rate of manufacturing capacity utilization. Consequently, buyers of capital goods have utilized their capital acquisitions without adding unused manufacturing capacity.

During the major part of earlier non-war-time expansions in capital spending, the rate of manufacturing capacity utilization dropped while capital spending continued to rise. During such periods, capital acquisitions were made at a faster rate than manufacturers were able to fully utilize the new additions. Manufacturing facilities were progressively less effectively used: profits declined, and the means, as well as the incentive, to continue acquiring capital goods lessened.

The modest rise in the rate of manufacturing capacity utilization during the past two years also lends support to the view that the present expansion in capital goods may follow a more sustainable upward course than the preceding expansions. Compared with the two earlier periods, the current expansion in the rate of manufacturing capacity utilization appears sluggish. Nevertheless, the absence of a strong upward thrust during the initial phase of the current recovery coupled with the duration of the current expansion in the rate of manufacturing capacity utilization, may indicate that users of capital goods regard a rapid acceleration in capital spending with less favor than a well-balanced, moderate growth of capital goods.

RECENT SPECIAL PUBLICATIONS

BALANCE OF PAYMENTS AND MONETARY POLICY

A 16-page booklet containing the text of a report presented to a joint meeting of the Boards of Directors of the Federal Reserve Bank of Cleveland and of the Cincinnati and Pittsburgh Branches in Cincinnati, Ohio on September 12, 1963.

CROSS SECTIONS OF THE FOURTH FEDERAL RESERVE DISTRICT

A 104-page booklet analyzing economic activity of the various areas of the Fourth Federal Reserve District in terms of current standing and relative rates of growth.

Copies of these publications can be obtained without charge from the Research Department of the Federal Reserve Bank of Cleveland, Ohio (44101).

● Kentucky produces two-thirds of the total burley tobacco crop.

● Eighty percent of the crop is used in cigarette production.

A Look At Burley Tobacco

TOBACCO is one of the nation's most important agricultural crops; farmers receive \$1.3 billion a year, or 4 percent of all farm cash receipts from the sale of tobacco. Of the crops grown in the U. S., only cotton, wheat, corn, and soybeans provide a larger volume of income.

Six classes of tobacco are grown in the U. S.; differences between classes are primarily due to variations in plant variety, in soil and climate, in cultural practices, and in curing methods. Flue cured and air-cured, the two classes of tobacco which are used primarily in cigarettes, account for most of the tobacco produced. Flue-cured, named for the metal flues of the heating units used to cure the tobacco, accounts for 60 percent of all tobacco produced. Burley tobacco, the major air-cured type, represents 30 percent of the crop. In addition, burley tobacco is more widely grown than any other type of tobacco. Although eight states produce some burley tobacco, Kentucky, which lies partially in the Fourth Federal Reserve District, ac-



Source of data: U. S. Department of Agriculture

counts for 67 percent of the entire crop and represents the nation's largest burley producing region. (See map.)

The supply of burley tobacco has been relatively well adjusted to utilization in recent years. At present, however, burley tobacco supplies are approaching record levels and may become excessive although utilization has been increasing with gains in cigarette production. Two problems, however, confront the tobacco industry. First, per capita cigarette consumption declined slightly in 1962 for the first time in eight years. Speculation as to the cause of the decline has been a matter of much controversy. In addition, the use

of a particular chemical (maleic hydrazine) has caused debate between growers and buyers. This article reviews the importance of burley tobacco in Kentucky and the current supply-demand situation.

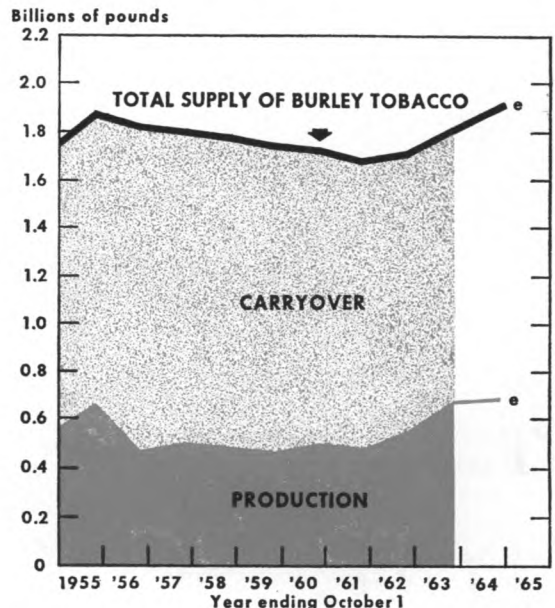
An Important Kentucky Product

Burley tobacco is by far the most important agricultural product in Kentucky. In 1962, Kentucky farmers received \$264 million from sales of burley tobacco, approximately 40 percent of total cash receipts. As burley is marketed by auction from late November through January, cash receipts are highly seasonal. Burley producers receive one-half of their annual crop receipts in December; in contrast, only 13 percent of all crop receipts are received in the same period. In the three-month marketing period, Kentucky tobacco growers receive 85 percent of their total crop receipts, while crop receipts of all U. S. farmers in this period are only 35 percent of the year's total.

The seasonal aspects of burley marketing also affect businesses involved in servicing tobacco producers. For example, demand deposits at Fourth District country banks (located in communities of less than 15,000 people) in Kentucky rise sharply in December, January, and February. In 1962, demand deposits climbed from \$137 million toward the end of November to \$160 million on December 26 and remained near that level until early March when they began to decline.

Lending and repayment patterns also reflect the seasonal income of tobacco farmers. Producers typically borrow in the spring months to finance planting costs and again during the topping, harvesting, and curing season from August to November, to cover hired labor costs. The borrowing is heaviest during the latter period. The loan volume outstanding increases until income from burley tobacco marketings is available for repayment. At a group of reporting banks in the Fourth District portion of Kentucky, the 1961-62 average monthly volume of loans

Chart 1.



Source of data: U. S. Department of Agriculture
e preliminary estimate

outstanding increased 21 percent from February to November, as new loan volume was larger than the volume of repayments, followed by a sharp decline from December to February as repayments grew larger during the marketing season.

Increasing Supplies

Total supplies of burley were estimated to have reached a record level of 1.9 billion pounds on October 1, 1963, 2 percent above the previous peak in 1955 (see chart 1). Tobacco must be aged in order to obtain the qualities necessary to manufacture cigarettes and other tobacco products. Thus, unlike wheat or cotton, it is necessary to maintain sizable stocks from previous years' production. Therefore, a significant measure of the burley tobacco supply-demand balance is found in the trend of total supplies to utilization, or the inventory-production ratio.

Total supplies of burley tobacco declined in relation to demand from 1955 to 1962. Prior to 1955, stocks increased as production exceeded consumption. As a result, supplies for the year ended October 1, 1955 were equal to 3.5 times the rate of utilization in that year. Smaller acreage allotments in the next six years combined with increased demand after 1958 resulted in a reduction of tobacco on hand. By 1961, the combination of controlled production and rising demand resulted in a supply ratio of 3.1. Consequently, allotments for the 1961 and 1962 crops were increased by 6 percent, and by the latter year, production moved up to a record level of 675 million pounds. For the most recent marketing year, ended October 1, total supplies were equal to 3.2 times utilization.

The level at which the supply-demand ratio is considered excessive or inadequate depends on prospective utilization. If the demand for burley tobacco continues to increase as it has in recent years, a ratio near 3.0 would be sufficient to keep supply and demand in balance. If utilization remains the same or declines, however, a 2.8 ratio, which is defined as a normal ratio of supply to disappearance by the 1938 Agricultural Adjustment Act, would be more nearly appropriate.

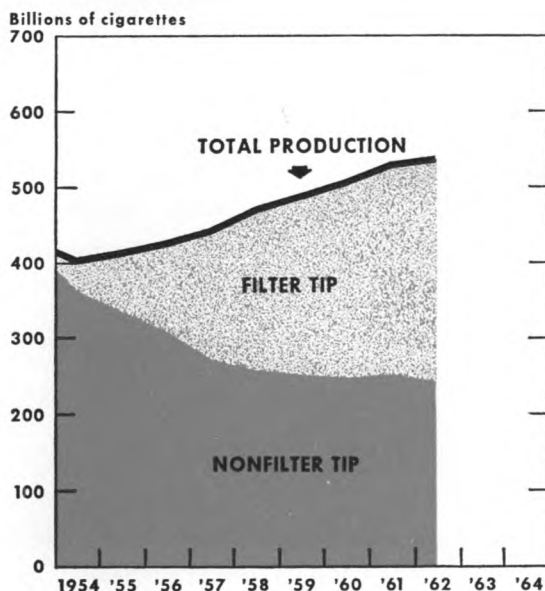
Burley tobacco production for the current marketing year is estimated at 685 million pounds. Although acreage allotments are virtually the same as a year earlier, excellent growing conditions are expected to push yield per acre to an all-time high.

Consumption Patterns

Cigarette output and the composition of cigarettes are the important determinants of demand for burley tobacco since more than 80 percent of the crop is used in cigarette manufacturing. Cigarette production totaled 535.5 billion in 1962, 33 percent above the 1954 level, but only 1 percent more than the previous year.

The demand for burley tobacco, however, increased only 10 percent in the 1954-62

Chart 2.
CIGARETTE PRODUCTION



Source of data: U. S. Department of Agriculture

period, mainly due to the rapid rise in filter cigarette production (see chart 2). Filter cigarettes now account for 55 percent of all cigarettes produced compared with only 9 percent in 1954. The filter-tipped brands require less tobacco than the conventional type. Consequently, the amount of burley tobacco used per cigarette has declined, although the proportion of burley tobacco has remained about 34 percent of the tobacco blend. In 1961, only .88 pound of burley leaf was used per 1,000 cigarettes, or 13 percent less than in 1954.

Despite the fact that cigarette production increased in 1962, per capita consumption of cigarettes declined slightly for the first time since 1954. The average number of cigarettes smoked by individuals 15 years of age and over was 3,958 in 1962, 1 percent below a year earlier. In contrast, consumption increased at

a yearly average rate of 2.6 percent from 1954 to 1961. Since the data measure consumption per person 15 years and over, not consumption per smoker, it is impossible to determine if the decline in per capita consumption was attributable to a decline in the average number of cigarettes consumed per smoker, a smaller rate of increase in the number of persons who became smokers, an increase in the number of persons who stopped smoking, or some combination of these factors.

Possible explanations for the decline may also be attributed to the impact of various studies about the effect of smoking on health or a change in population composition. A special committee of scientists working under the United States Surgeon General is attempting to clarify the health and smoking controversy. The findings of this committee are expected to be published late this year.

Pipe and chewing tobacco mixtures, secondary outlets for burley tobacco currently accounting for 10 percent of the total demand, have been declining. These secondary outlets used 58 million pounds of burley tobacco in 1961, 18 percent less than in 1954.

Exports now account for 9 percent of the burley crop. In the 1963 marketing year, exports were expected to total 48 million pounds, up from 45 million pounds in 1962 and from 33 million pounds in 1955. The five largest export markets for U. S. burley tobacco are West Germany, Sweden, Portugal, Egypt, and the Netherlands.

Price Movements

The average price received by burley producers has moved up sharply since 1954. Burley tobacco prices for the 1961 crop averaged 66.5 cents per pound, as compared with 49.8 cents per pound in 1954. As production became more closely aligned with demand, buyers were forced to utilize a larger proportion of the entire crop. As a result, during the 1955 to 1962 period, the price-spread between the top and lower tobacco grades narrowed, which pushed the average price higher.

The average burley tobacco price received for the 1962 crop dropped to 58.5 cents per pound. This decline reflects the 16 percent year-to-year gain in crop volume, and thus the more selective buying of processors. Significantly, the better grades of tobacco maintained the 1961 price level while the lower grades declined sharply.

In addition, the quality of the 1962 crop was lower than a year earlier which contributed to the price declines in the lower grades. The lower quality of the tobacco has been attributed to both weather conditions during the growing season and to the use of maleic hydrazine. As mentioned previously, the use of this chemical has resulted in controversy within the industry. Growers favor use of the chemical because it moderately reduces the amount of labor required; in addition, it usually increases yields per acre. Processors, on the other hand, argue that the chemical adversely affects the tobacco taste and reduces the filling power of the tobacco.