

INDUSTRIAL RAILROAD AND ELECTRIC UTILITY PLANT, EQUIPMENT AND
MAINTENANCE EXPENDITURES

by

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One of the chief factors of interest in attempting to assess the trend of business activity this year is the probable trend in industrial, railroad and utility expenditures. The present note does not pretend to offer a detailed discussion of the prospects in these fields. It merely presents some figures that are at hand and that seem to have some significance in this connection.

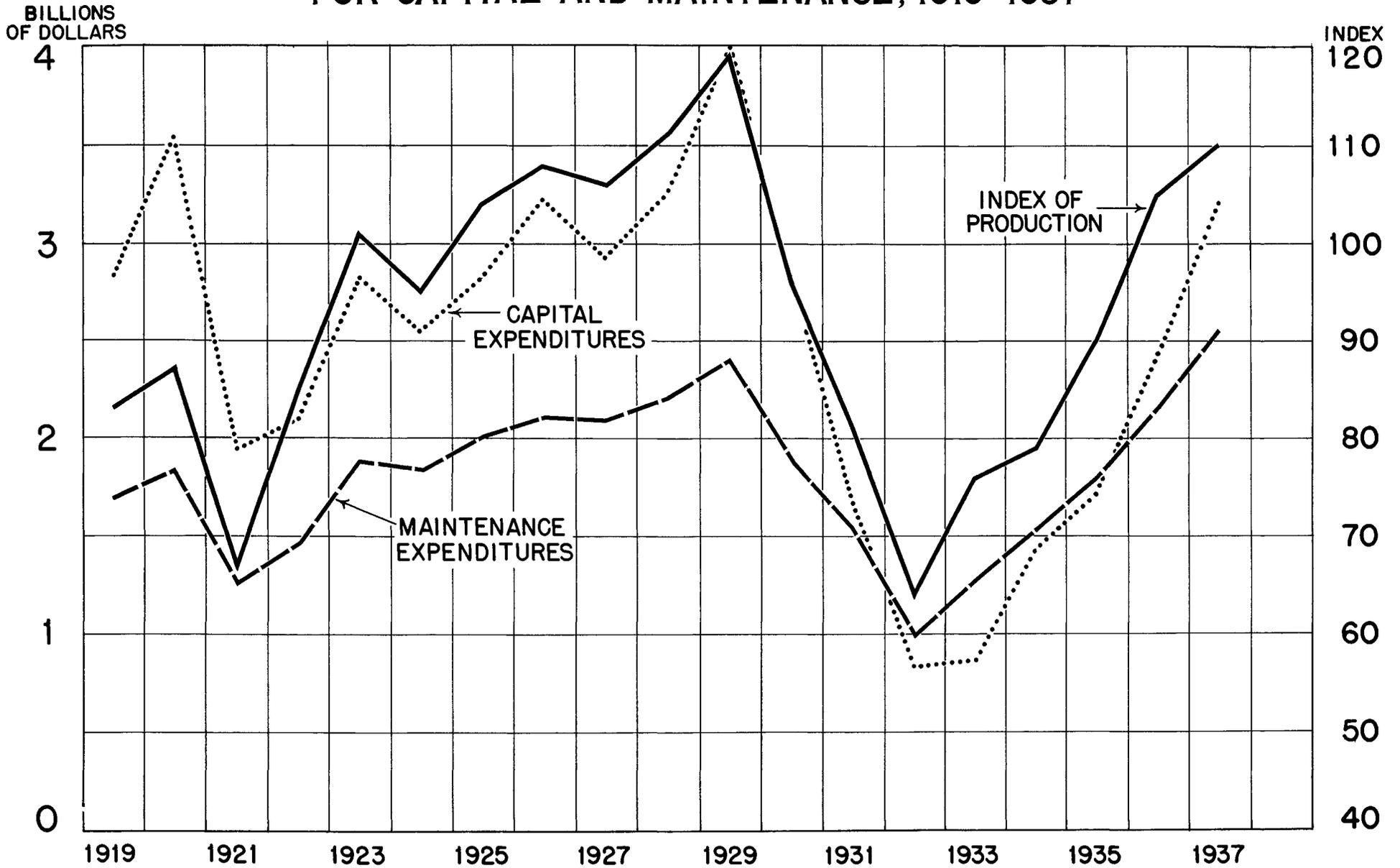
Some light upon the prospects for producers' goods expenditures in the current year may be derived by studying the relationship in the past between the trends of industrial expenditures and production, railroad expenditures and carloadings, and utility expenditures and power production. The estimates of annual capital and maintenance expenditures were made by Mr. Terborgh. Although for this purpose it would be more enlightening to plot monthly figures they are not available at this time. The following charts indicate, however, that some interesting and significant results appear even with annual data. Since our interest here is in actual dollar expenditures rather than physical quantities, no attempt has been made to allow for price changes. Finally, in interpreting the trends, it should be kept in mind that the figures refer to expenditures rather than orders.

I - Capital and Maintenance Expenditures in Mining and Manufacturing, 1919-1937.

This chart indicates that capital expenditures are closely correlated with movements in the Federal Reserve Board Index of Production. This result is in small part attributable to the fact that a portion of the production of plant and equipment is also included in the series from which the index of production is derived. That this is not the whole story, however, is indicated by some significant dissimilarities in the movements of the series. Thus, capital expenditures clearly lagged behind the rise in industrial production in 1933. There is also some indication that the slower rate of growth in 1934 in industrial production was reflected in a slower rate of growth in capital expenditures in 1935. Again, the recession in the last quarter of 1937 was sufficient to dampen down the yearly rate of increase in production, but not the yearly rate of increase in capital expenditures. This indication of a lag is supported by independent evidence of the maintenance of employment and shipments in the latter part of 1937 in various industrial equipment fields after industrial production had turned sharply downward. The same phenomenon is observable in 1926. Past relationships, therefore, suggest the probability of a sharp contraction in capital and maintenance expenditures for the year 1938 as a whole, and also suggest that an increase in such expenditures will follow, rather than precede, an upturn in general production.

Incidentally, the sharp increase in capital and maintenance expenditures in 1936 and 1937 is not consistent with the contention that the recession was initiated by a shortage of capital funds arising from taxation and monetary policies.

INDUSTRIAL PRODUCTION AND EXPENDITURES FOR CAPITAL AND MAINTENANCE, 1919-1937



II - Railroad Capital and Maintenance Expenditures, 1921-1937.

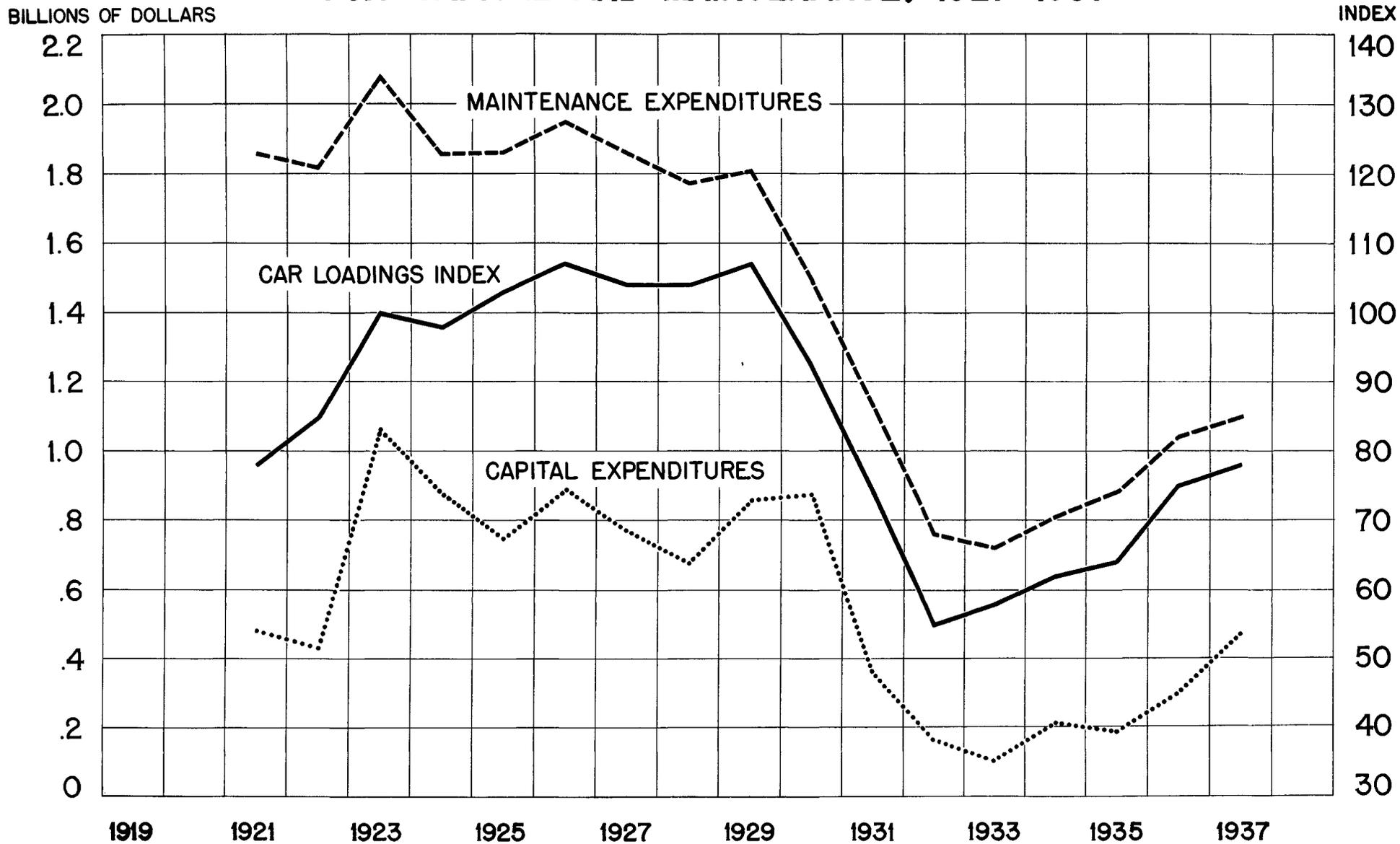
This chart compares the maintenance and capital expenditures of railroad companies with the Federal Reserve Index of Freight Car-Loadings. There appears to be a significant difference in the trends, especially from 1923 to 1929. This is in part associated with a more or less regular decline over the period as a whole in passenger transportation, improved equipment and increased efficiency.

The short-term movements show more clearly the dependence of capital and maintenance expenditures on the volume of traffic. There is a consistent lag in the recovery of such expenditures behind the recovery of freight traffic after each period of depressed business. This is true not only of the recoveries from the major depressions of 1921 and 1932, but also from the minor depressions of 1924 and 1927. There is also a definite lag of capital expenditures in 1930, when those expenditures remained at a high level in spite of a substantial decline in the volume of traffic.

Again in 1937, the decline in traffic in the latter part of the year slackened the rate of growth for the year as a whole over the previous year, but was not reflected in a slackening in the rate of increase in capital expenditures for the year as a whole.

Owing to the low volume of new orders in the second half of 1937, the maintenance of expenditures that occurred in 1930 is unlikely to be duplicated in the next six months.

FREIGHT-CAR LOADINGS AND RAILROAD EXPENDITURES FOR CAPITAL AND MAINTENANCE, 1921 - 1937



III - Electric Utility Capital and Maintenance Expenditures,
1921-1937.

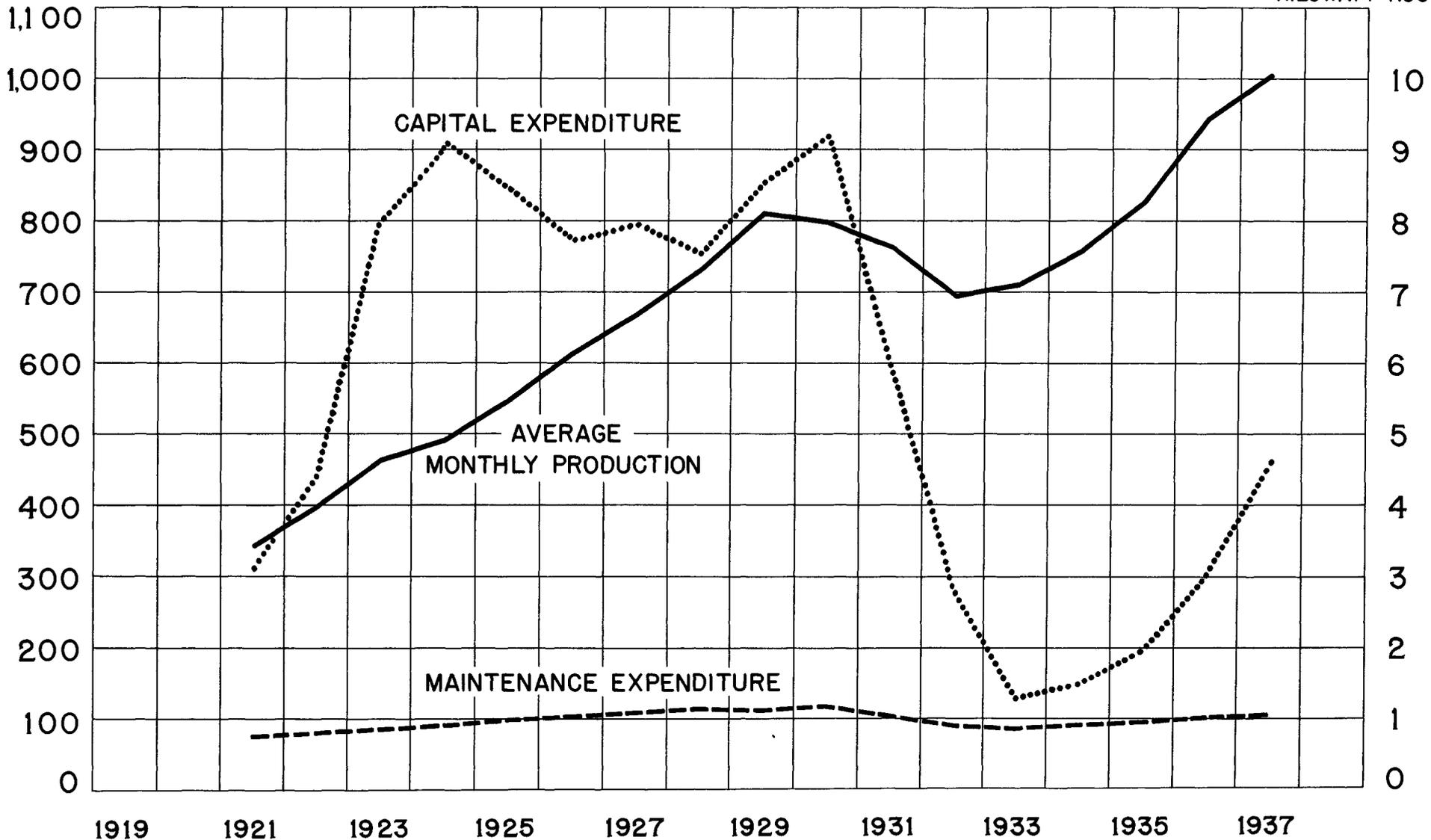
This chart shows the trends of electric power production and of expenditures by the electric power companies for capital and maintenance. The connection between these series is obscured somewhat by the large capital expenditures in 1923 and 1924, which resulted from a previous lag in construction of facilities and accompanying high utilization of capacity. After this deficiency was overcome, the policy of building for future growth rather than immediate requirements was generally followed. As a result, a comfortable reserve capacity was maintained; the Brookings Institution, in America's Capacity to Consume, estimated that reserve capacity in 1929 amounted to 27.5 per cent at the seasonal peak. Thus, capital expenditures fell to a very low level during the depression without affecting the ability of the companies to meet all demands for power.

It is worthy of note that the turning points in capital expenditures followed by one year the turning points in electric power output. Capital expenditures did not increase greatly following the depression decline until after output passed its 1929 peak in 1935. From 1929 to 1936 there existed a comfortable margin of capacity over utilization. Capital expenditures have more recently taken the form of installations of improved equipment rather than of construction of additional plants, a fact that makes capital expenditures more closely responsive to changes in output. Hence, the decline in output that began in the last quarter of 1937 might readily result in a large curtailment of capital expenditures in 1938, as contrasted with the actual increase following the 1929 downturn.

ELECTRIC POWER PRODUCTION AND UTILITY EXPENDITURES FOR CAPITAL AND MAINTENANCE, 1921 TO 1937

MILLIONS OF DOLLARS

BILLIONS OF
KILOWATT HOURS



IV - Conclusion

An examination of past relationships between mining and manufacturing capital and maintenance expenditures and the trend of industrial production, between railroad expenditures and the trend of carloadings, and between utility expenditures and the trend of power production suggests that, as a result of the decline in production, carloadings and power output, a considerable shrinkage in expenditures will occur for the year as a whole compared with 1937. It also raises serious question whether a revival in business activity will be initiated by an expansion of such expenditures. It serves to emphasize anew the importance of maintaining consumer buying power through the stimulation of residential construction and Governmental expenditures on work relief and, possibly, in other directions.