ECONOMIC OUTLOOK FOR THE U.S. STEEL INDUSTRY FOR THE YEAR 1965

by

VASANT K. BHATNAGAR

B.A., Allahabad University, Allahabad, 1959
M.A., Rajasthan University, Jaipur, 1961

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Approved by:

Edgar S. Bagley
Major Professor

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CHAPTER I

INTRODUCTION

"If we could first know where we are and whither we are tending, we could better judge what to do and how to do it."

Abraham Lincoln.

These words, a century old, explain as well as any the necessity of forecasting. In this world where the future is not known with certainty, virtually every business and economic decision rests upon a forecast of future conditions. Successful forecasting aims at reducing the areas of uncertainty that surround management decision- making with respect to costs, profits, sales, production, pricing and capital investment. If we knew the future, decisions could be made once for all and there would not be any need for revision. But in the real world, uncertainty exists and we need to have some system to predict future conditions.[1]

In the present day economy, forecasting has become an important branch of economics. Many different methods and scientific tools are available for economic forecasting. Before exploring these methods we will define the term "Economic Forecasting," and inquire as to its importance to the present day economic system.

"Forecasts are statements of expected future conditions; definitive statements of what will actually happen are patently impossible. Expectations depend upon the assumptions made if the assumptions are plausible,

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[1] Spencer, Clark, and Hoguet, Business and Economic Forecasting, (Richard D. Irwin, Homewood, Ill.), P. 7.

the forecast has a better chance of being useful."[1] Much of the work on forecasting analysis in recent years has proceeded from careful statements of the assumptions to be employed. When the underlying assumptions are spelled out in some detail, the plausibility of forecasts can be more readily judged.[2]

Now let us examine the question why forecasting is important.

There are a number of reasons why good forecasting is an important part of good business management.

1. There can be no intelligent or effective planning for business enterprise without the preliminary step of forecasting. The planned objective of the company can only be realized when a reasonably accurate forecast of the business conditions is made.

2. Successful budgeting of expenses, costs and profits depends upon good forecasting of sales and income.

3. Successful forecasting reduces the area of avoidable risk.

4. Good forecasting can help stabilize production and employment over the years by ironing out variations caused by seasonal fluctuations in sales.

5. Better forecasting will be needed by managements to deal successfully with the growing rigidities of labor costs and other problems brought about by organised labor and public opinion for greater security of employment in manufacturing industries.

6. Management needs a procedure which will provide correct trends of sales and employment not only for one year but for several years.

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[1] Elmer C. Bratt. Business Forecasting. (McGraw Hill Book Company Inc., New York, Toronto, London. 1958), P. 1.

[2] Ibid.

Forecasting is needed for the long term growth of the company.

7. Satisfactory controls of inventories of all kinds- raw materials, component parts, semifinished materials, work in process and finished goods are dependent on satisfactory forecasts of sales of raw material, parts requirements, and parts prices.

8. Successful planning of long term investment programs in new mills and new capital requirements depends on good long term forecasting of sales.[1]

These are some of the ways by which better forecasting can help produce successful planning and control of operations and contribute to better overall management. In sum, good planning depends on good forecasting.

Forecasts are made both for long term and short term. Long term forecasts are made for the growth of an economy or for an industry for periods of more than three years, while short term forecasting is made in order to plan for shorter periods, varying from one month to three years. All such forecasts, once made, are subject to revision. No forecast is likely to be accurate, and it will need to be revised as developments unfold in the economy. The present day economy has become so dynamic that changes occur frequently. Such changes should be taken into account in order to arrive at a satisfactory forecast.

In this report the primary objective is to forecast the outlook for the United States steel industry for the year 1965, that is, one year from now. This essentially is a short term forecast of a basic industry of the U.S. economy. The steel industry plays a vital role in the U.S.

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[1]Frank D. Newbury, Business Forecasting. (1st ed. New York, Toronto, London, McGraw Hill Book Company Inc., 1952), P.4.

economy. The per capita consumption of steel for the American people is the highest among the developed countries.

Although the steel industry is a basic industry, it does not have a direct demand. That is, steel is used by other industries whose products are demanded by people directly. It is basic because steel is used in such a wide variety and large number of important products. This is also known as the "use" factor in the business world. "Use" factors are applied to measures of activity in the consuming industries in order to convert them into an estimate of the amounts of steel needed.[1]

The major steel consuming industries are the automotive, construction, container, plant and equipment, steel distributors, rail transportation and contractor's products (Table 12). There are other industries which use steel but their consumption is not large compared to the above industries. In order to forecast the outlook for the steel industry, it will be necessary to forecast the outlook for steel consuming industries. The outlook for steel consuming industries will be influenced by general economic conditions, so it will be desirable also to forecast the outlook for general economic conditions for 1965.

Additional consideration must also be given to inventory policy relating to steel and to net exports; they may either add to steel demand or steel supply.[2]

The actual forecast must also consider the effects of competition

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[1]The best information on the amount of steel taken by various levels of activity in different industries is developed from the American Iron and Steel Institute's survey of shipments of steel products by market classifications published yearly in the Annual Report of American Iron and Steel Institute.

[2]Elmer C. Bratt, op. cit., P. 219.

from complementary products such as plastic, aluminum, paper, and reinforced concrete.

Labor contracts are also important. A strike or even a threat of strike has a great influence on the industry's outlook. In 1958 a strike crippled the steel industry for nearly 120 days.

Objectives

In this analysis, the main objective is to forecast the output of the U.S. steel industry for the year 1965. The basic tool is trend analysis. The equation for fitting the trend line to the given data is $Y = a + bX$, where Y is the dependent variable, X is the independent variable, while a and b are constants.

But before exploring the details of the outlook for the steel industry, some methods and techniques of forecasting will be reviewed.

Materials and Methods for Forecasting

Many methods are available for economic forecasting. Various authors have classified these methods in different ways. One has proposed the following classification.[1]

Mechanically - oriented procedures

Judgement - oriented procedures, and

Historically - oriented procedures.

In the first, mechanically oriented procedures, the definition proposed is:

> A mechanically - oriented procedure is one that relies primarily on purely atomatic methods involving, for example, trend pro-

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[1]Phillip B. Hartley, Short Range Business Forecasting. (The University of Kansas, Lawrence, Kansas, November 1962), P. 8

jection, rhythmic cycles, or any other procedure based on straight mathematical projection.[1]

The definition proposed for the second classification, judgement-oriented procedures, is:

> A judgement - oriented procedure is one that relies primarily on a method involving the opinions of an individual or a number of individuals.[2]

A historically - oriented procedure is one that:

> relies primarily on a method involving the use of past cause and effect relationships with the assumption that as one variable occurs in the future, another will react in the same (or nearly the same) manner as in the past.[3]

The use of leading indicators or money and credit statistics are examples of historically - oriented procedures.

In this report, the following methods will be used to forecast the outlook for steel for 1965.

1. The extrapolation of trend by means of linear regression analysis.

2. The 'Leading Series' approach develcped by the National Bureau of Economic Research.[4]

3. It will also take account of the projections made by a number of economists regarding general economic conditions for the next year. Consideration is also given to the outlook of steel consuming industries as predicted by various business forecasts. The forecast will also include the conditions in the steel industry, with emphasis on the forthcoming

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[1] Ibid.

[2] Ibid.

[3] Ibid.

[4] Geoffrey H. Moore, and other personnel at The National Bureau of Economic Research have developed the Lead, Lag and coincident Indicators.

negotiations between labor and management regarding the new contract.

In order to use the trend equation the following steps were followed:

Data from publications of the Department of Commerce, from Economic Indicators[1] and from the American Iron and Steel Institute were used. In order to project the demand for steel various series concerning general economic conditions were studied as well as series related to the steel consuming industries, and the steel production series.

In order to find the trend, data from 1950 to the second quarter of 1964 were measured. The trend line equation is fitted to these series and is projected to 1966. The trend figures are plotted on graphs. Estimates for 1965 can be obtained from the trend line.

Before proceeding with the trend analysis certain assumptions are made.

1. During the period of study (till the end of 1965) there will not be major wars. Even the worsening of the situation in Viet Nam, Laos or the Congo may have a great effect on the world economy and especially on the United States economy because of commitments of the economy.

2. There will not be any prolonged strike. The assumption is made that the forthcoming negotiations in the steel industry between labor and management regarding the new contract will be settled without a strike.

3. There will not be any significant changes in consumer behavior.

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[1] Economic Indicators. Prepared by Joint Economic Committee. (Washington: U.S. Government Printing Office).

CHAPTER II

OUTLOOK FOR GENERAL ECONOMIC CONDITIONS FOR 1965

Before discussing the outlook for 1965, conditions in the U.S. economy for the last four years are reviewed.

In the period 1958-60, the U.S. economy was suffering from recession. This was a major concern for the administration. It was also facing a balance of payments problem.

The recovery phase began sometime in March 1961. Since March 1961 gross national product has risen by over 19 per cent (in real terms). Business has enjoyed prosperity as profits rose to record levels. The number of unemployed has decreased from 6.9 per cent of the labor force in early 1961 to 5.2 per cent in September, 1964.[1] Of course this does not mean that adequate standards of living are available to all. Unemployment is still at too high a level to be regarded as tolerable. The wholesale price index stands at virtually the same level as it did six years ago. During the past year, that is, August, 1963 to September, 1964, the consumer price index rose from 107.1 to 108.4 (Table 2 and Graph 2b). The growth has been seen in all sectors of the economy. This is a very notable characteristic. Such a balanced growth may be responsible for the sustained nature of recovery.[2]

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[1] 'Employment, Unemployment, and Wages,' Economic Indicator. November 1964, P. 10.

[2] Gerhard Colm and Carol Carson, Adapted from Economic Outlook for 1965, (Washington: National Planning Association, New Hampshire Avenue, October 1964).

The National Bureau of Economic Research (NBER will be used hereafter) leading indicators do not point to any clear trend downwards. In the case of new building permits (Plate I, Appendix 1) there has been a little dip but this has recently (October 1964, 1220 to November 1964, 1258, thousands of unit)[1] turned upward again. Most of the leading indicators, such as average work week in manufacturing, gross accession rate in manufacturing, new orders, durable goods industries, commercial and industrial building contracts, corporate profit after taxes, common stock prices index, change in business inventory, and lay-off rate still are showing an upward trend.

The NBER roughly coincident indicators also shown an upward trend (Plate III, Appendix P III). Generally, the roughly coincident group contains series which show no pronounced tendency to lead or lag the turning points in the general business cycle. These coincident series show an upward trend even after the leading indicators start showing a downward trend. But so far no such trend is observed. The NBER lagging indicators, covering five series, follow behind the general turns by an average of $7\frac{1}{2}$ months for the slowest series, and by negligible amounts for the closest follower, personal income.[2]

The plates show the leading, roughly coincident, and lagging indicators. In these graphs no significant downward trend is noticed.

Considering all these, it appears that the economy is still performing well allthrough 1964. In fact 1964 has proved to be a record year.

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[1] Economic Indicators, Council of Economic Advisers, (Washington: U.S. Government Printing Office, December 1964).

[2] Maurice. W. Lee, Economic Fluctuations, (Richard D. Irwin, Inc. Homewood, Illinois. March 1955).

Disposable Income

Disposable income plays an important role in an economy because of the fact that consumer spending is closely related to disposable income. The increase in disposable income from 1950 to 1964 was 107.8 per cent (Table 1 Graph 1a). It has been rising at the rate of about 7.2 per cent per annum. Since 1961, it has risen by 18 per cent. It is expected that it will continue at the same rate unless something extraordinary happens. Moreover in 1965 President Johnson intends to ask for another tax cut in the form of cuts in excise duties. If this is done, it will have effects on disposable income. If the disposable income continues to rise at the same rate, it is likely that it will reach around the $465 billion figure by the end of 1965.

Personal Consumption

Personal consumption depends upon disposable income. If people have more disposable income, they are likely to spend more. During 1964 the rise in disposable income and saving was much bigger than the rise in 1963. Disposable income in 1962 was $384.6 billion and at the end of 1963 it was $402.6 billion. So the rise was by about 5.6 per cent. Using the 1964 third quarter figure of $435.6[1] billion to comparison the rise over 1963 was about 8.22 per cent. In the case of personal consumption the increase was from $356.8 billion to $375.0 over the period of 1962 to 1963. While the rise from 1963 to the third quarter of 1964 was from $375.0 billion to $404.6 billion. The percentage rise in personal consumption over the period of nine months was 7.89 per cent. In the case

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[1] Economic Indicators, Disposition of Personal Income, Prepared for the Joint Committee by Council of Economic Advisers, (Washington: U.S. Printing Office, November 1964), P. 5.

TABLE 1

DISPOSABLE INCOME, PERSONAL CONSUMPTION AND PERSONAL SAVINGS

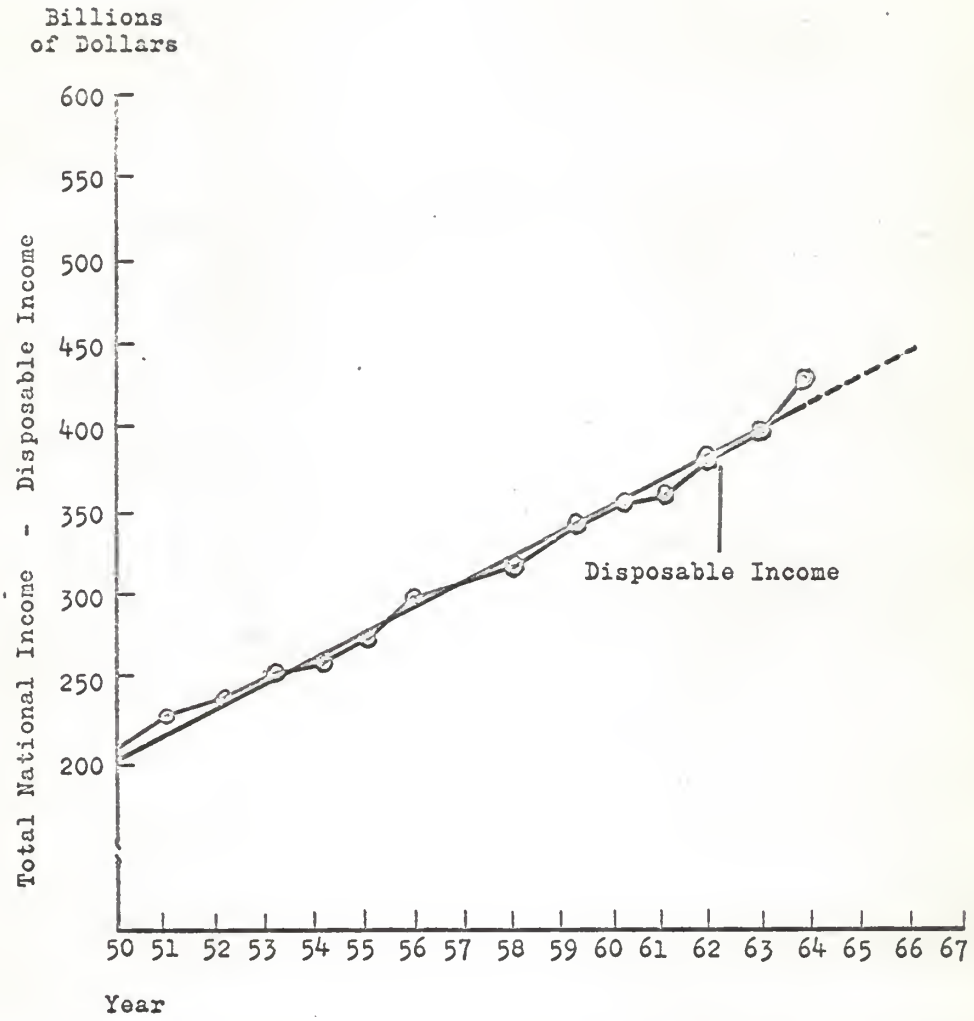
Year	Disposable Income	Calculated Trend	Personal Consumption	Calculated Trend	Personal Savings	Calculated Trend
	In Billions of Dollars					
1950	207.7	204.1	195.0	195.92	12.6	16.10
1951	227.5	219.2	209.8	208.96	17.7	17.08
1952	238.7	234.3	219.8	222.00	18.9	18.06
1953	252.5	249.4	232.6	235.04	17.5	19.04
1954	256.9	264.5	238.0	248.08	23.0	20.02
1955	274.4	279.6	256.9	261.12	23.6	21.00
1956	292.9	294.7	269.9	274.16	24.7	21.98
1957	308.8	309.8	285.2	287.20	23.6	22.96
1958	317.9	324.9	293.2	300.24	24.7	23.94
1959	337.1	340.0	313.5	313.28	23.6	24.92
1960	349.9	355.1	328.2	326.32	21.7	26.90
1961	364.7	370.2	337.3	339.36	27.3	26.88
1962	384.6	385.3	356.8	352.40	27.8	27.86
1963	402.6	400.4	375.0	365.44	27.5	28.84
1964*	431.3	415.5	396.1	378.48	35.2	29.82
1965		430.6		391.52		30.80
1966		445.7		404.56		31.78

*Preliminary figures for 1964 second quarter.

Note: Data for Alaska and Hawaii included beginning 1960.

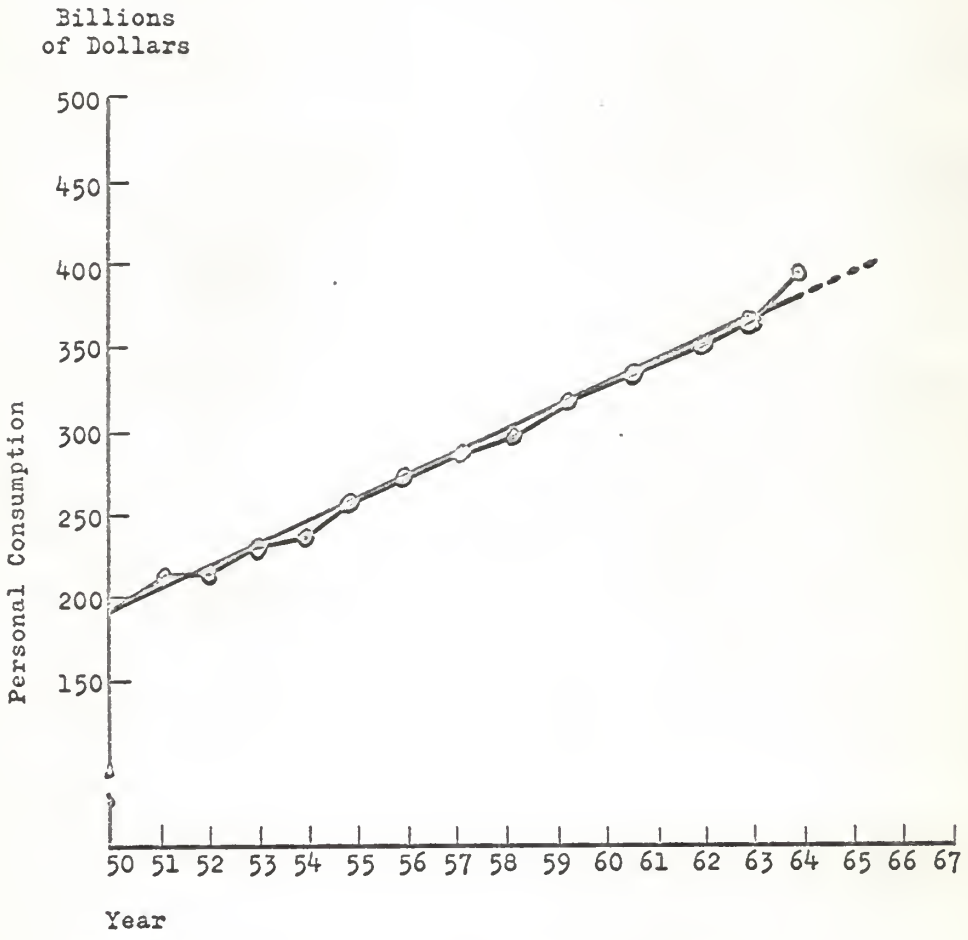
Sources: Department of Commerce and Council of Economic Advisers.

of personal savings, there was a decline between 1962 and 1963 of 0.3 billion dollars, but during the period from 1963 to the third quarter of 1964 personal savings increased by 12.7 per cent. This shows that the increase in disposable income increases personal consumption and also increases personal savings. The contrast between these two periods is due, in part to the tax cut. This increase in disposable income, personal consumption and personal savings during 1964 can also seen on the Graphs



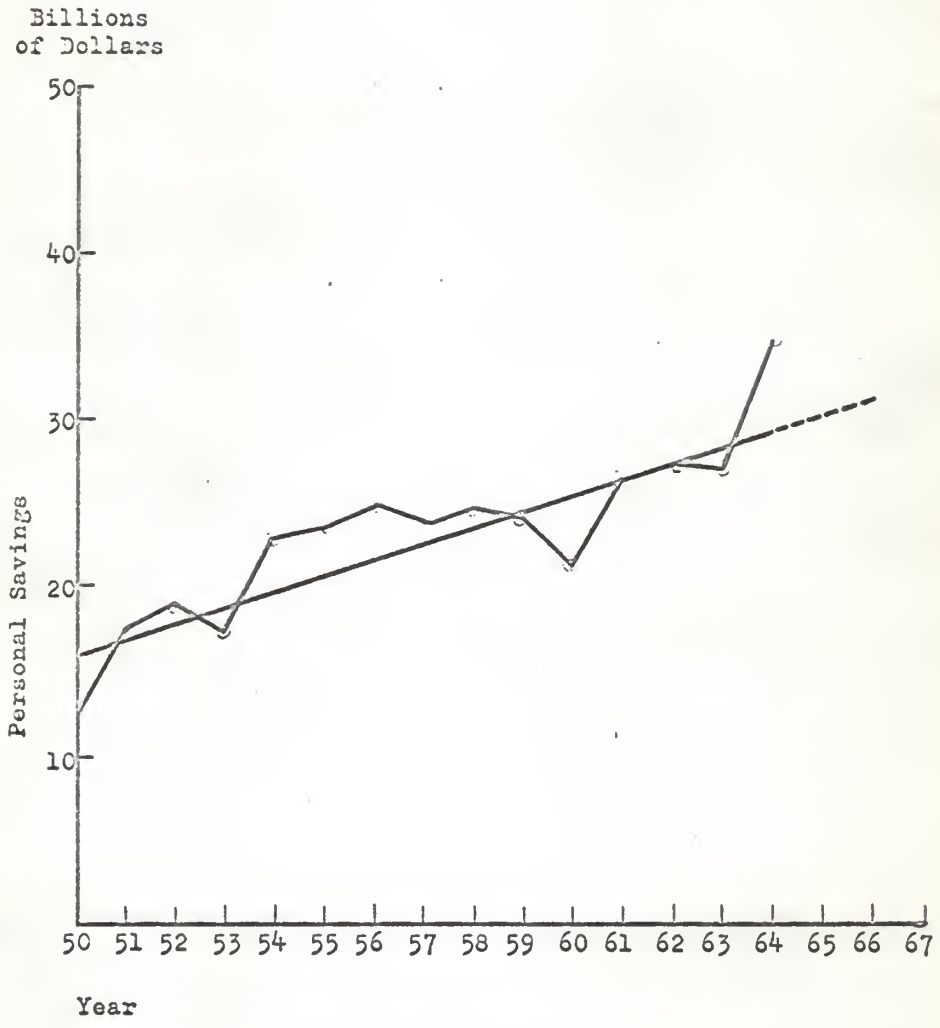
Graph No. 1a Disposable Income, Personal Consumption and Personal Savings

$Y_{di} = 189.0 + 15.1X$



Graph No. 1b Personal Consumption

$Y_{pc} = 182.88 + 13.04X$



Graph No. 1c Personal Savings

$Y_{ps} = 15.12 + 0.98X$

(Graph 1a, 1b and 1c). During the period from 1950 to 1964 personal consumption rose by 103.8 per cent and during the recovery phase (1961 to first quarter 1964) it rose by 11.5 per cent.

But from the large increase in purchases between fourth quarter 1963 and first quarter 1964, it appears that households anticipated a tax cut. Subsequent increases, although not quite as large, were still substantial. The greatest expenditures have been in expenditures on durables. Savings in the second quarter of 1964 rose to 8.2 per cent of disposable income. (Table 1 and Graph 1c.) Substantial additions were made to currency and bank deposits.

As the third quarter decline suggests for the rest of 1964 and into 1965 the saving rate can be expected to approach a more normal range; retailers are expecting a free spending Christmas. Since automobile sales represent over one third of the more volatile consumer durables expenditures, interest centers around on the considerably revamped 1965 models to see whether a fourth consecutive year of high sales is in the making. On one hand, because of lower production in the late 1950's, fewer cars are candidates for scrapping, a factor known to have a direct relation to new car sales. On the other hand, with few exceptions, prices on autos were held steady even though an expensive labor agreement had been reached.[1]

The strike against the General Motors Corporation and the Ford Company has pushed the purchases of many new cars into the calender year of 1965.

Government policy measures also influence consumer expenditure. The second phase of the individual income tax reduction will become

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[1]Gerhard Colm and Carol Carson, op. cit.

effective January 1, 1965 with a further decline in tax liabilities of about three billion dollars. Many economists feel that because the reduction in 1964 withholding rates was more than 1964 tax cuts many tax payers will find that not enough taxes were withheld and that they must pay additional taxes. The estimate of this amount is around two billion dollars.[1]

A reduction in excise taxes by possibly as much as three billion dollars in 1965 would not be surprising. President Johnson has proposed such a reduction and the Democratic party has an absolute majority in both the houses. The reduction of excise taxes on big items such as cars may have a significant effect on consumer expenditure. Considering all these and the plotted trend, (Table 1 and Graph 1b) personal consumption may be expected to rise in 1965 at almost the same rate as 1964. It is forecasted that it will rise to around $428 billion.

Residential Construction

It had been anticipated that housing would begin to show some weakening in 1964. By September housing starts had declined persistently from October, 1963 and leading series in housing, namely building permits issued and applications for government loan commitments, (Plate I, Appendix I) have shown declining trends since last winter. The decline so far has been centered in apartment building, reflecting over-building in some cities.[2]

1965 will probably show little change in the volume of construction from 1964. According to the Business Week[3] report, construction

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[1] Gerhard Colm and Carol Carson, op. cit.

[2] Gerhard Colm and Carol Carson, op. cit.

[3] "Business Outlook," Business Week, December, 1964, P. 20.

industry analysts expect about 1,525,000 starts in apartment and house building, the same as this year. The cause of cheer is the change in trend.

Especially welcome is the predicted steadiness in apartment construction. The forecast is supported on both by surveys of actual and potential demand. A Census Bureau survey in November, 1964 showed consumer intentions to buy houses at a five year high. The Census Bureau survey shows that 5.7 per cent of all households are planning to buy new homes in the next year. The increase is mainly in potential buyers for old houses, but builders point out that a strong used house market makes it easier for families to trade up to new houses.[1]

Another factor which is important in residential construction is family formation. The number of Americans reaching 18 has been running about 2.75 million a year; next year it will jump up by almost a million.[2]

Industrial Production

The industrial Production Index is also an important indicator of general economic conditions. The industrial production index in 1950 was 75 (base 1957 - 59 = 100). It rose to 128.5 in 1964 (first quarter). This is a significant rise in industrial production. During this period of fifteen years it has taken two dips. One was in 1954 and other was in 1958. Both of these years were recession years. But since 1958 it has been rising. After 1961 the rise was rapid (Table 2 and Graph 2a). In the year 1964 it is expected to be around 135-6. The trend in the graph

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[1] "Housing Turns a Corner," Business Week, No. 1842, December 19, 1964. p. 19.

[2] Ibid.

TABLE 2

INDUSTRIAL PRODUCTION AND CONSUMER PRICES

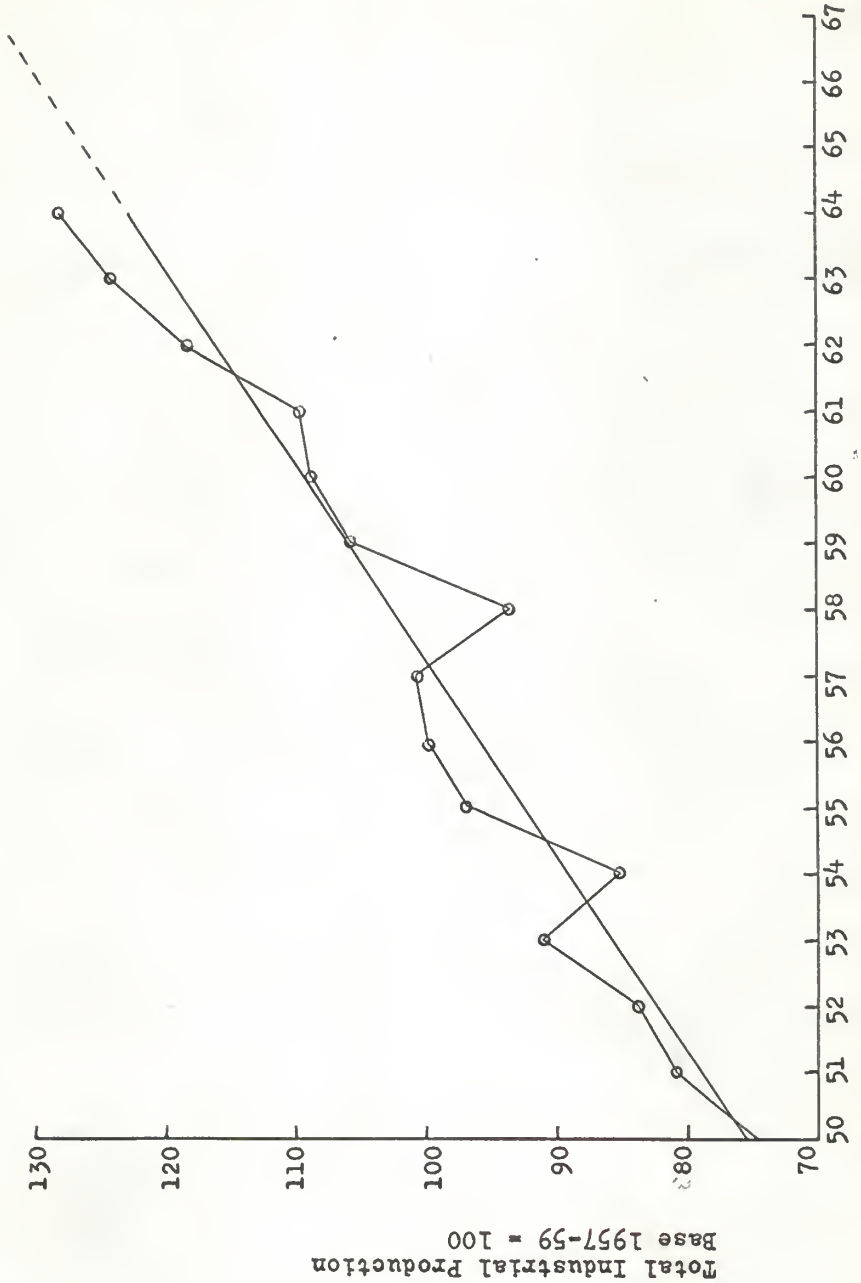
Year	Total Industrial Production 1957-59=100	Calculated Trend	Consumer Prices 1957-59= 100	Calculated Trend
1950	75.0	76.40	83.8	87.3
1951	81.0	79.74	90.5	88.82
1952	84.0	83.08	92.5	90.34
1953	91.0	86.42	93.2	91.86
1954	85.8	89.76	93.6	93.38
1955	96.6	93.10	93.3	94.90
1956	99.9	99.44	94.7	96.42
1957	100.7	99.78	98.0	97.94
1958	93.7	103.12	100.7	99.46
1959	105.6	106.46	101.5	100.98
1960	108.7	109.80	103.1	102.50
1961	109.8	113.14	104.2	104.02
1962	113.3	116.48	105.4	105.54
1963	124.3	119.82	106.7	107.06
1964*	128.2	123.16	107.8	108.58
1965		126.50		110.10
1966		129.84		111.62

*Preliminary figures.

Source: Board of Governers of The Federal Reserve System. Department of labor.

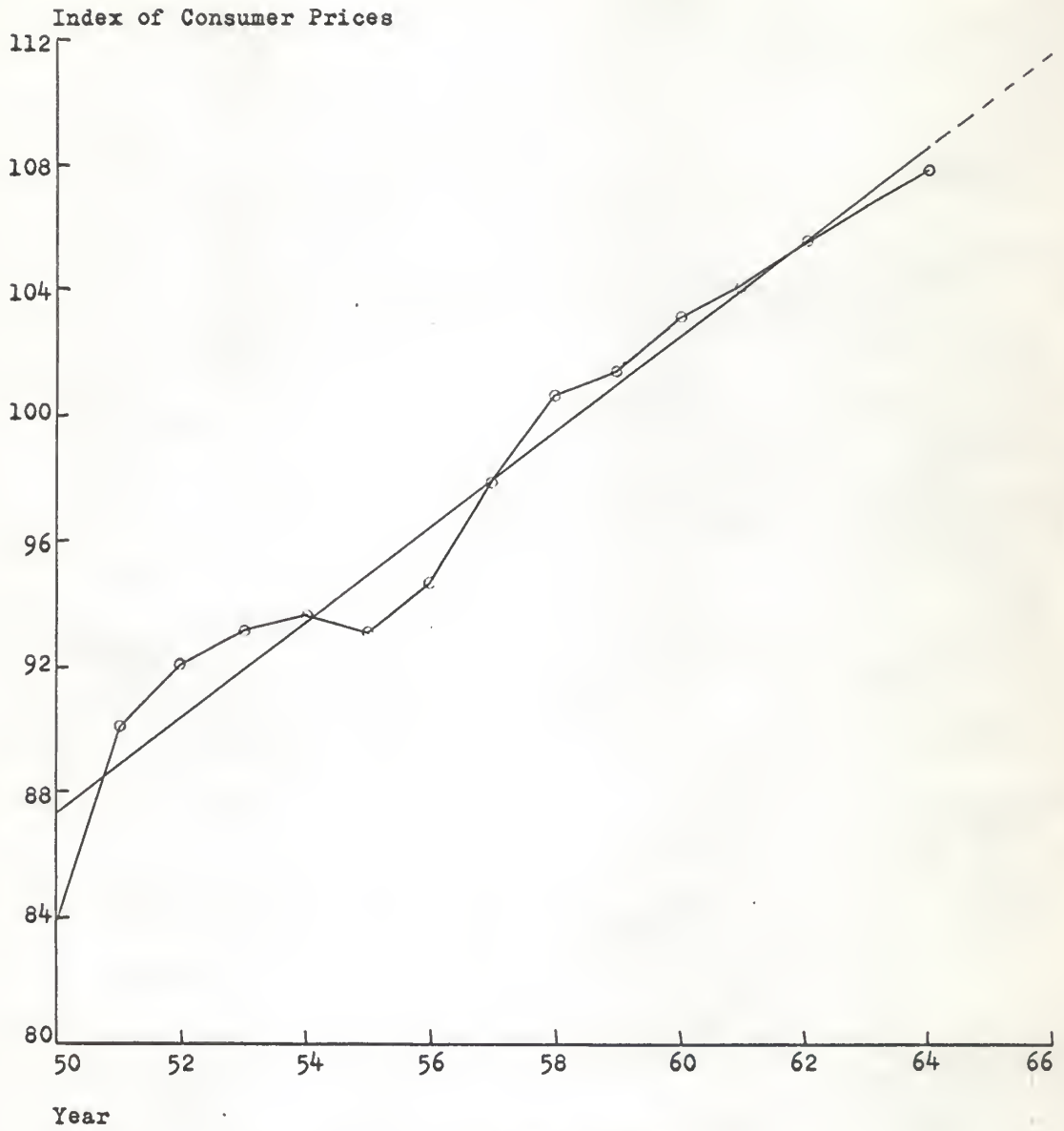
also indicate a steady increase. Most industrialists feel that the first half of 1965 will see a further rise in industrial production.[1] It is likely that the rate might slacken in the second half of 1965. The trend line in the graph (Graph 2a) also shows an increase in industrial production.

[1] "Business Round Up," Fortune, Vol. 71.1, January 1965. P. 27.



Graph No. 2a Industrial Production and Consumer Prices

$Y_{ip} = 73.06 + 3.34X$



Graph No. 2b Consumer Prices

$Y_p = 85.78 + 1.52X$

Consumer Prices

It may be surprising in view of the rapid and steady rise or output that prices (consumer) have been quite steady. There has been very little inflation in the economy during the last three years. The graph (Table 2 and Graph 2b) shows that consumer prices have not risen much since the year 1962, although they rose some what more rapidly from 1956 to 1960. Consumer prices are important for the buying behavior of consumers, especially in the case of durable goods.

Recently the auto workers obtained a raise of more than the 3.2 per cent implied in Council of Economic Adviser's "guide posts." And now the steel industry is engaged in discussions about wages. It is likely that the steel workers will also obtain a wage increase. Recently steel prices have been increased. These wage increases may cause additional increases in steel prices. A possible wage price spiral has to be watched.

Considering these developments, it appears that consumer prices might rise a little faster than during the past several years. The consumer price index stood at 108.4 in September of 1964 (base 1957-59 = 100). The rise in consumer prices from January was 0.7 points. It is likely that consumer prices at the end of 1965 will be around 110.0.

Corporate Profits and Gross Private Domestic Investment

Study of corporate profits before taxes for the last fifteen years shows that during recession period corporate profits have declined sharply. This was the case in 1954 and 1958 as shown in table 3 and graph 3a. During the recovery phase starting early in 1961, corporate

TABLE 3

CORPORATE PROFITS AND GROSS PRIVATE DOMESTIC INVESTMENT

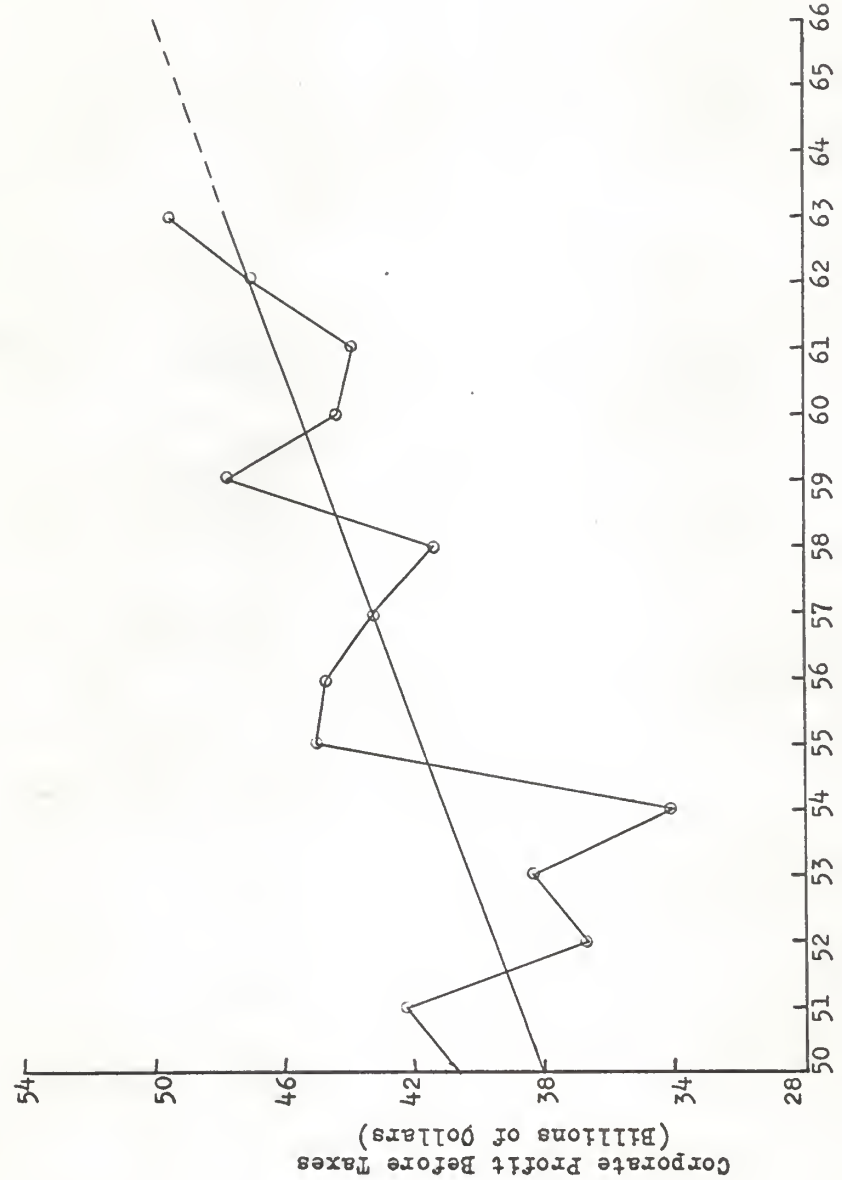
year	Corporate Profits before taxes	Calculated trend line from the equation	Total Gross Private Domestic Investment	Calculated trend from the line equation
	In Billions of Dollars			
1950	40.6	38.09	50.0	47.03
1951	42.2	38.83	56.3	49.58
1952	36.7	39.57	49.9	52.09
1953	38.3	40.31	50.3	54.62
1954	34.1	41.05	48.9	57.15
1955	44.9	41.79	63.8	59.68
1956	44.7	42.53	67.4	62.21
1957	43.2	43.27	66.1	64.74
1958	37.4	44.01	56.6	67.28
1959	47.7	44.75	72.7	69.89
1960	44.3	45.49	71.8	72.34
1961	43.8	46.23	68.8	74.87
1962	46.8	46.97	79.1	77.40
1963	51.5	47.71	82.0	79.93
1964*	N.A.		87.2	82.46
1965		48.45		84.99
1966		49.19		87.52

*Preliminary estimate.

Note: Data for beginning 1962 have been adjusted for effects of new depreciation guidelines ($2½ billion for 1962). Therefore not comparable with previous years.

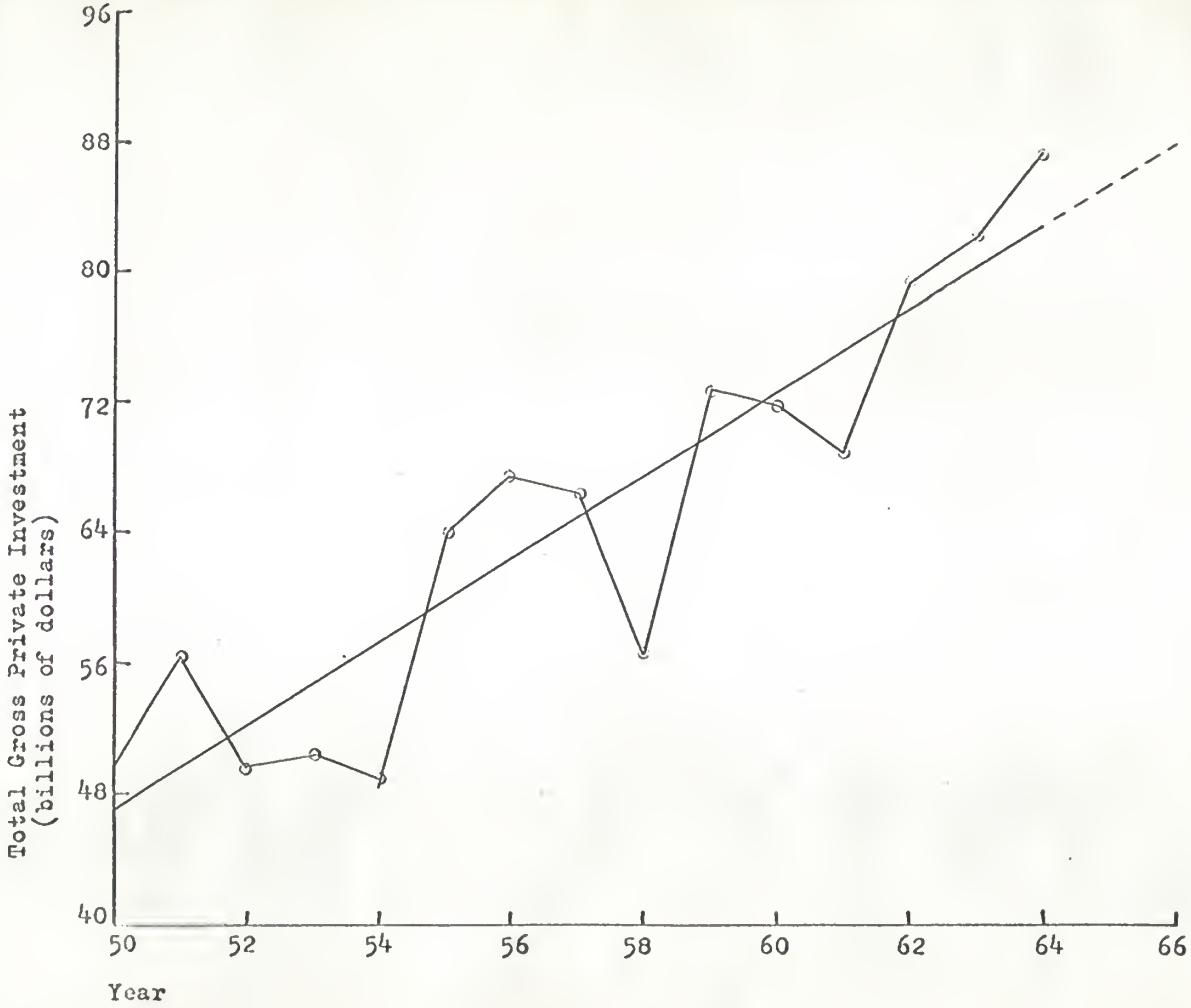
Source: Economic Indicators, Council of Economic Advisers, Washington: Government Printing Office. November 1964.

profits before taxes by 1963 had increased by almost seventeen per cent. The trend shows that this rise may be expected to continue. In the current year (1964) this rise was helped by the tax cut. The effect of this tax cut will also help in keeping up the present rate; at least the increase will probably continue through the first half of 1965.



Graph No. 3a Corporate Profits

$Y_{cp} = 37.35 + 0.74X$



Graph No. 3b Gross Private Domestic Investment

$Y_{pdi} = 44.5 + 2.5X$

It is likely that the second half of 1965 might show a decline in the profit rate. This is probably due to the fact that most of the steel consuming industries will be slowing down their inventory accumulation activities. This will be due to the fact that the labor situation in the steel industry will be clarified by that time.

Corporate profit after taxes[1] is one of the leading indicators in the NBER series. This series does not point a downward trend in the next few months (Plate I and Appendix II).

Gross Private Domestic Investment

Gross private domestic investment is following almost the same pattern as that of corporate profit. It is also increasing. The rate of increase from 1961 to 1963 was about 23.2 per cent. The trend from 1950 to 1964 suggests that gross private domestic investment will continue to rise in 1965. The gross private domestic investment is discussed in earlier section on residential construction. It will be discussed under inventory development and under expenditure on new plant and equipment in following pages.

Manufacturer's Sales and Trade Sales
(Wholesale and Retail)

Manufacturer's sales have followed a similar pattern to that of the steel and automobile industries (Table 4 and Graph 4a). Manufacturer's inventory also has a similar pattern. Considering the present performance and the trend from the graph, it appears that 1965 will be a good year for sales, while it is likely that the level of inventory

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[1]Department of Commerce, Bureau of Census, Corporate Profit after Taxes, OBE, Washington: Government Printing Press.

in 1965 will increase as compared to the inventory figure in 1964. This increase in inventory level in 1965 will be due in part to the fear of a strike in the steel industry. Most of the steel consuming industries will be trying to stock steel sheets and other steel products as a possible hedge against a strike in the steel industry.

New orders have been rising and are keeping the same pace as in the previous years (1962-63). The trend in graph 4c shows that the new orders may be expected to increase.

Trade Sales and Inventory
(Retail and Wholesale)

Retail sales have been increasing since 1950 up until now except for the years 1954-1955 and 1959-1961. Since the year 1962 they have been rising. In 1964 the sales figures are quite impressive.

During the months of October and November, due to the strike in the auto industry, car sales were lagging. These two months last year were record smashers for the auto industry. Sales would have done well to pull very far ahead in any event. But with the shortage of cars, estimated retail sales ran $ 580 million behind in October and $350 million in November. Take the sales of autos and automotive equipment out of retail totals and other types of durables did very well. Furniture and appliances which have been doing well right along, posted another healthy year-to-year gain in November; October and November together ran $150 million ahead of last year (1963), a 7 per cent gain.[1]

Wholesale Sales

Wholesale sales are also on the rise since 1961 and have been

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[1] "Business Outlook," op. cit., No. 1842, P. 12.

TABLE 4

MANUFACTURER'S SALES, INVENTORY AND NEW ORDER

Year	Sales[1]	Calculated from trend line equation	Inventory[2]	Calculated from trend line equation	New order	Calculated from trend line equation
			In Billions of Dollars			
1950	19.28	20.37	34.31	38.93	20.98	21.17
1951	22.31	21.45	42.82	40.49	24.51	22.16
1952	22.85	22.53	43.80	42.05	23.58	23.15
1953	24.52	23.61	45.43	43.61	23.11	24.14
1954	23.53	24.69	42.98	45.17	22.48	25.13
1955	26.34	25.77	46.30	48.13	27.17	26.12
1956	27.74	26.88	50.64	48.29	28.38	27.11
1957	28.74	27.93	51.87	49.85	27.51	28.10
1958	27.28	29.01	50.07	51.41	26.90	29.09
1959	30.22	30.19	52.70	52.97	30.68	30.08
1960	30.80	31.17	53.81	54.53	30.12	31.07
1961	30.88	32.25	55.09	56.09	31.06	32.06
1962	33.31	33.33	57.75	57.65	33.17	33.05
1963	34.77	34.41	60.15	59.21	35.04	34.04
1964[3]	36.34	35.49	60.07	60.77	36.84	35.03
1965		36.57		62.33		36.02
1966		37.65		63.89		37.01

Source: Department of Commerce.

going strong. The trend line also points to a continuation of rising wholesale sales (Table 6 and Graph 6a). In 1964 wholesale sales showed a sharper rise.

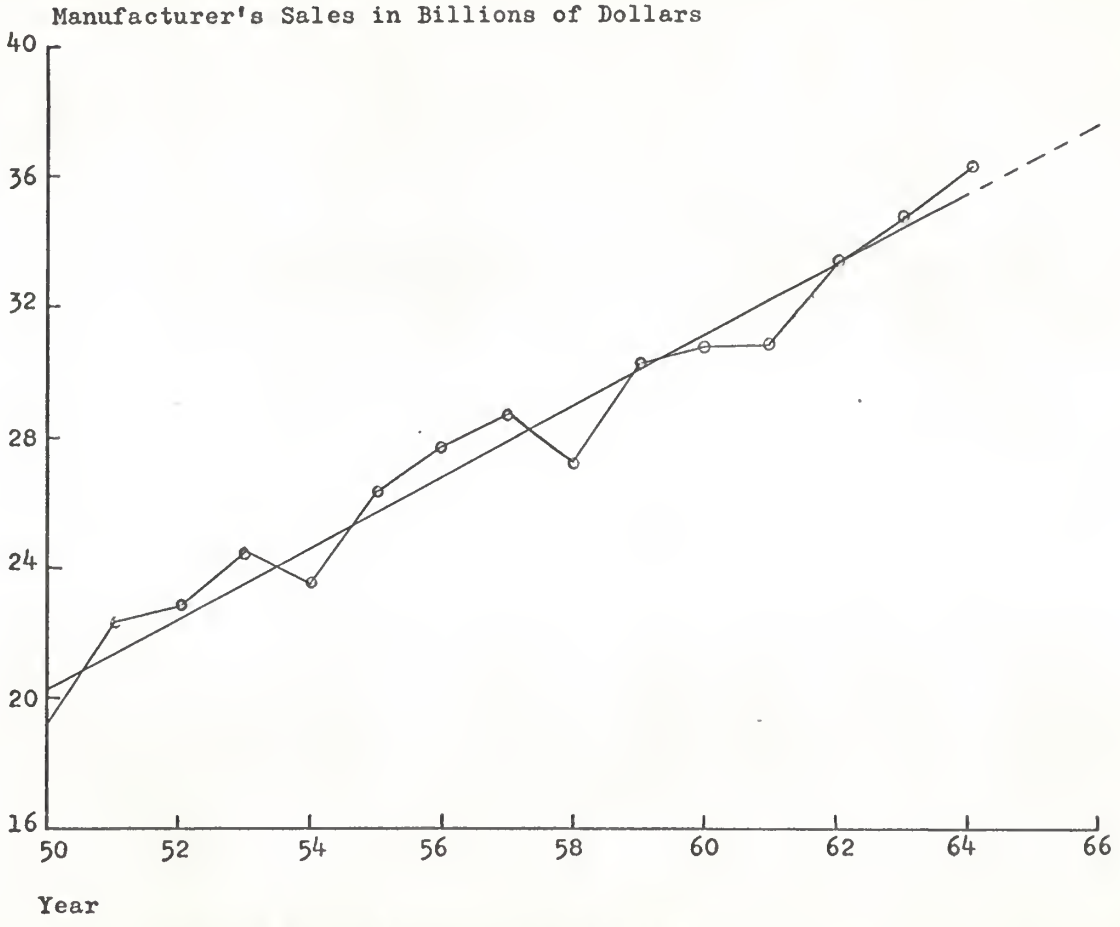
Wholesale Inventory

Wholesale inventory is a important indicator of general economic

[1] Monthly average for the year.

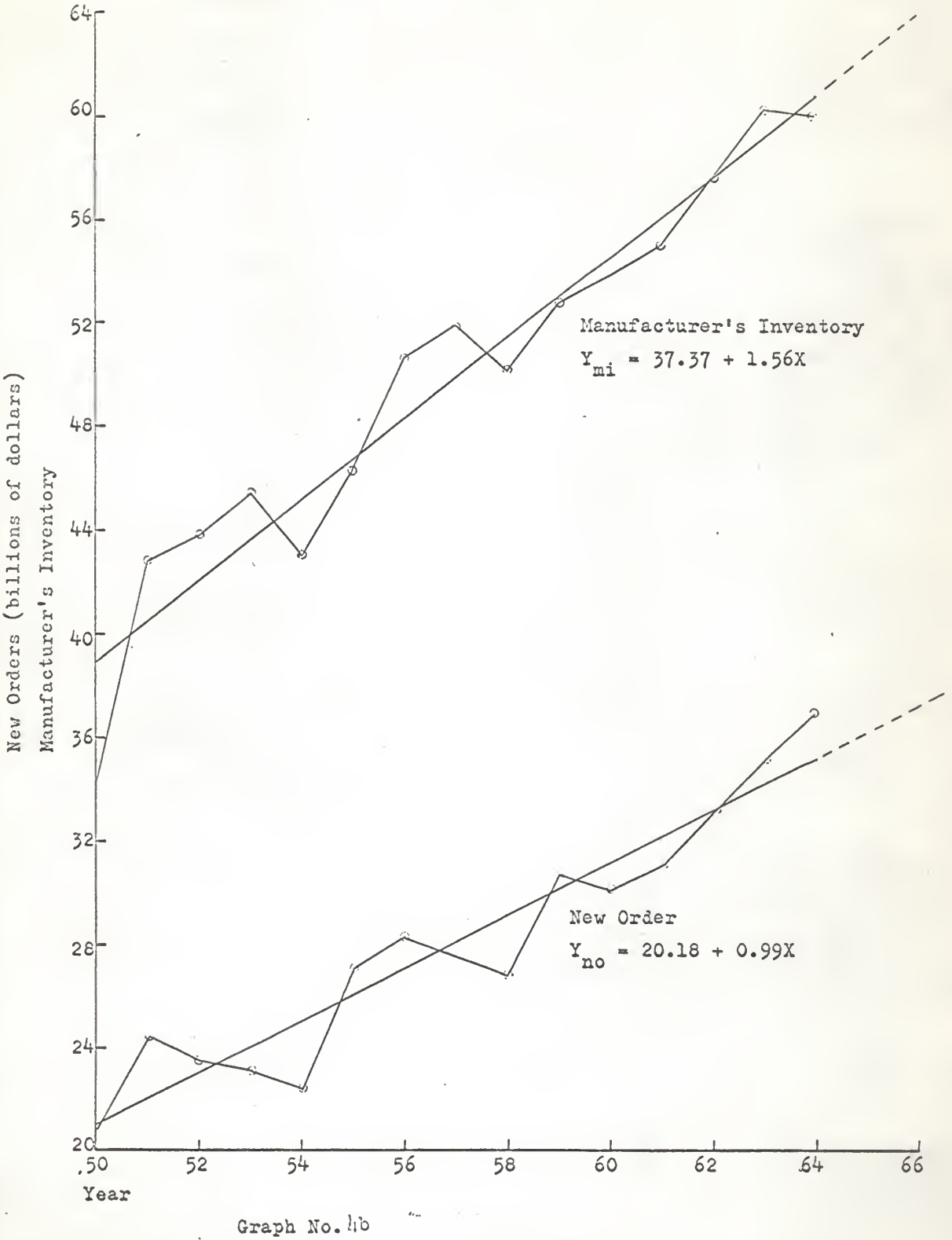
[2] Book value, end of period.

[3] Preliminary for the second quarter of 1964.



Graph No. 4a Manufacturer's Sales

$Y_{ms} = 19.29 + 1.05X$


64
60
56
52
48
44
40
36
32
28
24
20
New Orders (billions of dollars)
Manufacturer's Inventory
Manufacturer's Inventory
Y_{mi} = 37.37 + 1.56X
New Order
Y_{no} = 20.18 + 0.99X
.50
52
54
56
58
60
62
64
66
Year

Graph No. 4b

TABLE 5

RETAIL TRADE SALES AND INVENTORIES

Year	Retail Sales[1]	Calculated Trend	Retail Inventory[2]	Calculated Trend
	In Billions of Dollars			
1950	12.27	12.26	19.46	20.07
1951	13.05[3]	12.88	21.06	20.66
1952	13.53	13.50	21.03	21.25
1953	14.09	14.12	21.49	21.84
1954	14.10	14.74	20.93	22.43
1955	15.32	15.36	22.77	23.02
1956	15.81	15.98	23.43	23.52
1957	16.67	16.60	24.57	24.11
1958	16.70	17.22	24.29	24.70
1959	17.95	17.84	25.54	25.29
1960[5]	18.29	18.46	26.81	25.88
1961	18.23	19.08	26.24	26.47
1962	19.61	19.70	27.94	27.06
1963	20.53	20.32	28.69	27.65
1964[4]	21.44	20.94	28.99	28.24
1965		21.56		28.83
1966		22.18		29.42

Source: Department of Commerce and Board of Governers of Federal Reserve System.

conditions. If there is a big inventory of wholesale goods, it may become an alarming situation for the economy. Considering graph 6a, it appears that wholesale inventories were almost stationary during the

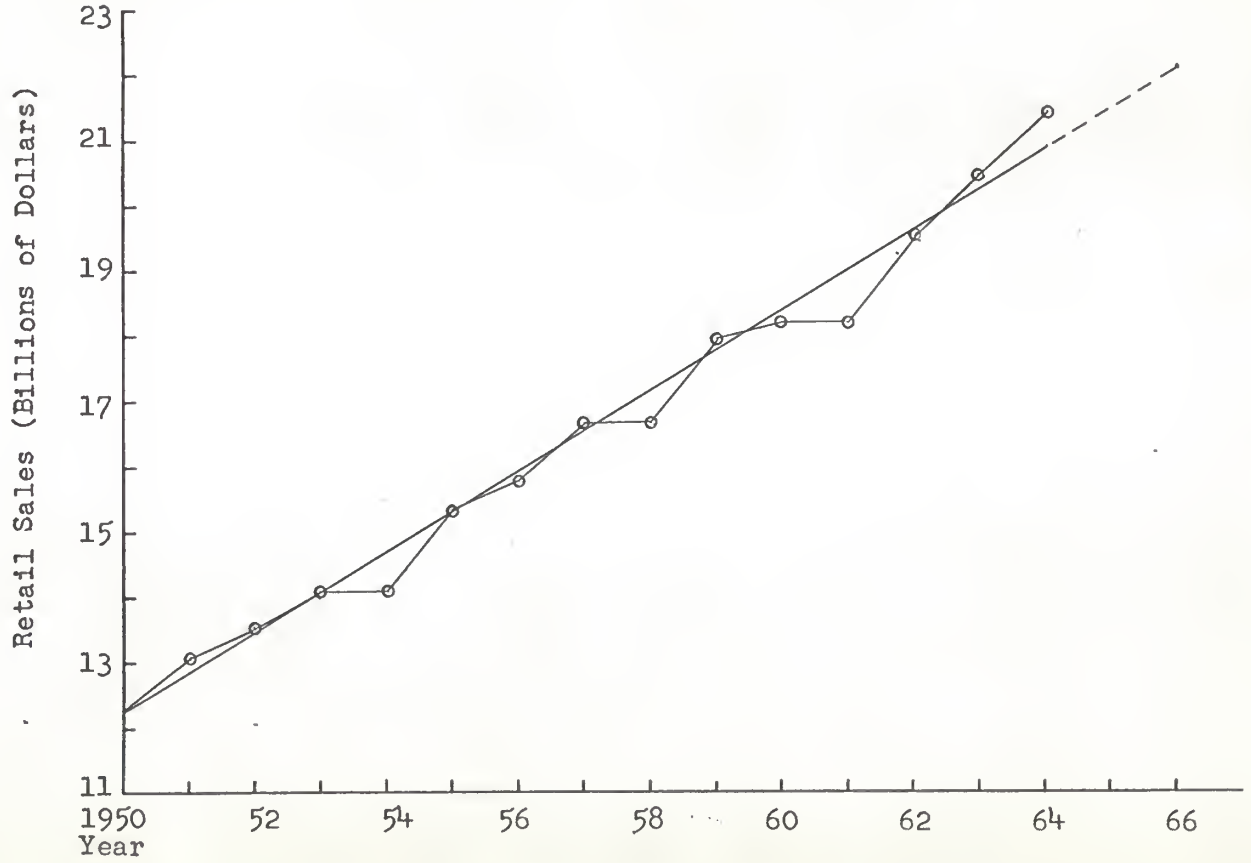
[1] Monthly average for year.

[2] Book value end of period.

[3] In 1951, a basic change in the method of estimating retail sales directly from sample data (rather than linked to a Census of Retail Trade). This new series begins with 1946.

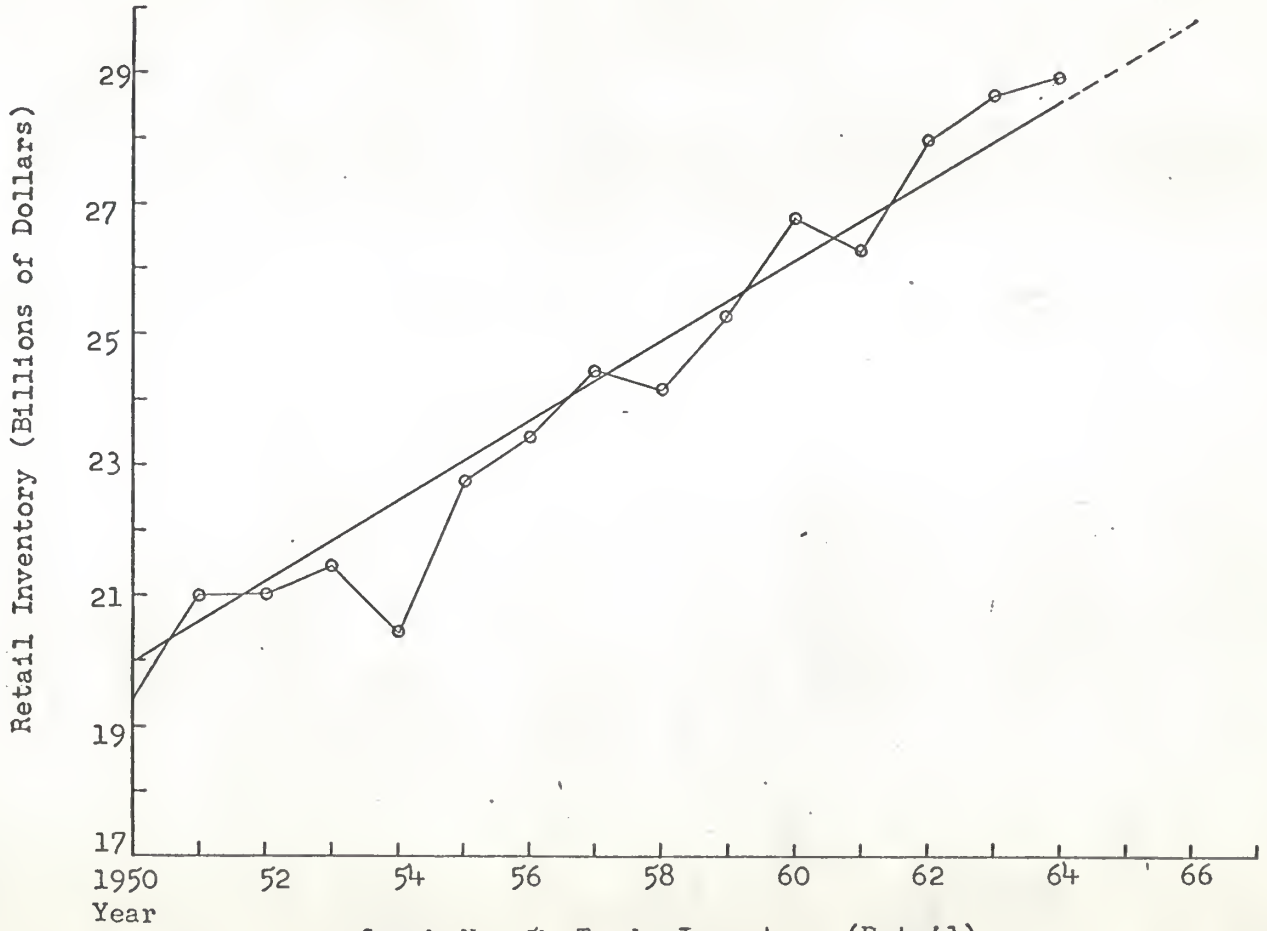
[4] Preliminary estimate, figures up to June 1964.

[5] Beginning January 1960 retail sales include data for Alaska and Hawaii.



Graph No. 5a Trade Sales (Retail)

$Y_{rs} = 11.64 + 0.62X$



Graph No. 5b Trade Inventory (Retail)

$Y_{ri} = 17.48 + 0.59X$

TABLE 6

WHOLESALE TRADE SALES AND INVENTORY

Year	Sales[1]	Calculated Trend	Inventory[2]	Calculated Trend
		In Billions of Dollars		
1950	8.42	8.93	9.12	9.32
1951	9.37	9.11	9.71	9.68
1952	9.56	9.29	10.01	10.04
1953	9.81	9.47	10.47	10.40
1954	9.73	9.65	10.39	10.76
1955	10.62	9.83	11.44	11.12
1956	9.69	10.01	11.97	11.48
1957	9.61	10.19	11.78	11.84
1958	9.43	10.39	11.71	12.20
1959	10.48	10.55	12.81	12.56
1960[3]	10.47	10.73	12.89	12.92
1961	10.64	10.91	13.13	13.23
1962	11.19	11.07	13.58	13.64
1963[4]	11.67	11.27	14.22	14.00
1964	12.14	11.45	14.29	14.36
1965		11.63		14.72
1966		11.81		15.08

Source: Department of Commerce and Board of Governers of the Federal Reserve System.

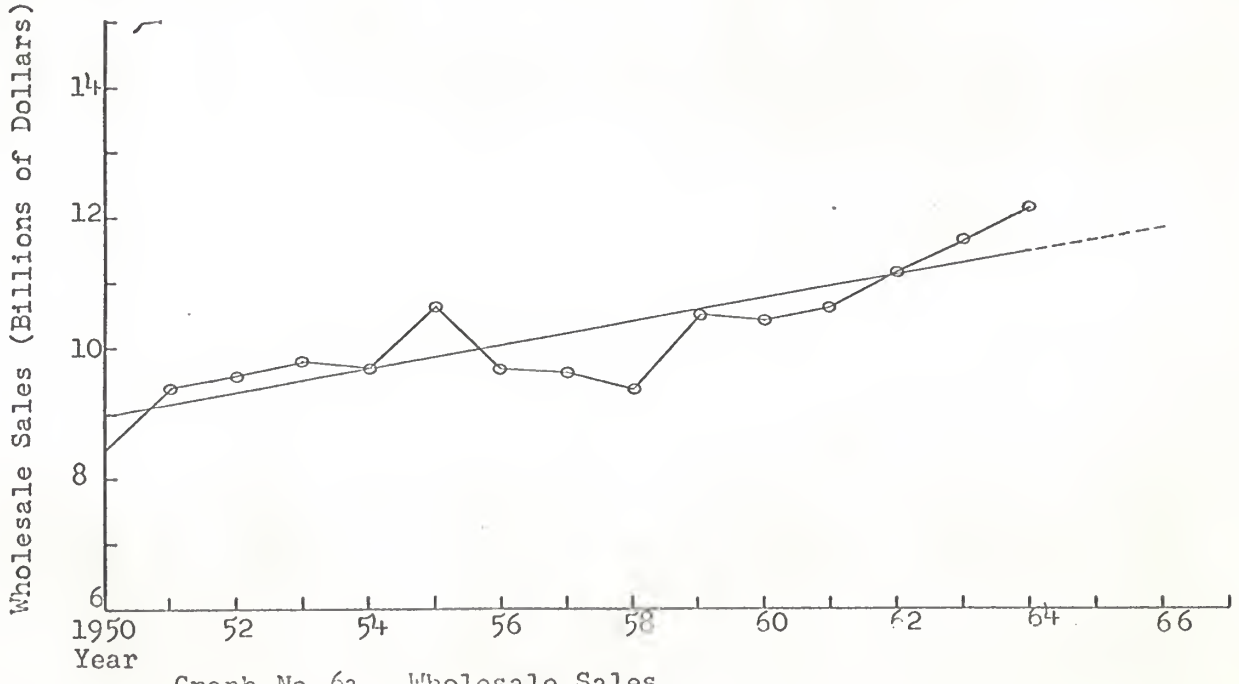
period of 1963 to 1964. It is likely that there might be some increase in the wholesale inventories in 1965. The trend line also predicts a rise in the wholesale inventories. This will depend in part upon the overall outlook for the year 1965.

[1] Monthly average for year.

[2] Book value end of period, seasonally adjusted.

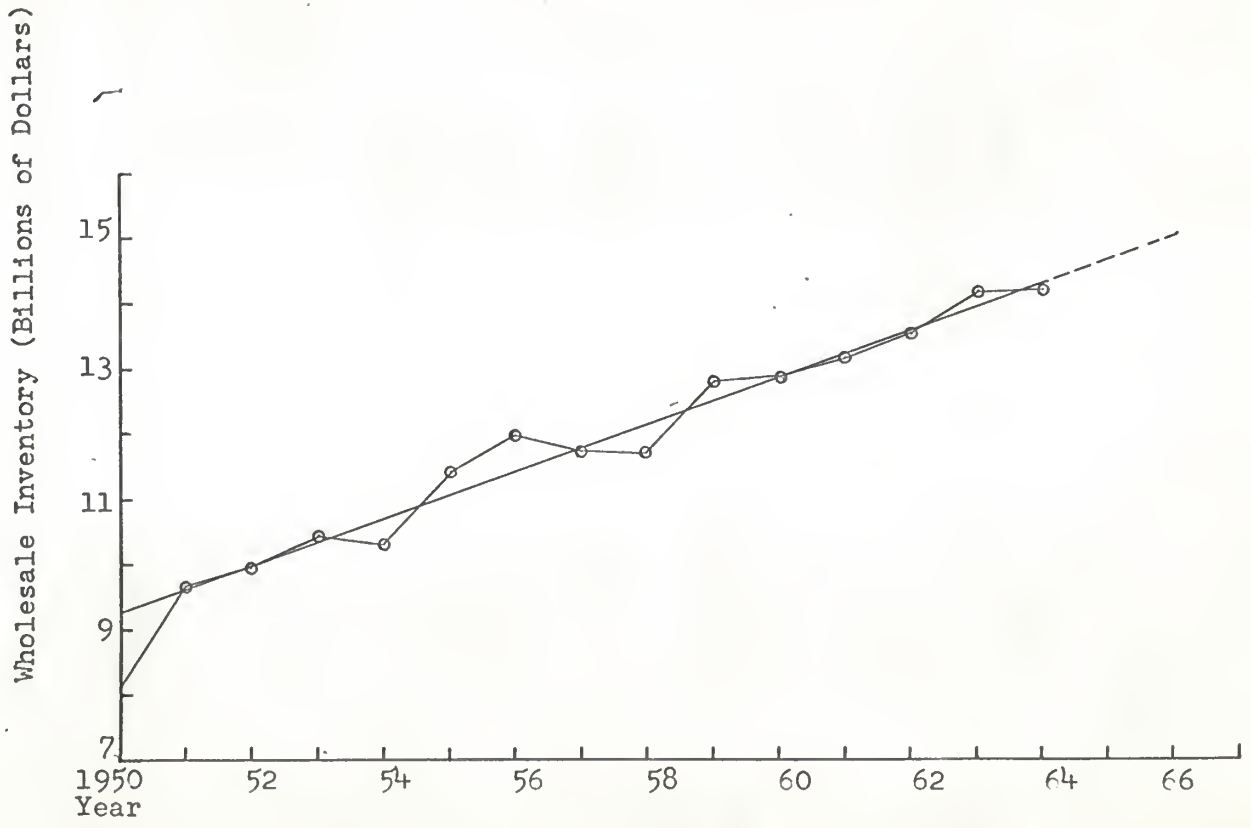
[3] Beginning with 1961 wholesale data include Hawaii and Alaska.

[4] Preliminary figures.



Graph No. 6a Wholesale Sales

$Y_{ws} = 8.75 + 0.18X$



Graph No. 6b

Wholesale Inventory

$Y_{wi} = 8.96 + 0.36X$

Inventory Development

Inventory accumulation was remarkably low during the first three quarters of 1964; during the third quarter it was the lowest since the recovery got under way (according to preliminary figures from Economic Indicators). It is expected that a speed-up will take place during the coming months. The latest survey of manufacturer's[1] plans suggests that the build-up will be some what more than the increase in sales. Lengthened delivery time has been experienced in some industries and inventory increases as a hedge are expected in response. Spiraling nonferrous metals prices may likewise touch off hedging. Steel consumers have announced that they intend to stock pile sixty day's supply of steel before May 1, the earliest date for a steel strike. The course of events will depend on whether an early settlement can be reached or whether a strike takes place. In either case a rundown of inventories will follow later in the year. For the year as a whole we expect some increase in inventory over the current year.[2]

Net Exports

During the first quarter of 1964, the average rate of net exports of goods and services was $7.7 billion as compared to the annual rate of $5.69 billion on 1963.[3] In the third quarter imports increased considerably more than did exports. Exports should increase, but prospects are less glowing in 1965 with some Western European Countries. Great Britain has already imposed an excise duty of fifteen per cent

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[1]Gerhard Colm and Carol Carson, op. cit., P. 11

[2]Gerhard Colm and Carol Carson, op. cit., P. 11

[3]Economic Indicators, Council of Economic Advisers, (Washington: U. S. Government Printing Office, November 1964), P. 24.

on all their imports.[1] This will limit the chances for improvement.

Government Sector

Federal

In recent years the U.S. budget has been increasing steadily. Besides this increase it has been having a deficit since year 1961 (Table 7). In the year 1964, the estimated deficit was ten billion dollar. The deficit for fiscal (1965) was estimated by the Budget Bureau at $6.3 billion (Table 7). But according to Time[2] magazine, it would be $8.2 billion.

Currently the question is what will be the administration's fiscal policy as expressed in the 1966 budget to be submitted in January. Before the election the President was insisting that the budget would be held below the magic figure of $100 billion, meaning that the rise from the level of current fiscal year should be no more than three billion dollar. Because of various built-in increases, and because there is small chance of another significant reduction in defense spending next year, this leaves little room for the new programs connected with President Johnson's concept of the Great Society.[3]

President Johnson has proposed a reduction in the excise duties. Such a reduction is proposed to give a fiscal stimulus to the economy. The proposed budget might be close to $100 billion. Revenue before cuts in excise taxes can be expected to rise to some $97 billion.[4] on the

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[1] "Britain," Time, Vol. 84:19, November 1964.

[2] "The Budget," Time, Vol. 85:5, January 1965, P. 198.

[3] "Budget for a Boom," Economist, Vol. 213:6325, November 1964, P. 693.

[4] Ibid.

TABLE 7

FEDERAL ADMINISTRATIVE BUDGET TOTAL AND PUBLIC DEBT

In millions of dollars, except per capita. For years ending June 30. Certain interfund transactions excluded from administrative budget receipts and expenditures.

Year	Receipts[1]	Expenditures	Surplus(+) or deficit(-)	Public Debt[2]	
				Total	Per Capita[3]
1960	77,763	76,539	+ 1,224	286,331	1,585
1961	77,659	81,515	- 3,856	288,971	1,573
1962	81,409	87,787	- 6,378	248,201	1,598
1963	86,376	92,642	- 6,266	305,860	1,615
1964*	88,400[4]	98,405[4]	-10,005[4]	311,800	1,623
1965*	91,200[4]	97,500	- 6,300[4]	317,000	1,625
1966*	94,400[4]	99,700	- 5,300[4]		

*Estimated figures.

Source: Executive office of President, Bureau of the Budget; Budget of U.S. Government, and unpublished data.

assumption of continued brisk growth in the economy.

The Council of Economic Advisers takes seriously the indication

[1]Gross receipts less refunds of receipts and transfers of tax receipts of the old-age and survivors insurance trust fund, the disability insurance trust fund, the railroad retirement account, the unemployment trust fund, and highway trust fund.

[2]Exclude guaranteed obligations. Change in public debt from year to year reflects not only the budget surplus as deficit but also changes in the government's cash on hand, and the use of corporate debt and investment transactions by certain government enterprises.

[3]Based on Bureau of Census estimated population as of July 1. Beginning 1959 includes Alaska and 1960 Hawaii.

[4]"The Budget," op. cit., P. 19 B.

that some of the upward thrust of the economy may taper off after mid-year; automobile output and house building should be at least on a plateau and capital spending by businessmen is likely to go up by well under ten per cent next year on the basis of early forecasts.[1] Thus the Council could well argue for a good dose of stimulus by way of lower excise taxes. But the President again will not want to estimate for a deficit as large as this year's six billion dollars.[2] Although it is unlikely that he may be hoping for a balanced budget.

State and Local

Expenditure on goods and services by state and local governments are likely to continue their long term rise with an increase of over five billion dollars.

1. The sources of funds are on a rising trend. Tax revenues in the year ending June 30, 1964 showed 8.1 per cent rise from the previous year and this should be equalled this current (1965) fiscal year both because of some increases in rates and because of the expanding income, sales, and property bases on which taxes are levied.

2. Borrowing was high in 1963 and the amount for 1964 promises to pass that level.

3. Federal grants, which during 1964 will pass the ten billion dollars annual rate, show a steadily increasing trend.[3]

Wage and Interest Rate Developments

As regards wages, the auto industry labor settlement has been

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[1] "Budget for a Boom," op. cit., p. 693.

[2] "Budget for a Boom," op. cit., P. 693

[3] Gerhard Colm and Carol Carson, op. cit., P. 13.

estimated as entailing upwards of 4.5 per cent increase in wages and benefits. This would raise wages considerably more than the 3.2 per cent implied in the Council of Economic Adviser's "guide post" based on the average annual increase in productivity. From the standpoint of adding current spendable income to auto workers' pocket books, the contracts were not as inflationary as they might first appear, because there is little actual wage increase during the first year and much of the increased benefits will go into welfare and pension funds. It could be assumed that this might lead to some increase in prices.[1]

Some businessmen and economists feel that the new contract in the auto industry may set a pattern for the forthcoming negotiations between the labor unions and management in other industries. This can not be taken for granted for other industries because labor contracts are guided by the profit structure of the particular industry.

But it is quite possible that certain industries might face price increases. So it is expected that prices in 1965 will increase some what faster than the approximately 1.8 per cent for 1964. This does not mean that there will be inflation. Inflation would also depend upon the monetary and fiscal policy followed by the federal government. Fiscal policy has already been discussed in the earlier part of the report.

In the realm of monetary policy conditions have been mixed and will undoubtedly continue so. This is because the various forces at work pull money rates in different directions, making federal reserve policy unusually difficult. To protect the U.S. balance of payments

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[1]Gerhard Colm and Carol Carson, op. cit., p. 14.

was the primary reason for the late November 1964 increase in the federal reserve discount rate from 3½ to four per cent, but there was also some opinion that restraint on credit was advisable to prevent a super-boom. In otherwords cyclical expansion might be threatening to reach the flash point. There are still mild pressures toward higher interest rates but, at the same time, the long term forces are making for lower rates. Short term rates are comparatively high.[1]

Gross National Product and Its Outlook for 1965

Now that the factors which influence general economic conditions have been examined, we will describe the outlook for gross national product for 1965.

During the period from 1950 to 1964 gross national product rose by 114 per cent. During this period the U.S. economy passed through several business cycles. It has seen booms and recessions and also wars. But during the current recovery phase, starting early in 1961, up to 1964 (second quarter figure of $608.5 billion) the rise in GNP has been of the order of seventeen per cent. According to the latest estimate by the Council of Economic Advisers, GNP reached a figure of $623 billion in 1964.[2] This is an increase of nearly fourty billion dollars over 1963 and is due in part to the tax cut which has played an important role in consumer purchases and capital spending of corporations in 1964.

According to trend analysis the GNP will rise in 1965. The actual rise is difficult to predict by trend analysis because of the

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[1]John W. Harriman, "Economic Outlook - 1965," The Exchange, Vol. 26:1, January 1965, P. 4.

[2]"Economic Strength has Broad Base," Iron Age, Vol. 195:1, January 1965, P. 23.

TABLE 8

GROSS NATIONAL PRODUCT

Year	Gross National Product	Calculated Gross National product from trend line equation.
	In Billions of Dollars	
1950	284.6	287.88
1951	329.0	310.03
1952	347.0	332.18
1953	365.4	354.33
1954	363.1	376.48
1955	397.5	398.63
1956	419.2	420.78
1957	442.8	442.93
1958	444.5	465.08
1959	482.7	487.23
1960	502.6	509.38
1961	518.2	531.53
1962	554.9	553.68
1963	583.9	575.83
1964*	628.4	597.98
1965		620.13
1966		642.28

*Preliminary figures for the third quarter of 1964.

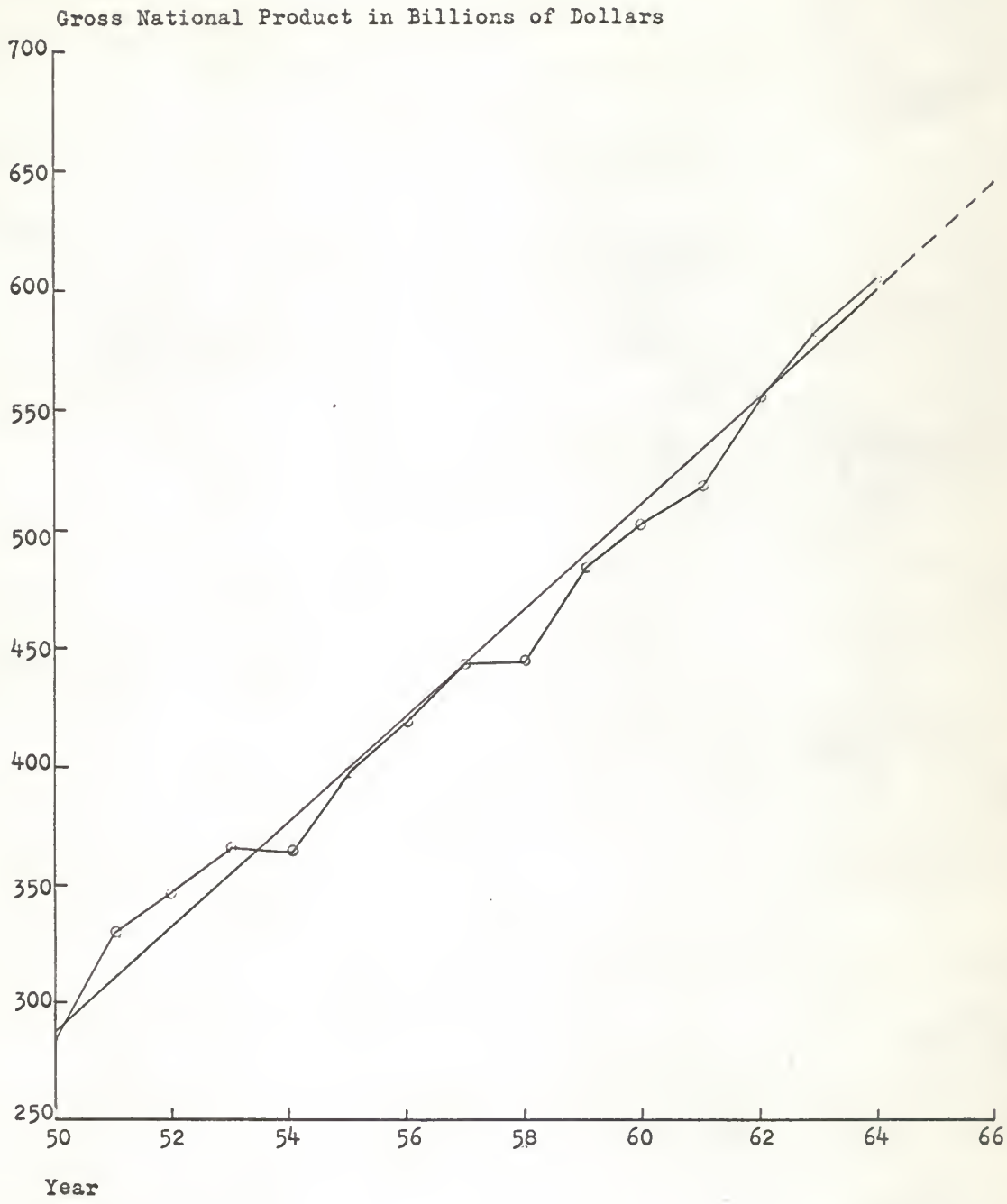
Note: Data for Alaska and Hawaii included beginning 1960.

Source: Department of Commerce.

complexities of the economic system, but it is very likely that there will be a more significant rise in GNP than indicated in the trend in table 8 and graph 8a.

The economic catch-all will grow five per cent over 1964. Corporate earnings will gain about the same.[1] Considering such a rise

[1]Ibid., P. 23.



Graph No. 7 Gross National Product and National Income

$Y_{gnp} = 269.00 + 21.7X$

it is likely that gross national product at the end of 1965 will reach a figure of $652 to $655 billion. This rise is expected provided there is another tax cut.

Currently there is fear of a strike in the steel industry. This fear is also complicated by the power struggle in the steel workers' union. Due to this it is likely that most steel consuming industries will be trying to stock steel as a possible hedge for strike. So the production in these industries during the first half would be in part to prepare for the strike. Later, in the second half, there is likely to be a little slow down in these industries. Due to all these reasons GNP is expected to rise only by thirty to thirtytwo billion dollars from 1964 GNP.

Summing up this analysis the conclusion is reached that the increase in national income and production will almost certainly continue into the first half of 1965. The overall outlook for 1965 also looks good, although the second half may show a levelling off.

CHAPTER III

ECONOMIC OUTLOOK FOR THE STEEL CONSUMING INDUSTRIES

Before discussing the outlook for the steel industry a look will be taken at the industries which consume the major portion of steel output.

According to the data prepared by the American Iron and Steel Institute steel shipments go to twentyone different sectors. (Appendix A, P. 6 and 7). But eighty per cent of the steel shipments go to eight major industries (Table 9). The automotive industry leads in the consumption of steel. It is followed by distributing centers and the construction industry.

A more detailed look at some of these industries will be undertaken.

Automotive Industry

The automotive industry is the biggest consumer of steel. As shown in table 9 it receives twenty to twenty-five per cent of the steel shipments. The outlook for the automotive industry is important to the steel industry. Indeed the automotive and the steel industries have a significant relationship to the entire economy.

Now looking into the graphs of weekly production of cars and trucks, (Table 10 and Graph 8) and steel production (Table 14, Graph 11) it can be observed that both have followed the same pattern during the period 1950 to 1964. Steel production took a down turn in 1952 and as did car production. Both steel production and car production

TABLE 9

PERCENTAGE OF SHIPMENTS OF STEEL PRODUCTS BY MARKET CLASSIFICATION, INCLUDES ALL GRADES INCLUDING CARBON, ALLOY AND STAINLESS

Where the steel goes	1950	1954	1955	1958	1961	1963	1964[1]
Automobile	20.8	19.5	23.1	17.6	19.1	22.4	23.5
Warehouses and Distributors	19.2	19.8	19.4	19.0	18.7	17.4	16.4
Construction Industry	12.3	14.2	11.9	15.2	14.0	13.3	11.9
Containers	8.4	9.7	8.3	11.4	10.0	8.6	8.7
Machinery and Industrial equipment	5.0	5.8	5.8	5.5	5.7	5.9	6.1
Steel for converters	5.6	4.0	4.6	5.0	3.6	3.5	3.6
Contractor's product	4.4	4.9	4.9	6.0	5.8	5.7	5.1
Rail transportation	6.2	4.1	4.3	2.6	2.4	3.4	4.4
Total of the above group	81.9	82.0	82.3	82.3	79.3	80.1	79.7
All other	19.1	18.0	17.7	17.7	20.7	19.9	20.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: American Iron and Steel Institute.

had their booms in 1955. (Table 14, and Graph 11, Table 10, and Graph 8). The year 1955 was the record breaking year both for steel and auto production. That record of 1955 has only recently been surpassed by 1964.

The automotive industry passed its record in the year 1963. It only barely missed the eight million car year. This boom in the auto

[1]Figures for 1964 are first quarter figures.

TABLE 10

WEEKLY PRODUCTION OF CARS AND TRUCKS

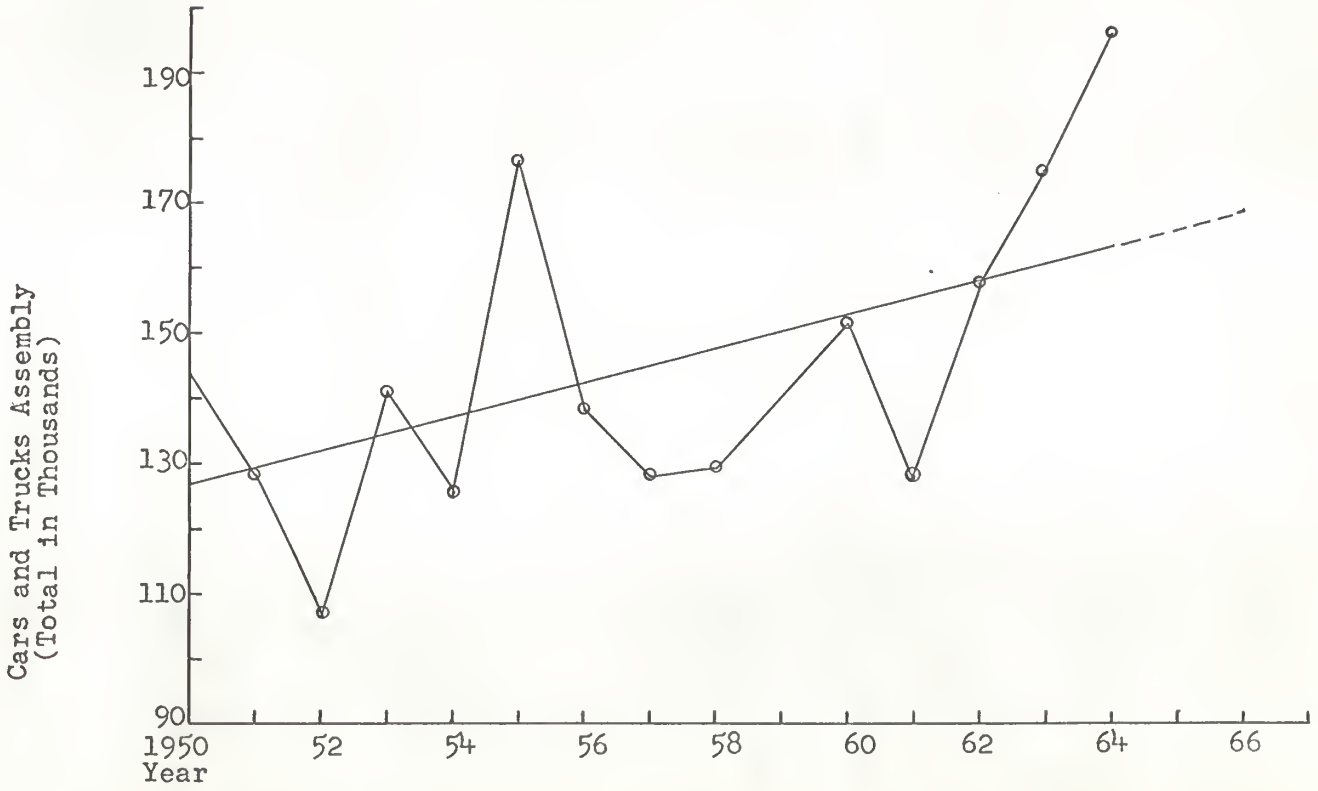
Year	Assembly of Cars and Trucks in 000's	Calculated Trend
1950	154.2	127.0
1951	129.8	129.6
1952	106.8	132.2
1953	141.1	134.8
1954	125.6	137.4
1955	176.7	140.0
1956	132.8	142.6
1957	138.6	145.2
1958	98.4	147.8
1959	129.5	150.4
1960	151.8	153.0
1961	127.8	155.6
1962	157.5	158.2
1963	175.0	161.8
1964*	196.6	164.4
1965		168.0
1966		171.6

*Preliminary figure for second quarter of 1964.

Source: American Iron and Steel Institute, Department of Interior, Edison Electric Institute and Ward's Automotive Report.

industry continued through 1964 and it appeared that 1964 might become the eight million car year. But in the third and the fourth quarter of 1964 (when new 1965 models were coming out) the General Motors Corporation and the Ford Motor Company were shut down by a strike. The General Motors strike lasted for more than five weeks. Production was reduced to half. The same was true of the Ford Motor Company. But thanks to successful negotiation between labor and management, the strike has ended and the normal production has been resumed.

At present production is going at a faster rate than normal



Graph No. 8 Weekly Production of Cars and Trucks

$Y_{ca} = 136.56 + 0.78X$

production. The auto industry has recently been operating on a six day a week schedule. In fact, in the first week of December auto production was 220,000 cars. This is estimated to be at a rate of almost eleven million cars a year.[1] But this rate would not be likely to continue for a long time. In a week or two it can be expected to come down to perhaps 180,000 cars a week.

But such a rate indicates another good year for the auto industry in 1965. The President of the Ford Motor Company has remarked that now the auto industry should think in terms of eight million cars a year being a normal year. This year has been the fourth successive good year for auto sales. This trend seems likely to continue through the first half of 1965. Most of the business forecasts predict 1965 to be a healthy year for auto production. Though it is likely that towards the end of the first half and the beginning of the second half auto production will decline.

The trend line in graph 8 also shows an increase, but the projection is much less than the actual figures of 1965 are likely to be. As General Motors Corporation Chairman, Frederick G. Donner states:

> "There is every reason to anticipate that 1965 will be another good year for the automobile industry. Prospects are that vehicle sales in the U.S. could well exceed the long term estimate of 7.8 million passenger cars and 1.4 million trucks and approximate the levels reached in 1964 (9.4 million cars and trucks)."[2]

The president of the Ford Company and the president of the Chrysler Corporation also estimate that the 1965 auto production will

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[1] "Business Outlook," op. cit., No. 1841, P. 19.

[2] "Steel's Forecast for 1965," Steel, Vol. 156:1, June 1965, P. 43.

be over eight million. This gives an optimistic picture for the auto industry.

Expenditure on New Plant and Equipment

The outlook for new plant and equipment is an important factor for the steel industry as well as for the total economy. Here will be examined the performance of new plant and equipment expenditure from 1950-1963. There has been a tremendous rise in the expenditure for new plant and equipment since 1950. During the period of 1950 to 1963 there has been a rise in expenditure of 107.2 per cent on new plant and equipment. Such a rise over the period of fourteen years is very great. During this period the U.S. economy has passed through several phases of recessions and booms as can be observed from the graphs (Table 11, Graph 9). The expenditure for new plant and equipment shows a down turn in the years 1954 and 1958. These were years when the U.S. economy was suffering from recession. The present recovery phase started early in the year 1961. So far the rise has been highly encouraging. Since 1961, the expenditure on plant and equipment has risen by 25.1 per cent. For this period a less than four years the average annual rate of increase is 6.25 per cent. This suggests a good outlook for the coming year also. The graph 9 also projects an increasing trend.

At the end of 1963, the expenditure on new plant and equipment was at an annual rate of $41.20 billion. And at the end of second quarter of 1964 it was at an annual rate of $43.50 billion. The rise was around seven per cent over this period.[1] In August, 1964 a survey

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[1]Economic Indicators, Securities and Exchange Commission and Department of Commerce, (Washington: Government Printing Office).

TABLE 11

EXPENDITURE FOR NEW PLANT AND EQUIPMENT

Year	Total Expenditure	Calculated Trend
	In Billions of Dollars	
1950	20.60	28.42
1951	25.64	24.64
1952	26.49	25.86
1953	28.32	27.08
1954	26.83	28.30
1955	28.76	29.52
1956	35.08	30.74
1957	36.96	31.96
1958	30.53	33.18
1959	32.54	34.40
1960	35.68	35.62
1961	34.37	36.84
1962	37.31	38.06
1963	39.22	39.28
1964*	42.70	40.50
1965		41.73
1966		42.94

*Estimate based on anticipated capital expenditure and as reported by business on February, 1964. Includes adjustments when necessary for systematic tendencies as in anticipatory data.

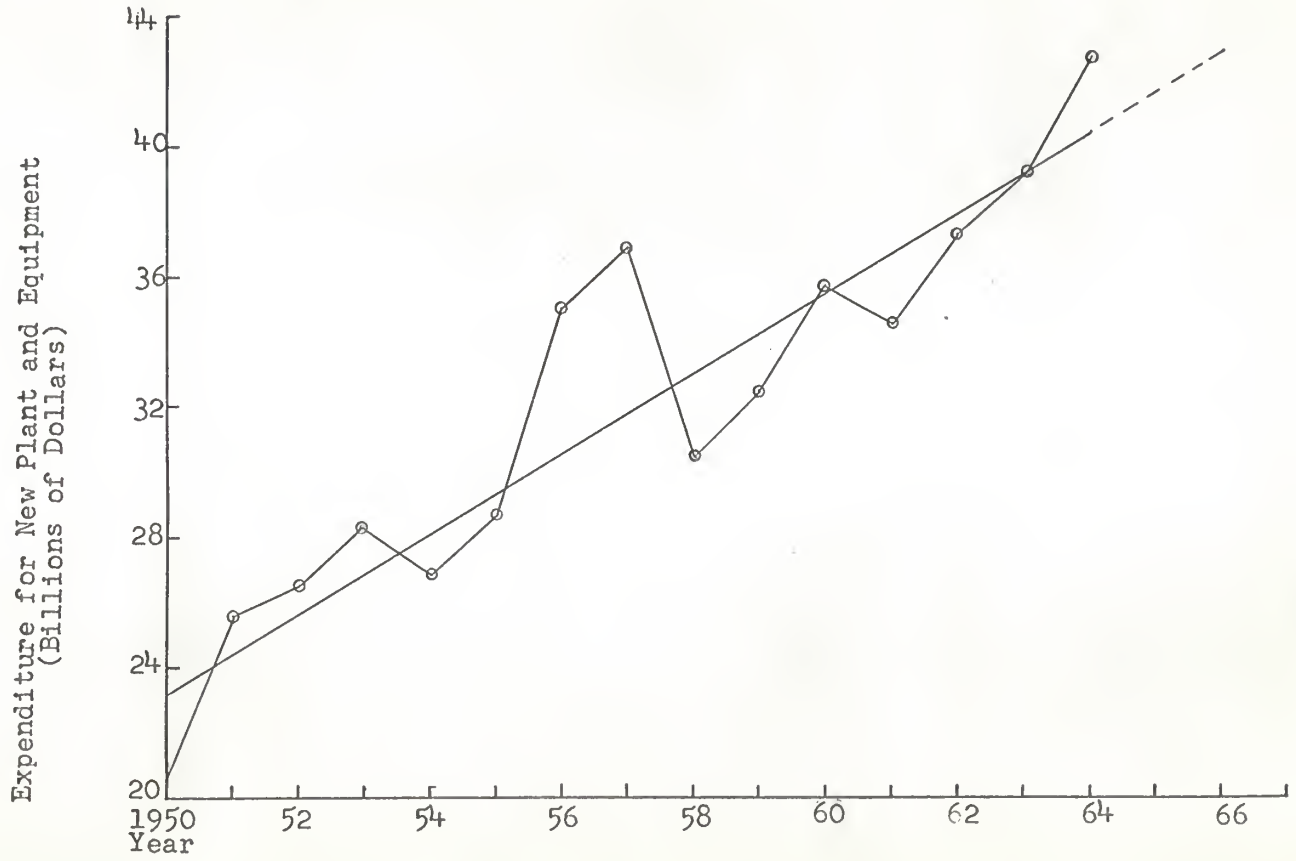
Source: Securities and Exchange Commission and Department of Commerce.

of plant and equipment expenditure was conducted and on that basis it was estimated that the expenditure on new plant and equipment will be $46.15 billion for the year 1964.[1]

Business Week[2] states that the New Year's resolutions for capital spending are already forming up.

[1]Economic Indicators, Expenditure for New Plant and Equipment, (Washington: Government Printing Office, November 1964), P. 9.

[2]"Business Outlook," op. cit., No. 1841, P. 19.



Graph No. 9 Expenditure for New Plant and Equipment

$Y_{pe} = 23.26 + 1.23X$

A Commerce Department Securities and Exchange Commission Survey, released this week(December 12, 1964) indicates that industry now plans to invest twelve per cent more for new plant and equipment in the first half of 1965 than it did in the first six months of 1964. The implication is clear: for 1965 as a whole, capital spending is almost certain to grow by more than the five per cent reported in last month's McGraw Hill Survey.[1]

Further the Federal Reserve Bank of Cleveland stated:

> It is generally acknowledged that capital spending plays an important role in determining both the strength and the duration of the expansionary phase of the business cycle. Moreover the rate of economic growth that the nation experiences is in large part a function of the rate of private investment.[2]

Considering all this it is expected that the expenditure on new plant and equipment during the year 1965 will increase around five per cent to six per cent over 1964.

Construction Industry and Its Outlook

The construction industry is also an important industry from the point of view both of the general economy and the steel industry. These days the construction industry uses heavy equipment and machinery. This equipment and machinery has a direct relation with steel production. Besides this, reinforced concrete structures known as steel frame structures use a lot of steel. Concrete also competes with steel, because in construction of bridges prestressed concrete pillars are being used instead of steel. The construction industry is important because of the fact that it has become a $65 billion industry. It contributes a sub-

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[1] "Business Spending twelve per cent more," Business Week, No. 1841, December 1964, P. 25.

[2] "Business Outlook," op. cit., No. 1841, P. 19.

TABLE 12

NEW CONSTRUCTION

Year	New Construction	Calculated Trend
	In Billions of Dollars	
1950	29.9	29.91
1951	32.7	32.47
1952	34.7	35.03
1953	37.0	37.59
1954	39.2	40.15
1955	44.2	42.71
1956	45.8	45.27
1957	47.8	47.83
1958	49.0	50.39
1959	55.4	52.95
1960	55.6	55.51
1961	57.4	58.07
1962	59.0	60.83
1963	62.8	63.19
1964*	67.0	65.75
1965		67.31
1966		70.88

*Preliminary estimate.

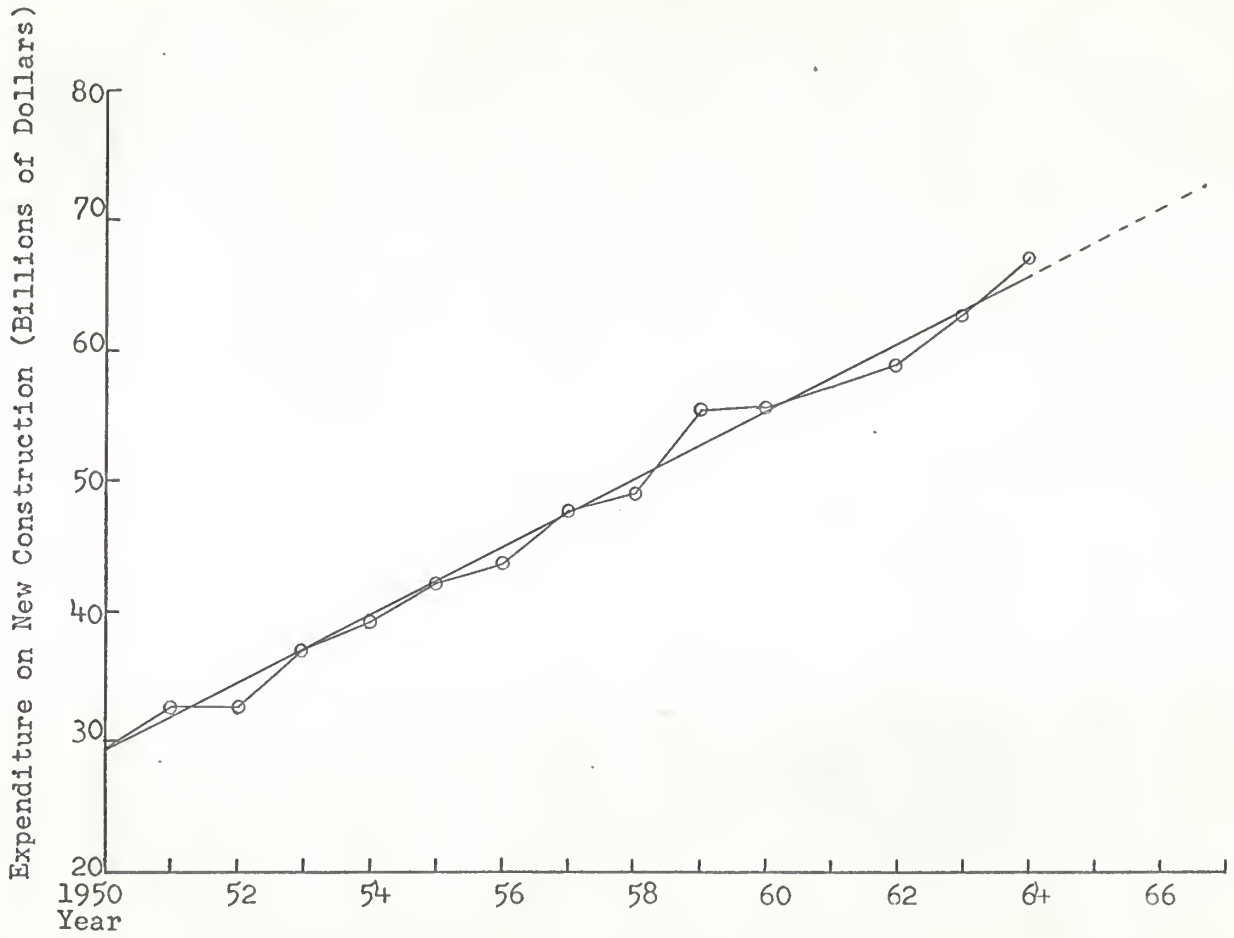
Note: Data for Alaska and Hawaii included beginning January 1959.

Sources: Department of Commerce and F. W. Dodge Corporation.

stantial share to the gross national product.

The growth of the construction industry through the last fifteen years has been almost 124 per cent as shown in table 12. This is a tremendous increase.

The construction industry was also hit by the recessions and booms in the U.S. economy during those years. For example during the recession of 1958, the growth of the construction industry between



Graph No. 10 New Construction

$Y_{nc} = 27.35 + 2.56X$

1956 and 1958 slowed to seven per cent (Table 12 and Graph 10). At the end of 1960, it picked up its growth rate again and during the period of recovery from 1961 to 1964 (first quarter) its growth has been of the order of 16.5 per cent.

During the year 1964, new construction has shown a good rate of increase although in October 1964 it has slackened somewhat, especially in residential construction. Industrial construction has been continued at a high rate, while residential construction dropped from an annual rate of $21.0 billion to $19.5 billion from January, 1964 to October, 1964.[1]

According to Business Week industrial construction in November, the latest Census Bureau estimates indicate, was running at an annual rate of $3,655 million having linked $100 million over the October rate and thirteen per cent in a year.[2] While commercial construction is at an annual rate of $2,556 million, farm construction at an annual rate $1,226 million, public utilities at an annual rate of $4,969 million, while the total public construction is at an annual rate of $20,155 million.[3]

> Heavy construction contractors also have an optimistic outlook. They have reasons to be thankful as they contemplate the amount of work they put under contract in the first nine months of this year. On the books are nearly twenty billion dollars of new construction work. This is twelve per cent greater than a year ago and a new high. It covers over 30,000 projects, eleven per cent more than a year ago. In this, industrial construction

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[1] "New Construction," Economic Indicators, (Washington: Government Printing Office, November 1964), P. 19.

[2] "Business Outlook," op. cit., P. 20.

[3] "Construction and Real Estate," Survey of Current Business, Vol. 145:1, January 1965, P. 5-9.

stands out at the top.[1]

Although residential construction has shown a drop, there is considerable conjecture that 1965 will show little change in the volume of residential construction from 1964. Some decline in total number of units could be balanced by greater expenditure per unit as the pace of 1- and 2- family homes picks up, as appears likely.

> The severity and duration of a down turn would be limited by several factors. Mortgage money is readily available and the continuing influx of savings into mortgage institutions acts to support this trend of fairly easy terms. The Federal Housing Act of 1964 broadens federal financing assistance to home buyers, provides help for housing renewal, and eases restriction on private lending, such as allowing banks to lend for longer periods.[2]

Over the longer term, increasing numbers of people will soon be attaining marriage age as the "baby bulge" begins to reach late teens and twenties; this should give a boost to apartments in particular.[3]

Industrial construction during 1964 made a good performance and it promises to continue to do so in 1955. This could be believed from what George A. Christie, chief economist for F. W. Dodge Corporation noted from the contract award promise for future construction.

> October contract totals confirmed the fact that construction markets have been strengthening a bit nonresidential building, paced by another heavy spurt in contracts for industrial plants during October, provided most of the months life.[4]

Nonresidential work awarded in October, Dodge reported, ran seven per cent ahead of the year before. Included in that was a 78

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[1]"Record $20 billion worth of Contracts in Nine Months," Engineering-New Record, Vol. 173:22, November 1964, P. 20.

[2]Gerhard Colm and Carol Carson, op. cit.

[3]Gerhard Colm and Carol Carson, op. cit.

[4]"Business Outlook," op. cit., p. 20

per cent jump in lettings for manufacturing structures.[1]

The graph 10 also shows a trend towards an increase in the construction industry. Considering all these factors it is expected that construction expenditure in the year 1965 will be around sixty eight to seventy billion dollars.

Rail Transportation

In the late 1940's rail transportation used to be an important industry as far as steel shipments were concerned. During that period it used to get seven to eight per cent of total shipments. But in the 1950's it had to face keen competition from highway transport. During this period steel shipments to the rail transportation industry fell to two to four per cent of the total shipments. But by 1963, it has apparently adjusted itself to the competition. Both in 1963 and 1964, it had a large amount of capital expenditure on plant and equipment and modernization. It also plans to spend a great deal in 1965 for plant and equipment.

In 1963, the industry topped the billion dollar mark in capital outlays for the first time in a half decade. This year capital spending seems headed to a peak above $1.4 billion the highest total since the early 1950's. Next year will see expenditures in ten figures again, perhaps not matching 1964's record but still well above the magic one followed by nine zeroes.[2]

During the next year several railroads are expected to get

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[1]"Business Outlook," op. cit., P. 20.

[2]"Another Billion + Year," Railway Age, Vol. 157:14, October 1964, P. 33.

permission from the Interstate Commerce Commission for mergers. Secondly, the general level of the nation's economy is expected by most observers to remain high. Third, is the industry's hope for 1965 gains in car loadings, ton miles, net income, and in the total share of inter-city freight business going by rail.

At the annual meeting of the Railway Progress Institute, members have predicted an optimistic year for the industry in 1965. According to them, there will be a strong, steady growth of freight traffic, with a prediction running as high as a four per cent increase in ton miles. Capital expenditure are expected to be around $1.4 billion.[1]

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[1]"R.P.I. Members are Given Crystal Ball View of 1965," Railway Age, Vol. 157:21, November 1964, P. 86.

CHAPTER IV

OUTLOOK FOR THE U.S. STEEL INDUSTRY FOR YEAR 1965

Steel Capacity and Output in Recent Years

The outlook for general economic conditions and for the steel consuming industries have been examined. Now the outlook for the steel industry itself will be forecasted. First, the performance of the steel industry since the year 1950 will be examined.

The steel industry is a basic industry for the U.S. economy. Its importance is more in case of an industrially advanced economy. Especially in case of United States, the steel industry plays an important role.

In the year 1950, the total production of steel ingot was about 96.8 million tons (Table 13). By the year 1963, it had risen to 109.3 million tons of steel ingots. So the rate of increase was about 12.9 per cent over this period. But this increase over the period of fifteen years does not show the total picture of the steel industry. During this period the steel industry has been much affected by both recession and boom. It also had to face a 120 day strike. In the year 1955, steel production was 117 million tons while in the year 1958, it dropped to eighty five million tons. In the year 1958, it had to face a strike. But since the year 1961, when a recovery phase of the U.S. economy started, the steel industry has done well. The rate of increase in steel production from the year 1961 to 1963 has been about 11.5 per cent.

TABLE 13

ANNUAL STEEL CAPACITY AND PRODUCTION OF U.S.A.

Year	Capacity in Million Tons	Production in Million Tons	Percentage Capacity
1950	99.4	96.8	96.9
1951	104.2	105.2	100.9
1952	108.6	93.2	85.8
1953	117.5	111.6	94.9
1954	124.3	88.3	71.0
1955	125.8	117.0	93.0
1956	128.4	115.2	89.8
1957	133.5	112.7	84.5
1958	140.7	85.3	60.6
1959	147.6	93.4	63.3
1960	148.6	99.3	66.8
1961	N.A.	98.0	N.A.
1962	N.A.	98.3	N.A.
1963	N.A.	109.3	N.A.

These figures have been rounded to the closest decimal.

Source: American Iron and Steel Institute.

The current year (1964) in the steel industry has been good. According to Business Week[1] production of steel in the month of December 1964 was at the annual rate of 136 million tons. According to preliminary estimates the nation's ingot production for the year 1964 is about 127 million tons.[2] This figure would be a record. So according to this estimate, the production of steel has risen by 15.3 per cent over 1963 production.

[1]"Business Outlook," op. cit., No. 1840, P. 20.

[2]"Demand Strains Finishing Capacity," Steel, Vol. 156:1, January 1965, P. 193.

TABLE 14

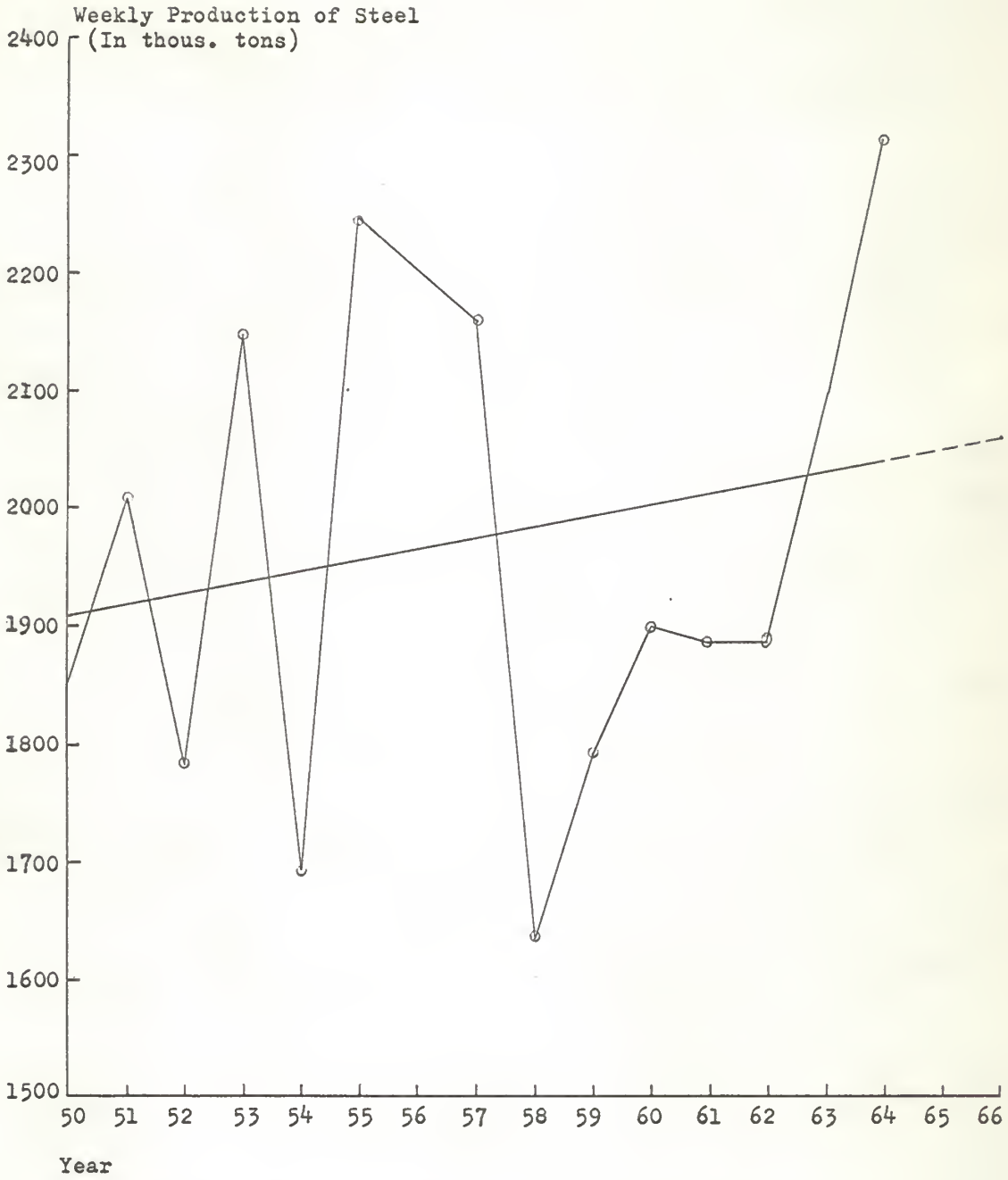
WEEKLY INDICATOR OF STEEL PRODUCTION

Year	Steel Produced in 000's tons	Calculated Trend	Index of Steel Production 1957-59=100	Calculated Trend
1950	1,857	1910.42	99.7	102.6
1951	2,016	1919.84	108.3	103.1
1952	1,782	1929.26	95.7	103.6
1953	2,142	1938.68	114.9	104.1
1954	1,694	1948.10	90.9	104.6
1955	2,245	1957.52	120.5	105.1
1956	2,204	1968.94	118.3	105.6
1957	2,162	1978.36	116.0	106.1
1958	1,635	1985.98	87.8	106.6
1959	1,792	1995.20	96.2	107.1
1960	1,894	2004.62	101.9	107.6
1961	1,880	2014.04	100.9	108.1
1962	1,886	2023.40	101.2	108.6
1963	2,096	2032.88	112.5	109.1
1964*	2,365	2042.30	126.9	109.6
1965		2051.72		110.1
1966		2061.14		110.6

*Preliminary estimate

Source: American Iron and Steel Institute, Department of the Interior, Edison Electric Institute and Ward's Automotive Report.

Such a high figure of steel production has been possible due to the general health of the U.S. economy. All steel consuming industries have been in operation at peak production levels. For example the automobile industry, which receives twenty three to twenty five per cent of steel shipments, had a record year. Similarly the container industry, which consumes about eight to ten per cent of steel shipments, has been doing very well. Besides that, due to the advancement of technology much better types of cans are produced, which increases the usage of



Graph No. 11 Weekly Indicator of Steel Production

$Y_{sp} = 1901 + 9.42X$

cans.

During the last three years, there has been a great deal of capital expenditure for the expansion of capacity by improved methods of production. More companies have been planning expansion as compared to previous years. Capital expenditure also got a boost from the last year's tax cut. Presently the administration has been advocating further cuts in excise duties. All these things add stimulus to the economy.

The performance of the construction industry has been very good for last three years. The construction industry consumes about twelve to fifteen per cent of the total steel shipments.

The rail transportation industry has been having good years as far as profits are concerned. It intends to spend a great deal on capital goods which will help the steel industry's outlook. The steel industry during the late 1950's had to face increased competition from the European and Japanese steel industry. The European steel industry has recently recovered after World War II. It has better steel mills because of the new technology. During the time of the steel strike of 1958 the United States had to import a large quantity of steel. During the period (1955-58) the U.S. had a surplus of steel exports over imports, but since 1959 the position has been reversed. Now U.S. imports more steel than it exports (Table 15). In 1963, it exported 2.5 million tons and it imported about 5.7 tons.

Currently the U.S. steel industry is going through a great change. The change has been due to the change in steel technology. Now most of the steel mills are changing to oxygen furnaces. Besides this, due to the advancement in steel technology, steel has been making quite a few new alloys. These alloys are able to compete better with

TABLE 15

SHOWING U.S. IMPORT-EXPORT TRADE IN IRON AND STEEL

Year	U.S. Export of Iron and Steel Total net tons	U.S. Import of Iron and Steel Total net tons
1955	4,060,998	970,657
1956	4,347,903	1,336,085
1957	5,347,678	1,154,216
1958	2,822,910	1,706,308
1959	1,676,652	4,393,719
1960	2,979,538	3,353,502
1961	2,228,162	3,321,432
1962	2,273,872	4,305,535
1963	2,511,772	5,664,739

Source: American Iron and Steel Institute.

plastic, paper, prestressed cement concrete and aluminium. All this is reflected in the fact that the steel industry is having a good year. In fact 1964 has been able to pass the previous record. During the last three years stockpiling of steel was negligible. Besides all these, it has not been faced with the strike problem for few years. But in 1965 it has to face new negotiations on the wage contract with the steel worker's union. Preliminary talks have started between the union representatives and the management.

Outlook for 1965

The U.S. steel industry is soaring into the final month of 1964 at a pace that may bring the year's production to a record 127 million tons.[1] This phase is likely to continue into the first half of 1965.

[1] "Economic Strength has Broad Base," op. cit., P. 23

In this half the outlook seems that the steel production will be at the annual rate of 125 million tons. The steel industry is set to duplicate this year's $1.8 billion of capital spending. This stands out as a symbol of the new technology in the increasing tonnage produced by basic oxygen furnaces.[1]

When we think of the upcoming labor negotiations, the view is clouded. The negotiations will play a great part in the next twelve months. Presently the officials of the United Steel Workers Union are in Pittsburgh to draw up demands for a new contract. The talks are at standstill because of the election of the president of the United Steel Workers Union. The normal uncertainty is sharpened by a lower struggle in the union between President David J. McDonald and Secretary-Treasurer I. W. Abel.[2] Both the management and the union are concerned about the possibility of a strike.

Considering the present trend set by the auto industry, it could possibly be that the strike may not take place. There are possibilities that the management might yield to some increases in wages or in fringe benefits. The question would be how these increases in wages are going to affect the economy. Recently steel prices were increased but these were selective price increases. President Johnson has ordered his top economic adviser to investigate the recent steel price increases. Gardner Ackley, Chairman of the Council of Economic Advisers, is expected to make a report "fairly soon."[3]

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[1]"Can Steel Keep Up its Pace in 1965?" Business Week, No. 1840, December 1964.

[2]"Steel Labor: Vital Year in 1965," Iron Age, Vol.195:1, January 1965, P. 29.

[3]"Steel Price Changes Handled with Care," Iron Age, Vol. 195:1, January 1965, P. 25

Now if an increase in wages is awarded, there are chances that the management might try a further increase in prices. Such a rise in the price of steel might give rise to a wage-price spiral. This might lead the economy into inflation, which could be harmful. But it may be expected that the administration will exert its influence in order to avoid the inflation. In the first half of 1965, there is likelihood that steel consuming industries will be building steel inventories as a hedge against the possibility of a steel strike. Due to this, steel production might be at the rate of 124-125 million tons per annum. In case there is no strike, the second half of 1965 will have lesser production of steel, because steel consumers will try to liquidate their inventories. It is just possible that the production might decline to the annual rate of 112-116 million tons. Steel production in the second half of 1965 will also depend upon the outlook for 1966. The 1966 steel production will be considerably influenced by how the 1966 model cars are doing.

During the first half of 1965, it is likely that steel imports might record an increase. The reasoning is that users will protect themselves by lining up foreign sources of supply. One industry official says this has started already. One steelman predicts net imports next year may top this year's six million ton estimate by the American Iron and Steel Institute.[1] Considering all these facts it is predicted that steel production during the year 1965 will be around 118-120 million tons. This is an estimate made by studying the outlook for steel consuming industries and the outlook for general economic conditions in the U.S.

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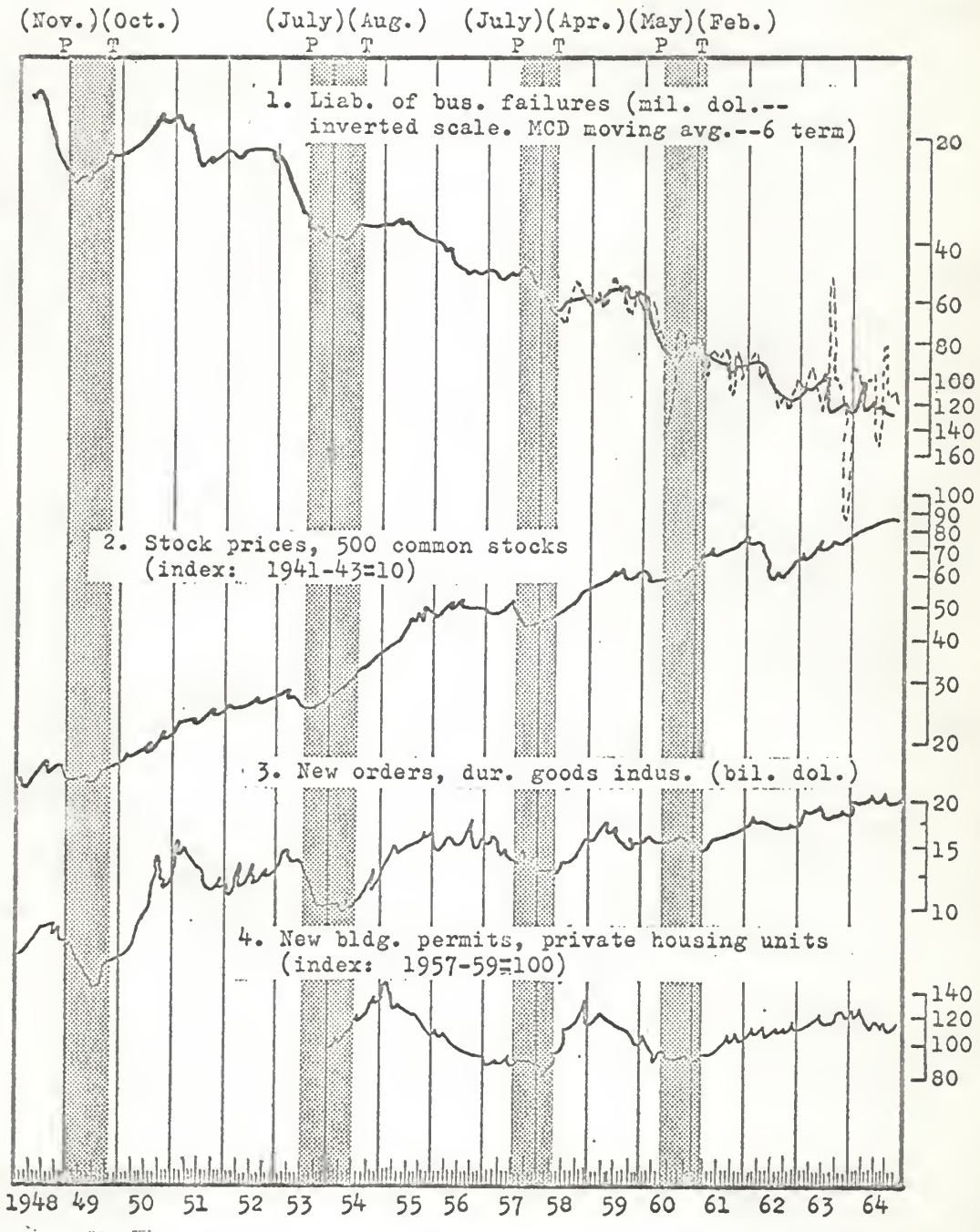
[1]"How Steel May Save An Old Market," Business Week, No. 1840, December 1964, P. 33.

APPENDIX

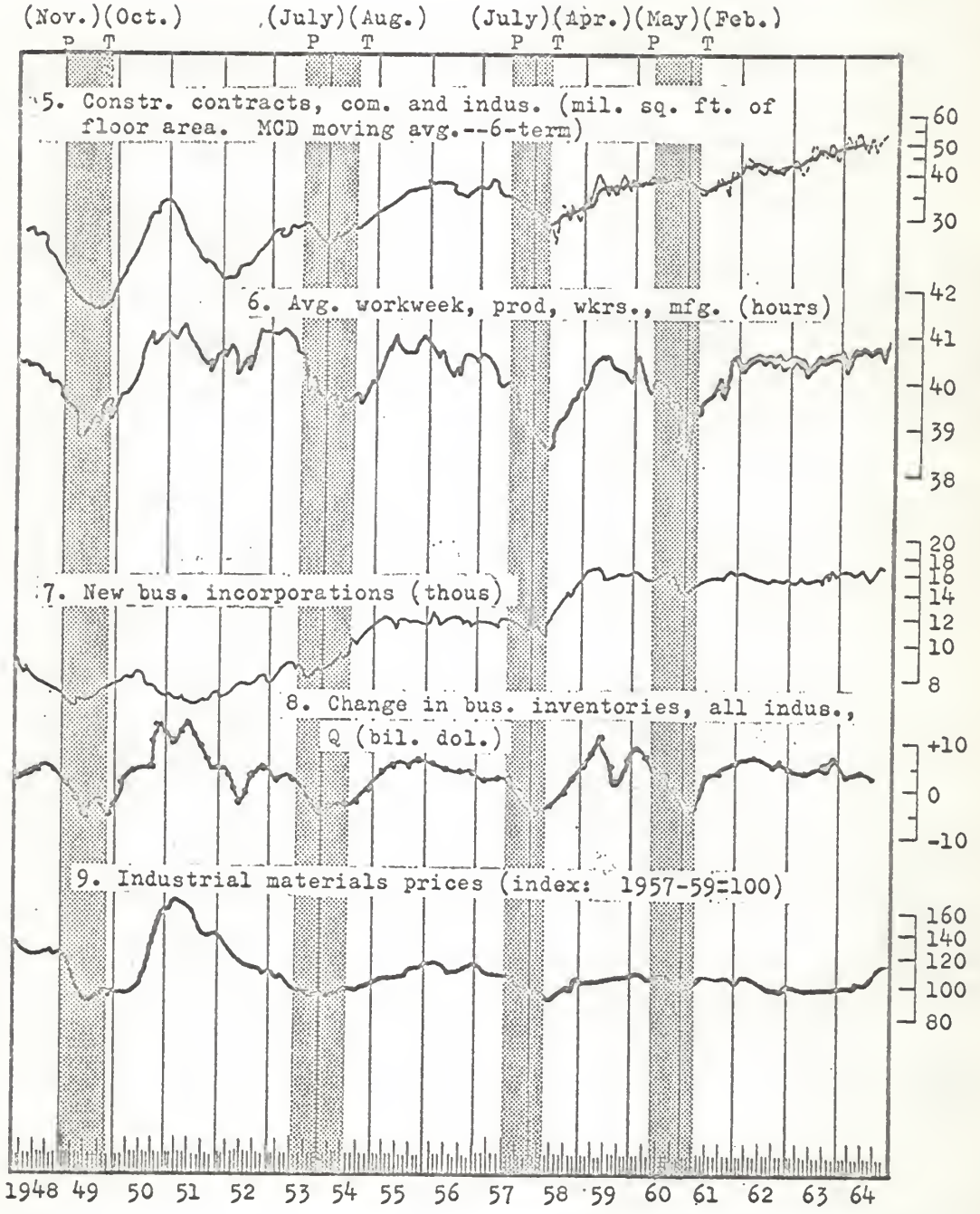
PLATE I



Leading Indicators

Source: Business Cycle Developments, December, 1964.

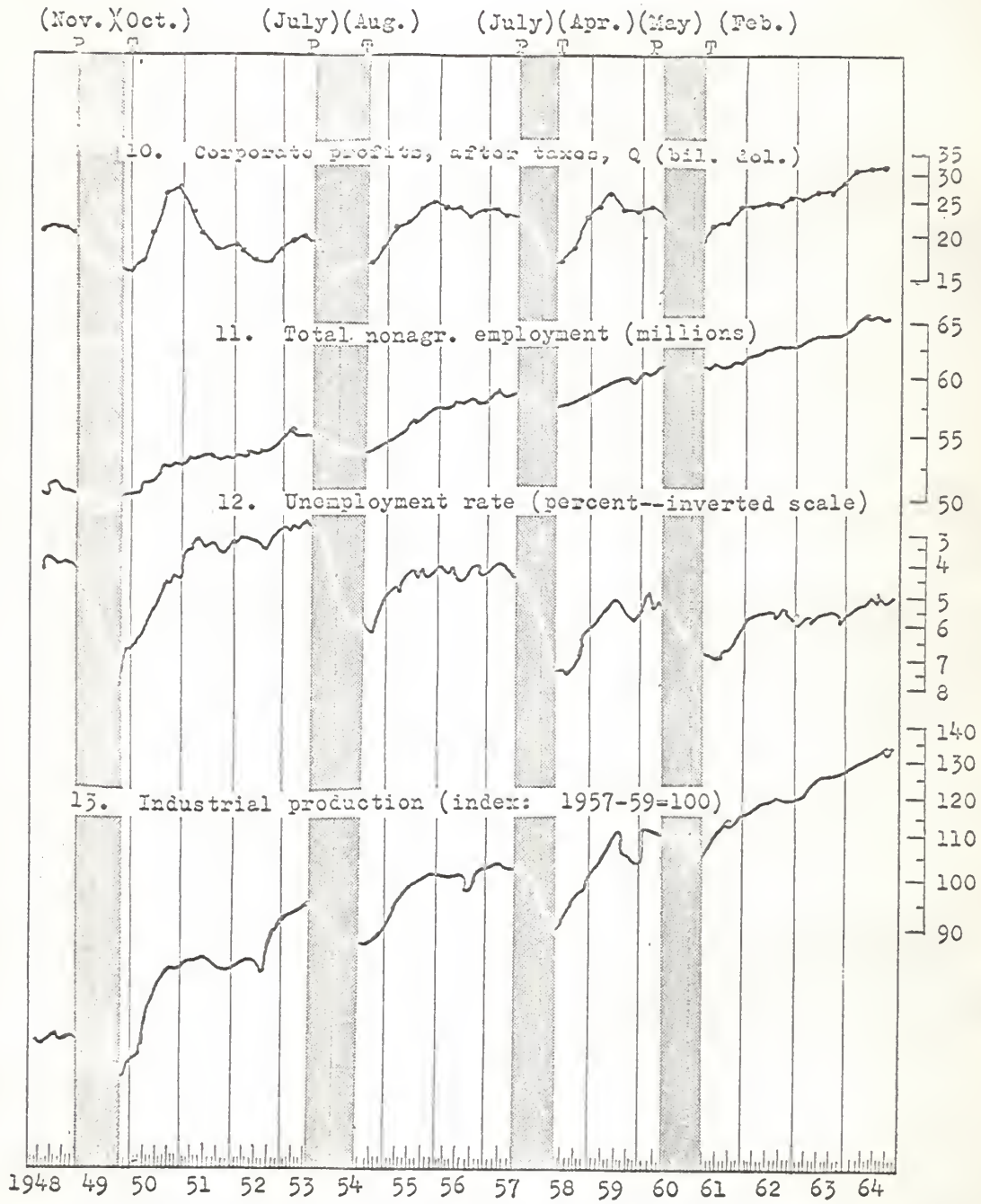
PLATE II



Leading Indicators

Source: Business Cycle Developments, December, 1964.

PLATE III

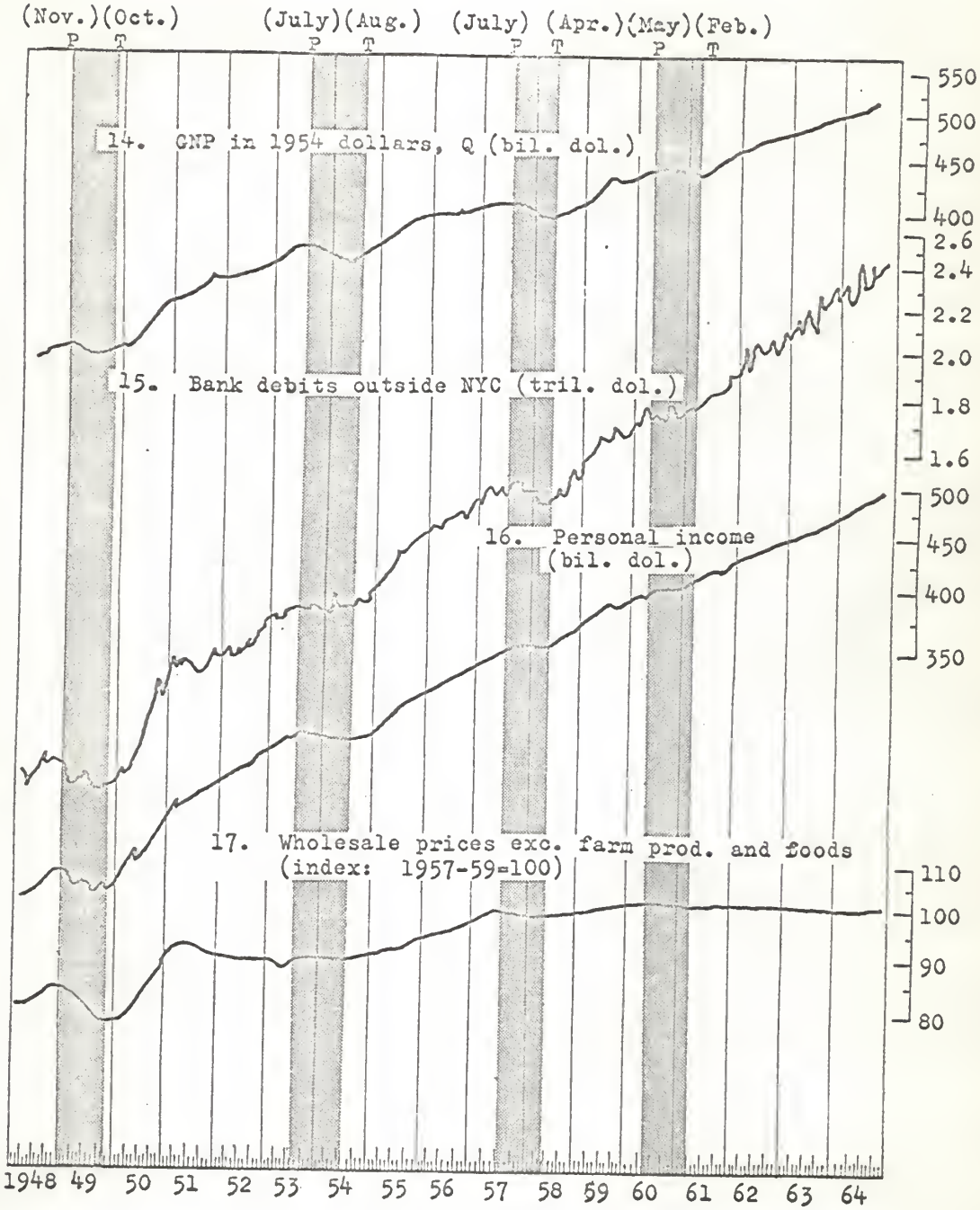


10. - Leading Indicator

11.-13. - Coincident Indicators

Source: Business Cycle Developments, December, 1964.

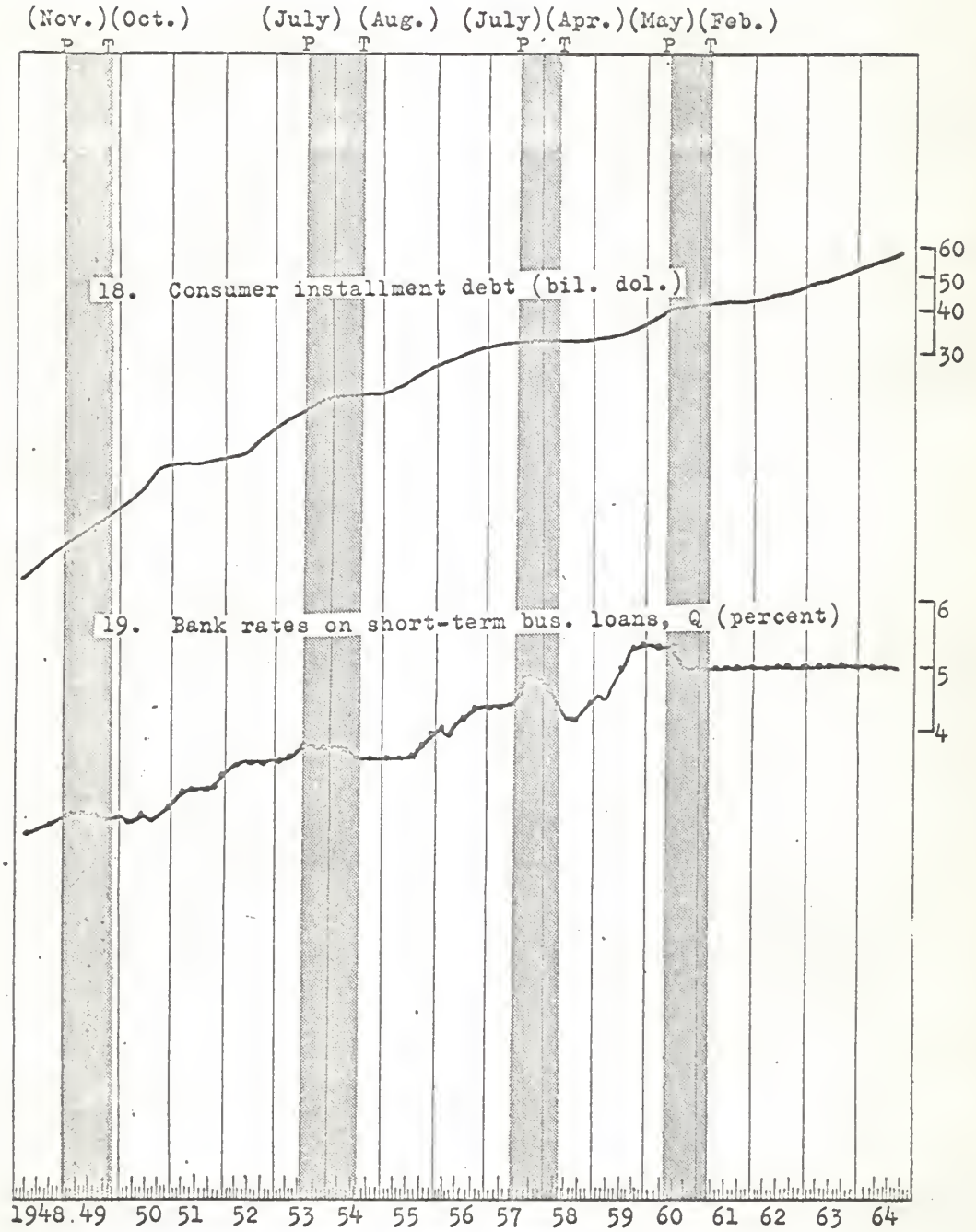
PLATE IV



Coincident Indicators

Source: Business Cycle Developments, December, 1964.

PLATE V



Lagging Indicators

Source: Business Cycle Developments, December, 1964.

APPENDIX A

AIS 16

AMERICAN IRON AND STEEL INSTITUTE
150 EAST FORTY-SECOND STREET, NEW YORK 17, N.Y.

SHIPMENTS OF STEEL PRODUCTS BY MARKET CLASSIFICATIONS
ALL GRADES INCLUDING CARBON, ALLOY AND STAINLESS
(Net Tons)

YEAR - 1963 (Period)

Sheet 5

MARKET CLASSIFICATIONS AND CODE†	STRIP: HOT ROLLED 36	STRIP: COLD ROLLED 37	TOTAL STEEL PRODUCTS 39	LESS SHIPMENTS TO MEMBERS OF THE INDUSTRY FOR CONVERSION OR RESALE 40	NET TOTAL STEEL PRODUCTS 41	PERCENT OF TOTAL SHIPMENTS
1. Steel for Converting and Processing Into:						
010 Wire and wire products	3	6,012	1,201,339	213,395	987,944	1.3
020 Hot and cold rolled sheets and strip	183,481	9,599	1,087,879	959,729	128,150	0.2
030 Pipe and tubes	110,764	38,997	2,203,214	1,352,791	850,423	1.1
* 040 Cold finished bars	-	-	988,438	661,017	327,421	0.5
050 Other steel products and steel castings	2,539	7,994	452,918	158,168	294,750	0.4
060 Resale shipments	950	1,765	330,464	306,705	23,759	-
Total	297,737	64,367	6,264,252	3,651,805	2,612,447	3.5
Less shipments to members of the industry for conversion or resale	250,745	22,229	3,651,805	-----	-----	-----
Group Total	46,992	42,138	2,612,447	-----	2,612,447	-----
2. 070 Forgings (Except Automotive and Aircraft)	-	-	-----	-----	898,813	1.2
3. 080 Bolts, Nuts, Rivets, and Screws	9,550	22,869	-----	-----	1,160,346	1.5
4. Steel Service Center and Distributors						
110 Oil and gas supply houses – direct to customers	-	-	-----	-----	1,226,271	1.6
120 Oil and gas supply houses – for stock	-	3	-----	-----	295,753	0.4
150 All other steel service centers and distributors – direct to customers	24,790	17,347	-----	-----	1,190,337	1.6
160 All other steel service centers and distributors – for stock	130,438	103,378	-----	-----	10,437,022	13.8
Group Total	155,228	120,728	-----	-----	13,149,453	17.4
5. Construction, Including Maintenance						
170 Residential	1,374	592	-----	-----	164,211	0.2
191 Non-residential – industrial	4,032	49	-----	-----	884,904	1.2
192 Non-residential – commercial	2,385	173	-----	-----	729,714	1.0
193 Non-residential – all other	3,076	-	-----	-----	455,158	0.6
200 Public construction – streets and highways	9,295	4,633	-----	-----	1,035,657	1.4
210 Public construction – all other	2,527	60	-----	-----	495,600	0.6
230 Oil and gas – processing and distribution	326	406	-----	-----	1,859,438	2.5
240 Public utilities (except gas)	808	100	-----	-----	411,655	0.5
250 Steel industry – construction, maintenance, repairs and operating supplies (including own use)	10,088	1,605	-----	-----	1,104,633	1.5
260 Unidentified construction	10,470	23,755	-----	-----	2,209,504	3.0
Group Total	43,331	31,373	-----	-----	10,050,614	13.3
6. Contractors' Products						
270 Air conditioning and ventilating equipment	1,181	1,490	-----	-----	382,499	0.5
280 Builders' hardware	11,431	74,170	-----	-----	184,526	0.2
* 290 Culverts and concrete pipe	1,889	-	-----	-----	543,657	0.7
300 Plumbing and central heating equipment	4,165	7,706	-----	-----	1,120,859	1.5
321 Architectural products	46,227	39,350	-----	-----	469,301	0.6
322 Rain goods, roofing and siding	353	693	-----	-----	302,714	0.4
329 All other contractors products	67,913	14,827	-----	-----	1,335,134	1.8
Group Total	133,159	138,236	-----	-----	4,336,770	5.7
7. Automotive						
330 Vehicles, parts and accessories – assemblers	287,130	171,863	-----	-----	11,194,650	14.8
340 Trailers, all types	3,714	2,530	-----	-----	226,554	0.3
350 Parts and accessories – independent suppliers	228,498	164,982	-----	-----	4,918,077	6.5
360 Automotive forgings – independent forgers	10	-	-----	-----	549,767	0.8
Group Total	519,352	339,375	-----	-----	16,889,048	22.4
8. Rail Transportation						
370 Railroad rails, trackwork, and equipment	2,006	31	-----	-----	617,244	0.8
390 Freight cars	10,363	106	-----	-----	1,706,947	2.3
410 Passenger cars	394	717	-----	-----	35,787	0.1
430 Locomotives	434	138	-----	-----	172,249	0.2
440 Street railways and rapid transit systems	6	3	-----	-----	30,677	-
Group Total	13,203	1,029	-----	-----	2,562,904	3.4
9. 450 Shipbuilding and Marine Equipment	1,096	304	-----	-----	711,656	0.9

* Includes Carbon and Alloy only.

Form Revised 1/1/63

(Continued on sheet 5-A)

AMERICAN IRON AND STEEL INSTITUTE
150 EAST FORTY-SECOND STREET, NEW YORK 17, N. Y.

AIS 16

SHIPMENTS OF STEEL PRODUCTS BY MARKET CLASSIFICATIONS
ALL GRADES INCLUDING CARBON, ALLOY AND STAINLESS
(Net Tons)

YEAR - 1963
Period

Sheet B-A

MARKET CLASSIFICATIONS AND CODES	STRIP		TOTAL STEEL PRODUCTS	LESS SHIPMENTS TO MEMBERS OF THE INDUSTRY FOR CONVERSION OR RESALE	NET TOTAL STEEL PRODUCTS	PERCENT OF TOTAL SHIPMENTS
	HOT ROLLED	COLD ROLLED				
	36	37	39	40	41	
10. Aircraft						
480 Aircraft and parts	2,144	2,388	.....	.....	52,333	0.1
481 Aircraft forgings - independent forgers	-	-	.....	.....	24,232	-
Group Total	2,144	2,388	.....	.....	76,565	0.1
11. 490 Oil and Gas Drilling	992	96	.....	.....	295,285	0.4
12. 500 Mining, Quarrying, and Lumbering	6,962	252	.....	.....	284,194	0.4
13. Agricultural						
520 Agricultural machinery	74,309	1,951	.....	.....	251,423	1.2
540 All other agricultural	4,990	1,612	.....	.....	273,346	0.4
Group Total	79,299	3,563	.....	.....	1,224,769	1.6
14. Machinery, Industrial Equipment and Tools						
General purpose industrial equipment:						
550 Bearings	55,945	22,373	.....	.....	499,889	0.7
560 Materials handling equipment	27,768	4,109	.....	.....	461,129	0.6
570 All other general purpose industrial equipment	6,496	5,886	.....	.....	996,798	1.3
580 Construction and related equipment	4,277	212	.....	.....	517,889	0.7
610 Metal working equipment	12,957	4,455	.....	.....	554,462	0.7
640 Other special industrial equipment	3,828	11,197	.....	.....	476,290	0.6
660 Tractors	4,674	500	.....	.....	725,165	1.0
670 Hand tools	25,357	7,276	.....	.....	266,316	0.3
Group Total	140,992	57,308	.....	.....	4,497,931	5.9
15. Electrical Machinery and Equipment						
Power generating and distributing equipment:						
681 Turbine generators	4,297	6,877	.....	.....	74,168	0.1
*682 Electrical conduit and raceways	4,268	5,169	.....	.....	420,412	0.5
*683 Laminations for electrical motors, transformers, generators and other apparatus	303	-	.....	.....	29,213	-
689 All other power generating and distributing equipment	27,752	10,558	.....	.....	1,112,107	1.5
690 Other electrical apparatus	7,161	61,515	.....	.....	453,360	0.6
700 Communications and electronic equipment	11,336	13,557	.....	.....	194,659	0.3
Group Total	55,115	97,676	.....	.....	2,283,919	3.0
16. Appliances, Utensils, and Cutlery						
720 Cooking and space heating stoves	720	21,579	.....	.....	439,155	0.6
730 Refrigerators, freezers and room air-conditioners	8,011	5,899	.....	.....	706,235	0.9
740 Household laundry, equipment and dishwashers	6,053	3,088	.....	.....	487,123	0.7
750 Other household appliances	8,652	29,658	.....	.....	158,510	0.2
770 Utensils and galvanized ware	1,771	21,309	.....	.....	196,407	0.3
780 Cutlery and table flatware	2,221	13,274	.....	.....	22,645	-
Group Total	27,435	95,587	.....	.....	2,010,075	2.7
17. Other Domestic and Commercial Equipment						
790 Domestic furniture and other equipment	11,516	16,221	.....	.....	573,902	0.8
800 Office furniture, supplies and business machines	13,178	35,526	.....	.....	605,996	0.8
810 Other commercial, institutional, professional, and scientific equipment	4,593	23,088	.....	.....	400,538	0.5
830 Sporting goods, toys, and signs	8,457	24,125	.....	.....	311,756	0.4
Group Total	37,644	98,960	.....	.....	1,892,192	2.5
18. Containers, Packaging and Shipping Materials						
*870 Cans - Sanitary and general line	-	19	.....	.....	4,745,931	6.3
*880 Crown caps and other closures	3,101	223	.....	.....	353,493	0.5
900 Containers, Pkg. & Ship. Matls. (Stainless)	-	1,330	.....	.....	1,748	-
*910 Steel barrels and drums : 19 gage and heavier	5,205	144	.....	.....	388,272	0.5
*920 Steel barrels and drums : Lighter than 19 gage	598	27	.....	.....	301,699	0.4
*930 Shipping pails	2	24	.....	.....	128,074	0.2
*940 Compressed gas cylinders	1,242	972	.....	.....	58,399	0.1
*960 Cooperage, boxes, strapping, and all other containers	166,705	39,561	.....	.....	486,551	0.6
Group Total	178,260	42,300	.....	.....	6,464,167	8.6
19. 970 Ordnance and Other Military	900	8,461	.....	.....	288,726	0.4
20. 980 Export (Reporting Companies Only)	33,722	18,671	.....	.....	1,830,858	2.4
21. Non-Classified Shipments	1,632	250,128	.....	.....	2,032,404	2.7
Total, All Groups (1 to 21)	1,486,308	1,371,962	.....	.....	75,555,142	100.0

* Includes Carbon and Alloy only.

Form Revised 1/1/63

LITERATURE CITED

A. BOOKS

Allen, R. G. D. Statistics for Economists. Hutchinson's University Library, Hutchinson House, London W. 1 New York, 1949.

Bassie, Lewis V. Economic Forecasting. New York, Toronto, London, McGraw Hill Book Company, Inc. 1958.

Bratt, Elmer C. Business Forecasting. New York, Toronto, London, McGraw Hill Book Company, Inc. 1958.

Bryant, Edward C. Statistical Analysis. New York, Toronto, London, McGraw Hill Book Company, Inc. 1960.

Dewey, Edward R., and Edwin F. Dakin. Cycles, the Science of Prediction. New York, Henry Holt and Company. 1947.

Eiteman, Wilfred J. Business Forecast. Ann Arbor, Michigan, Masterco Press. 1954.

Hardy, Charles O., and Cox V. Garfield. Forecasting Business condition. New York, The MacMillan Company, 1927.

Hartley, Phillip B. Short Range Forecasting. Center for Research in Business. (The University of Kansas, Lawrence, Kansas. 1962.

Henry, Broude W. Steel Decisions and the National Economy. New Haven, and London, Yale University Press. 1963.

Lee, Maurice W. Economic Fluctations. Homewood, Illinois, Richard D. Irwin, Inc. 1955.

Lewis,John P. Business Condition Analysis. New York, Toronto, London, McGraw Hill Book Company, Inc. 1959.

Maisel, Sherman J. Fluctations, Growth, and Forecasting. New York: John Wiley & Sons, Inc. London: Chapman and Hall Ltd. 1957. Frand D. Newbarry, New York, Toronto, London, McGraw Hill Book Company, Inc. 1952.

National Bureau of Economic Research, Short Term Economic Forecasting. Princeton: Princeton University Press. 1955.

Prochnow, Herbert V. Determining the Business Outlook. Harper & Brothers, New York: N. Y. 1954.

Silk, Leonard S. Forecsting Business Trends. New York, Toronto, London, McGraw Hill Book Company, Inc. 1963. (Paperback edition).

B. ARTICLES AND PERIODICALS

"A New Steel Industry By 1975." Steel. September, 1964, 155:11.

"Another Billion Year." Railway Age. October 1964, 157:14.

"Another Record Construction Year." Steel. September 1964, 155:11.

"Big Steel Wants a Bigger Share." Fortune. January 1965, 71:1.

"Business Outlook for 1963."- A Note on Forecasting. Journal of Business. Chicago: University of Chicago Press. January 1963, 36:1.

"Business Outlook." Business Week. December 1964, No. 1841.

"Business Round Up." Fortune. January 1965, 71:1.

"Capital Outlays for New Plant and Employment in 1965 May be Larger than Predicted." Business Week. December 1964, No. 1841.

"Construction the Prospects for 860 Million." Business Week. June 1964, No. 1816.

"Economy's Strength has Broad Base." Iron Age. January 1965, 199:1.

"Forecasting Sales and Production Volumes." Financial Executive. April 1964, 32:4.

Harriman, John W. "Economic Outlook-1965." Exchange. January 1965, 26:1.

"Metal Working Facts and Figures." Steel. March 1964, 154:13.

"Housing Turn a Corner." Business Week. December 1964, No. 1842.

"Record $20 Million Worth of Contracts in Nine Months." Engineering News Record. November 1964, 173:22.

"RPI Members get Crystal Ball View of 1965?" Railway Age Weekly. November 1964. 157:20.

"Set for a Fifth Fat Year." Business Week. January 1965, No. 1844.

"Steel's Forecast for 1965." Steel. January 1965, 156:1.

"Steel's Resurgence: Good News to Users." Steel. April 1964, 154:14.

"What Metal Working Executives Expect in 1965." Steel. November 1964.

C. PUBLIC DOCUMENTS

U.S. Bureau of Budget, Supplement to Economic Indicators. Prepared by the joint Economic Committee by the Comittee Staff and the Office of Statistical Standards, U. S. Government Printing Office, Washington 1964.

U. S. Bureau of Census, Business Cycle Development. Washington: U. S. Government Printing Office, Division of Public Documents, October 1964.

U. S. Bureau of Labor Statistics, Monthly Labor Review. Washington: U. S. Government Printing Office, Division of Public Documents, October 1964, 87:10.

U. S. Office of Business Economics, Survey of Current Business. Washington: U. S. Government Printing Office, Division of Public Documents.

D. OTHER PUBLICATIONS.

American Management Association, Sales Forecasting, Special Report No. 16. A.M.A., Inc. New York: 1515 Broadway 36.

American Management Association, Materials and Methods of Sales Forecasting, Special Report No. 27. A.M.A., Inc. New York: 1515 Broadway 36.

American Iron and Steel Institute, AES-16 Shipment of Steel Products by Market Classifications. New York: AI and SI 154 East 42 Street, N. Y. 17.

Colm, Gerhard and Carol S. Carson. Economic Outlook for 1965. Center for Economic Projections. National Planning Association, Joint Report No. 64-c. Washington: 1606 New Hampshire Avenue, October 1964.

Ferber, Robert. The Railroad Shipper Forecast. University of Illinois Bulletin, Bureau of Economic and Business Research, University of Illinois, Urbana, 1953.

Ridton, Harold. The Economy in 1962 and Outlook for Steel. National Association of Sheet Metal Distributors. Pittsburgh, Pennsylvania, April 1962.

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ECONOMIC OUTLOOK FOR THE U.S. STEEL INDUSTRY FOR THE YEAR 1965

by

VASANT K. BHATNAGER

B. A., Allahabad University, Allahabad, 1959
M. A., Rajasthan University, Jaipur, 1961

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1965

The purpose of this report is to forecast the output of the U.S. steel industry for the year 1965.

Economic forecasts are made in order to predict the future economic conditions of a country, industry, or a firm. Such forecasts help to provide for better planning and control in a business organization.

In making this forecast the following steps were used.

1. Making assumptions about certain political and international factors.

2. Forecasting the 1965 outlook for (a) general economic conditions (b) steel consuming industries.

3. Utilizing the forecasts in (2) above, forecasting output in the steel industry.

The assumptions were:

1. There will not be any major wars.

2. There will not be any prolonged strike.

3. There will not be any significant changes in the consumer behavior.

In forecasting general economic conditions total economic activity was divided into various components and aspects, including disposable income, personal consumption, personal savings, industrial production, consumer prices, inventory developments, residential construction, exports, federal, state and local spending, wage and interest developments and each component was analyzed. The National Bureau of Economic Research Lead-lag technique was used in forecasting general economic conditions.

In forecasting output in steel consuming industries the following industries were emphasized: construction, automobile, plant and equipment, and rail transportation. The methods were (1) extrapolation of trends

computed by linear regression equations based on the 1950-64 period and (2) forecasts made by other economists.

In forecasting output in steel industry trends from 1950-64 were computed by a linear regression equation. Also the results of the analysis of the economy as a whole and of the steel consuming industries were incorporated in the forecast for the steel industry itself.

The steel industry had a prosperous year in 1964. The production of steel was 127 million tons, a new record. Due to the fear of a strike in the steel industry, the first half of 1965 is going to be characterized by high production. But in the second half of 1965 steel production will decrease from the first half-year's rate.

It is predicted that steel production in 1965 will be 118-120 million tons.