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PROFITS, PRODUCTIVE ACTIVITIES AND NEW INVESTMENT

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MONOGRAPH NO. 12

PROFITS, PRODUCTIVE ACTIVITIES, AND NEW INVESTMENT

MARTIN TAITEL

*Alternates.

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This monograph was written by

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The Temporary National Economic Committee is greatly indebted to the author for this contribution to the literature of the subject under review.

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[Signed] JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

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LETTER OF TRANSMITTAL

Hon. JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee,
Washington, D. C.

MY DEAR SENATOR: I have the honor to transmit herewith a study on Profits, Productive Activities, and New Investment. The study deals with one of the basic elements of our business economy, for profits are the ends which businesses are organized to attain.

It has long been recognized that profit income is highly concentrated. But there has been no agreement concerning the precise nature of the effects of such concentration upon the use of resources. This study for the first time measures quantitatively the effects of the high degree of concentration of profit income upon the distribution of income and of wealth and, thence, upon savings and investment, the prime factors determining the level of employment and of the national income. A major finding is that, at least so far as corporate enterprise is concerned, a retarding influence is almost continuously imparted from corporate equity accounts to economic activity. This finding of fact throws in sharp relief a major area with which public policy must be concerned when directed toward the attainment of a satisfactory functioning of the economy.

Likewise, while it has long been recognized that there is some relation between the profits and the expansions of individual businesses, no effort has hitherto been made to measure what the relation is. While common experience shows that heavy losses result in bankruptcy, it is not so certain that high profits uniformly result in high rates of expansion. Furthermore, there has been no definitive showing as to the roles played by technological change, growth of demand whether based upon population increases or upon increases in the standard of living, capacities, price and production controls, and similar factors in the process of business investment.

It has become fashionable in many quarters, including professional economists, to assert that profit is the controlling factor—the governor in the economy. Yet the author of this study finds, just as other students [1] of profits have found, that such assertions contradict the facts. While showing that profits do play a part in determining the rate of expansion, he is forced to conclude that "factors other than the amount or the rate of profit have been the major determinants of the level of capital expenditures of groups of companies in the same industry and, hence, of business as a whole. Of these other factors, the

[1] For example, a noted expert, after making an exhaustive survey published by the National Bureau of Economic Research, came to the conclusion that "the 'tendency' toward equalization of profit rates is not sufficiently strong to prevent differences exceeding 100 percent between average profit rates earned by considerable groups of corporations from appearing and maintaining themselves over a full decade." (Ralph C. Epstein, Industrial Profits in the United States, New York; 1934, p. 587.)

According to another author, "When prices are maintained, profits no longer serve as an objective device for eliminating inefficient concerns. Nor do they guide investment away from industries earning a low rate of return to those earning a high rate so as to bring about an optimum distribution of natural resources, labor, and capital." (Willard L. Thorp, Economic Problems in a Changing World, New York: 1939, p. 288.)

most important have been the level of output in relation to capacity and the pressure upon business for the introduction of available new technologies." Again, "concentration of income and wealth is the most important single factor leading to a volume of capital expenditures inadequate for the maintenance and expansion of the national income."

The importance of these conclusions to a determination of the kind of public policy which is desirable will be recognized by all those who have given thought and consideration to the problem of idle men and idle money.

The staff of the Temporary National Economic Committee owes a debt of gratitude to the author of this monograph, Mr. Martin Taitel, not only for the energy and care devoted to the preparation of a pioneering study, but also for his generous response to our many calls for assistance on other matters.

Respectfully submitted.

THEODORE J. KREPS,
Economic Adviser.

SEPTEMBER 3, 1940.

PREFACE

This study of "Profits, Productive Activities, and New Investment" represents the first major attempt to bring the body of factual material on profits to bear directly upon our problem of idle men and idle money. It is designed to focus attention upon some of the problems which must be faced and solved if our human and material resources are to be fully utilized.

In presenting the study I wish to express my appreciation to the Temporary National Economic Committee for the services of Mr. David Ryshpan, who critically reviewed the manuscript and assisted in preparing the final draft of the study, and for the services of Mr. James A. Carey, who did much of the necessary exploratory reading in the extant literature on profits; to the Securities and Exchange Commission for the services of Mr. F. K. Bishop, who collected almost all of the material on revaluations, acquisitions, consolidations, and mergers; to the Work Projects Administration for clerical assistance and for the preparation of the charts.

In addition, I wish to express my appreciation to Prof. Alvin H. Hansen of Harvard University; Prof. Theodore J. Kreps, Economic Adviser to the Temporary National Economic Committee, and to Dr. Dewey Anderson, Executive Secretary of the Temporary National Economic Committee for valuable comments and suggestions; and to all those who in discussion and otherwise have aided in the development and clarification of the presentation.

I wish especially to thank Commissioner Leon Henderson for guidance and advice during the course of the study.

Full responsibility for the analysis and the conclusions is, of course, mine alone.

Respectfully submitted.

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Senior Consulting Economist, Work Projects Administration.

AUGUST 7, 1940.

SUMMARY

A. MAJOR FINDINGS

1. *Profit volume.*—Substantial amounts of profits have consistently accrued to corporate stockholders. Since 1909 the corporate system has failed to break even in only 3 years and in only 2 other years was it near the break-even level. During the past 3 decades profits (after taxes) of the corporate system averaged at least 3.5 billion dollars annually and probably averaged in excess of 4.5 billions annually.

2. *Profit rates.*—Profits (after taxes) accruing to stockholders have provided a rate of return which, when based upon the contemporaneous book values of their equities, usually has been between 5 and 7 percent. During the Great Depression the rate was considerably below this range, but losses in the 3 loss years, 1931 to 1933, totaled less than 5 percent of net worth. And in 1936 and 1937, even though there was a wide underuse of resources, the profit rate was only slightly below 5 percent.

Profit rates based upon contemporaneous book values appear to be moderate, because of the tendency for book values to be adjusted to current profits; that is, the profit rate tends to be not so much a measure of profitability as of the "fair" profit rate to which book values of the corporate system are adjusted.

3. *Profit margins.*—Profits of the corporate system have consistently accounted for a substantial part of corporate income produced. During the New Era period, for example, profits averaged 15 cents out of every dollar of income produced. There has been no great change in the relation between corporate profits and income produced relative to capacities; that is, about the same profit margin has been associated with a given rate of capacity operation throughout the past 3 decades.

Differences in profit margins as between periods have been largely the result of differences in the level of output relative to capacity. For example, the difference between the profit margins in the 1936–37 period and in the 1922–29 period is largely the result of differences in the rate of capacity utilization.

Under existing conditions, it appears that the corporate system can break even with the national income between fifty-five and sixty billion dollars; reasonably full use of resources would probably correspond to an eighty-five to ninety-billion-dollar national income.

Past experience indicates that, at an eighty-five to ninety-billion-dollar national income, profits of the corporate system would amount to about ten billion dollars.

4. *Dividends.*—Cash dividends have consistently amounted to at least 50 percent of the reported profits of the corporate system. During the past 3 decades, the net dividend outgo has averaged in excess of 3 2 billion dollars annually

5. *Concentration of dividend receipts.*—There is a high degree of concentration of dividend receipts. Most of the net dividend outgo of the corporate system is received by a small number of individuals. Over half of the net dividend outgo is received by no more than 1,000,000 individuals. But the most striking evidence of concentration is the fact that 25,000 individuals receive about 35 percent of the net dividend outgo of the corporate system. And it appears that there has been no substantial change in the degree of concentration of dividend income during the past 15 or 20 years.

Differences in dividend income account for the major part of the wide spread between incomes of individuals. For example, over 50 percent of the difference between the average 1936 incomes of $10,000 and $100,000 was due to the difference in average dividend income, while 75 percent of the difference between the average 1936 incomes of $500,000 and $1,000,000 was due to the difference in average dividend income.

6. *Income level of dividend recipients.*—Most dividends are received by individuals in the middle and high income levels. Between 60 and 75 percent of the net dividend outgo of the corporate system is received by individuals with incomes of 5,000 or more 1935–36 dollars. And between 40 and 50 percent is received by individuals with incomes of 20,000 or more 1935–36 dollars.

7. *Savings out of dividends.*—There is a high rate of savings out of dividends. Well over 40 percent of the dividend income received by individuals with incomes of 5,000 or more 1935–36 dollars is saved. The savings of such individuals from dividends have ranged from around $700,000,000 in 1932 to no less than $2,000,000,000 in 1929 and have amounted to at least 25–35 percent of the net dividend outgo of the corporate system. This latter rate has been at least twice as large as the rate of savings from all privately originating income.

8. *Savings out of profits.*—A large proportion of all savings are made from profit income. Savings out of corporate profits (retained profits plus savings out of dividends) have accounted for at least 40 percent of all private savings in years of fairly high activity, whereas corporate profits have not (except during the World War period) exceeded 11 percent of all privately originating income. With declines in activity, the proportion of savings accounted for by corporate profits declines. And, when corporate profit accounts are dissaving, those dissavings may exceed any savings in the rest of the private sphere.

9. *Concentration of savings out of corporate profits.*—A very large and disproportionate share of private savings are made by relatively few individuals. For example, probably more than 60 percent of the savings out of dividends have been made by individuals with incomes of 20,000 or more 1935–36 dollars. The consequence of the high concentration of savings is a tendency for an increasing concentration of the available wealth. Even when the corporate equity accounts as such are dissaving, the burden falls less heavily upon dividend recipients in the higher income brackets because their very high rate of savings enables them to offset corporate losses to a greater extent than can dividend recipients in the middle and low income brackets.

10. *Net absorption of savings by ownership accounts.*—The equity accounts of the corporate system usually do not absorb all of the savings they create. Only in the rare periods characterized by relatively full use of resources and a high rate of expansion has the volume of stock issues been sufficient to absorb the savings out of dividends. In other periods, the savings created but not absorbed by corporate equity accounts have acted to increase the volume of savings which must be absorbed in other areas or in other forms in order to prevent declines in the national income.

11. *Profit rates and asset-expansion rates.*—Usually there is a definite association between the profit rates and the (noncash) asset-expansion rates of corporations carrying on similar activities. In the oil industry, companies with the higher rates of return (on invested capital) have, on the average, expanded their assets at greater rates than companies with the lower rates of return. And the relation between profit and asset-expansion rates has been more marked over a period of years than in single years.

Production and price controls appear to lower the effectiveness of the profit rate in determining differential expansion rates. In the oil industry, the effect of such controls, except during periods of rapid industry expansion to new high levels of activity, has been to lower the amount of difference in asset-expansion rates as between companies for a given difference in the rate of return.

12. *Asset-expansion rates at a given profit rate.*—A high profit rate has not in itself been sufficient to guarantee a high rate of asset expansion; and a low profit rate has not prevented rapid expansions of assets. For example, during the period 1927–1938, the rate of asset change for oil corporations with a 5 percent rate of return varied from an average asset contraction of about 1.4 percent in 1932 to an average asset-expansion rate of 4.5 percent in 1937 and of almost 6 percent in 1929 Consequently, factors other than the profit rate are very important determinants of the volume of asset expansion.

The volume of business, the relation of output to capacity, and prices appear to be the most important factors determining the rate of asset expansion at a given rate of return. At a given rate of return, oil corporations have shown greater asset-expansion rates, the greater the increase in the volume of business and the higher the ratio of output to capacity. In addition to their effects upon the volume of business, price changes have apparently operated to change the volume of current assets in the direction of a price change and the rate of introduction of cost-reducing technologies in the direction opposite to that of the price change.

13. *Profit rates and property-expansion rates.*—There is a tendency for the higher property (land, buildings, and equipment)-expansion rates to be associated with the higher rates of return (on invested capital). This tendency while only slight for single years is marked over a period of years.

Underlying conditions determine the closeness and even the existence of the relationship between property-expansion and profit rates. In the oil industry the relations between rates of return and property-expansion rates have been less marked during periods in which many companies have made major expansions than during other periods. The latter have been periods either of relatively high and stable activity or of substantial under-use of capacity. In the steel industry there

has been a definite positive relation between rates of return and property-expansion rates only during periods of relatively high and expanding activity. In other periods there has been a very strong tendency for the positive relation to disappear.

The amount of difference in property-expansion rates per 1 point difference in the rate of return depends upon the underlying conditions. In the oil industry the effectiveness of the profit rate in determining differential expansion rates has been lower during periods in which a large amount of expansion was financed from external sources than in other periods; within periods during which expansions have been financed from internal sources, the amount of difference in property-expansion rates per 1 point difference in the rate of return has been higher, the greater the need for new capacities and the greater the need for the introduction of new technologies. In the steel industry the level of output relative to capacity has been the major factor determining the effectiveness of the profit rate with regard to differential expansion rates.

14. *Property-expansion rates at a given profit rate.*—High profit rates, in themselves, are not sufficient to guarantee high rates of property expansion; similarly, low profit rates do not necessarily entail low property-expansion rates. For example, the average annual rate of property expansion for oil corporations with a 10-percent rate of return has varied from 3.6 percent in the 1932–34 period to 8.8 percent in the 1930–31 period; in the 1935–37 period the average rate was 6.3 percent and in the 1928–29 period 4.4 percent. Again, steel corporations with a 10-percent rate of return would have expanded their property at an annual rate of 4.4 percent in the 1927–29 period and 2.2 percent in the 1935–37 period, but would have contracted their property at a 3.2-percent rate in the 1933–34 period. Consequently, conditions other than the profit rate are very important factors in determining the volume of expenditures on land, buildings, and equipment.

The rate of capacity operations and technology appear to be the most important determinants of the rate of property expansion at a given profit rate. In both the oil and steel industries, property-expansion rates have been higher, the greater the rate of capacity utilization and the greater the need for introducing new technologies.

B. MAJOR IMPLICATIONS

1. *Important effects of profit income.*—The most important effects of profit income are those with respect to its influence upon the flow of funds. For the character and the level of output are determined by the way in which funds flow through the economy. Chart 20 (p. 128) presents the most fundamental aspects of the flow of funds in simplified diagrammatic form.

2. *Availability of funds.*—Expansion of the national income *may* be limited by the exhaustion of the possibilities for credit expansion. However, the evidence indicates that at no time since the inception of the Federal Reserve System in 1913 has expansion been limited by shortages of funds.

A decline in the national income cannot result from a shortage of funds in the capital pool. For, gross savings always provide a volume of funds sufficient to finance the capital expenditures necessary

to absorb those savings and so to maintain the level of the national income.

3. *The importance of profits.*—The importance of profits lies in the fact that the recipients of profits play the dominant role in determining the level of the national income. This is a consequence of the fact that the recipients of profits own or control the bulk of the accumulated capital and current savings as well as the major share of the funds currently set aside for capital replacement—depreciation, depletion, and amortization.

What, then, deters the recipients of profit income from always expending from the capital pool in their control a volume of funds sufficient to expand or to maintain the national income?

The findings of this study show that the answer to this question lies neither in the amount of profit income nor in the rate of return on capital. Factors other than the amount or the rate of profit have been the major determinants of the level of capital expenditures of groups of companies in the same industry, and, hence, of business as a whole. Of these other factors, the most important have been the level of output in relation to capacity and the pressure upon business for the introduction of available new technologies.

Hence the fundamental question can be rephrased to read: What has restricted the volume of output and the rate of introduction of new technologies so that all too frequently they have been inadequate to draw forth the volume of capital expenditures required to expand or to maintain the national income?

4. *The importance of the concentration of income and wealth.*—Concentration of income and wealth is the most important single factor leading to a volume of capital expenditures inadequate for the maintenance and expansion of the national income. The importance of concentration lies not in the fact that it leads to a high rate of savings. Rather the importance of concentration lies in the fact that savings are made by individuals and groups who do not or will not themselves consume the output of the capital goods which their savings can create. Consequently, if a decline in the national income is to be avoided, such savings must be invested in facilities destined either (1) to increase the consumption levels of others or (2) to take business away from existing facilities. The question, then, is: What prevents current and accumulated savings from being used in these ways?

5. *Concentration and shortages of consumer purchasing power.*—In order that the large volume of savings concentrated in the hands of individuals with high incomes be translated into capital expenditures, it is necessary that consumers obtain income sufficient to purchase the output of the expanded facilities. For, capital expenditures will not be made unless the output of existing facilities can be sold.

A constant volume of capital expenditures cannot provide consumers with a volume of the means of payment sufficient to purchase the expanding output of an expanding capital plant. While such volumes of expenditures increase productive capacity, they do not automatically provide for an increase in the means of payment to the consumers of the product. The consequence of this is that the level of the national income cannot be maintained unless (1) means of payment from sources other than the production of capital goods accrue to consumers or (2) prices decline so that the means of payment derived from total current production are sufficient to pay for an in-

creased output. But these have not always been of sufficient magnitude to prevent declines in the national income. And, sooner or later, a constant volume of capital expenditures proves inadequate to sustain itself, and, hence, to sustain the national income.

Thus, under actual operating conditions, the volume of capital expenditures must continuously increase if the national income is not to decline. And the evidence indicates that the rate of increase must be substantial. This means that the national income must rise at a fairly rapid rate or decline. There are no intermediate positions

Downward price movements may, of course, lower the rate of increase in capital expenditures required to prevent declines in activity. But in past periods of expanding activity prices have usually increased. Consequently, it has only been during periods in which very unusual factors, such as war, a high level of gold production, or a high favorable foreign-trade balance, have been operative that the national income has attained high levels.

It appears that the expansions which do get started under existing and recent income, savings, and investment circumstances must sooner or later come to a halt. For under such circumstances the increase in output of existing and new productive plant seems to outstrip the increase in consumer purchasing power, unless an adequate compensatory program intervenes.

Whether full use of resources will be attained under existing conditions before an expansion ends seems to depend upon special factors such as favorable foreign trade balances and domestic production of monetary metals. In the absence of such special factors or of an adequate compensatory program, even a reasonably close approximation to a full use of resources may not be attained, let alone maintained for any long period.

6. *Further effects of concentration.*—An increase in the degree of concentration of income and wealth raises the volume of capital expenditures required to prevent declines in the national income. This results from the fact that the volume of savings is less when losses and profits accrue to different groups than when they accrue to the same groups, even though profits net of losses are the same in both instances.

Not only does an increase in concentration raise the volume of capital expenditures required to prevent declines in activity, but it also lowers the outlets for such expenditures. This latter is a consequence of the fact that concentration limits the extent to which capital expenditures can or will be made for capital goods to take business away from existing facilities.

PART I

PROFITS OF THE CORPORATE SYSTEM AS A WHOLE

CHAPTER I

INTRODUCTION

A. THE CORPORATE SYSTEM

In this study, the corporate system is taken as a whole. No group of corporations is omitted. There appears to be no need for a detailed formal definition of the corporate system. In broad outline it is composed of all business functioning under corporate charters. The profit experience of practically all such businesses is covered by the statistics compiled by the Bureau of Internal Revenue from corporate tax returns. The Bureau's data cover the returns of financial corporations—banks, insurance companies, investment trusts, holding companies, etc.—as well as industrial, railroad, utility, and other types of corporations.

An empirical study of profits must of necessity be limited almost exclusively to the profits of corporations. While the Bureau of Internal Revenue does require tax returns from both corporate and noncorporate enterprise, the noncorporate material tabulated by the Bureau is not of sufficient scope and quality to permit of any systematic analysis. Furthermore, there is practically no information on the profits of noncorporate enterprise available from other sources.

Restricting the study to corporate profits automatically omits presentation of material covering most of the firms in the Nation. In recent years around 500,000 corporations have filed tax returns with the Bureau of Internal Revenue, while the number of firms listed by Dun & Bradstreet has averaged upward of 2,000,000.[1] Thus, the corporate system at the present time covers only about 25 percent of the firms of the country. But this figure does not provide a true indication of the importance of the corporate system in our economic life.

The corporate system has, at least since the World War, produced 60 percent or more of the net value of goods and services produced by all private enterprise. In most major lines of private enterprise the bulk of the business is done by corporations. In only a few areas—agriculture, finance, service, and trade—is the noncorporate share in excess of or comparable to the corporate share.[2]

The most acute problems of maintaining high levels of activity have arisen in connection with the corporate system, since fluctuations in the activity of the corporate system have been greater than in the noncorporate sphere of activity. The corporate share of income produced by private enterprise has been lower in years of depressed activity than in contiguous years of high activity.[3]

[1] Dun & Bradstreet release: Vital Statistics of Industry and Commerce. Data as taken from Investigation of Concentration of Economic Power, Hearings before the Temporary National Economic Committee 75th Cong., 3d sess., Part 1, exhibit No. 52, p. 277

[2] See appendix I, sec. D.

[3] See appendix table VI.

And the corporate system is important not only because of its volume of business and the greater instability of its operations, but also for another reason. It contains practically all of the giant enterprises in every line of business. While these giants are symbols of large-scale productive effort as developed to meet the large-scale needs of modern life, they are also symbols of the highly concentrated control over our economic life. It is clear even in the absence of exact figures that the number of control rooms per dollar of output and assets in the corporate system is very small in comparison with noncorporate business. And, in the half of the corporate system composed of the largest firms, the number of control rooms per dollar of output and assets is infinitesimal compared with the number in the rest of our economy.

Finally, the corporate area is the one in which the institutionalized techniques of preserving capital values and of exacting the maximum profits have been most highly developed. In addition to the efficiency and risk-bearing factors, the bases upon which capital values and profits are built are patent rights, price administration, advertising, statistics compiled by the Bureau of Internal Revenue from corporate control of raw materials, etc.; and these latter have been most extensively used and perfected by corporations, particularly by the larger ones. These specific techniques of attaining a preferred position in the economy are covered elsewhere in the testimony and reports of the Temporary National Economic Committee. In this report, the end results of the corporate system—profits and losses—are examined in terms of their role in and effects on the economy.

B. THE CHARACTER OF PROFIT MEASUREMENTS

Profit computations are designed to measure some or all of the end results of business operations. The appropriate method of computation in any particular case depends upon the uses to which the measurements are to be put.

In recognition of both the necessity and appropriateness of molding measurements to particular purposes, businessmen and others have designed their profit computations so that they will best serve their purposes. With variations in purpose, variations in the items of income and expense included or excluded occur as well as variations with regard to the accounting periods in which items are included. But, in spite of the fact that different companies, and even the same companies at different times, have used different methods of computation, all financial statements have been presented and handled, particularly in the available profit compilations, as if they were of the same type. The consequence of this is that the available measurements lack precision for almost any purpose other than the specific purposes for which they have been prepared. And of course the degree of comparability as between time periods for the same companies and as between companies is not necessarily great.

Revisions of the financial statements of individual companies based upon a detailed analysis of their records would be required to increase the precision and comparability of the available figures for the purposes for which they are needed in this study. Such revisions, of course, constitute an impossible task. It was necessary, therefore, to use the available materials in their existing forms, making only

such refinements and adjustments as were required to attain enough precision and comparability for the purposes for which they have been used.

It is the purpose of this section to present the general characteristics of the available profit measurements. More detailed comment will be introduced when such comment is germane to the substantive discussion. Technical aspects of the data are covered in the appendixes.

The all-inclusive measure of profit in terms of money for any accounting period is:

net value of assets at the end of the period
minus
net value of assets at the beginning of the period

plus

dividends and other equity capital disbursements during the period
minus
equity capital received during the period

all values being stated, of course, in money terms. But, as a practical matter, measurements of this kind are typically not made since (1) many of the money values required for the computations are indeterminate and (2) even if made, they would not be the most useful measurements for the vast bulk of businesses.

Most businesses want accounting data which will be useful to them in their current and future operations as "going concerns." For this purpose it would be meaningless to include in the annual statement of profit many of the items which would be included in a statement of profit prepared in accordance with the definition given in the preceding paragraph. To "going concerns," computations directed toward showing the annual operating profit or the more inclusive current income are far more useful than all-inclusive measurements and these are the computations which are made. As a consequence, it is from current income statements prepared in accordance with one set of accounting procedures or another that all of the available profit measurements are obtained.

Current income statements are based upon a distinction between capital and income. The attempt is made to show in the current income account only what has accrued to the owners of a business from current operations and to exclude any profits or losses resulting from changes in capital values. In other words, the current income statement as prepared in accordance with this principle is directed toward measuring the value of the addition to capital from current operations and not the total addition to the money value of capital.

But, in practice, this principle is not rigorously followed. Varying amounts of certain items of addition to the money value of capital are included in the current income account. Some of the more obvious items of changes in capital values are generally omitted as such, although they may appear as current income or expense in other forms. Other items of this character which are difficult to measure are typically included. The exact treatment in particular cases depends upon a host of practical considerations and is not uniform. For this reason,

it is worth while considering the general effects of some of the more important accounting rules upon the available data.

For instance, the effect of the procedures used in valuing current assets may be illustrated in terms of inventory accounting under the valuation rule of cost or market, whichever is the lower. Under this rule, realized gains are included in current income even though they result from changes in prices; but unrealized gains are excluded. On the other hand, both realized and unrealized losses are included. Consequently, a price increase during an accounting period is reflected in the current income statement for that period only to the extent realized, and is also reflected in later periods as well, if the price increase is maintained; on the other hand, a price decline is fully reflected in the current income statement for the period in which it occurs. It is this type of accounting which explains in part the fact that the volume of profit tends to expand gradually during periods of rising prices and to contract sharply during periods of declining prices.[4]

The extent to which changes in capital values of fixed assets are excluded from the current income account is much greater than the extent to which such changes for current assets are excluded. Generally unrealized capital value changes occurring during an accounting period are not recognized as current income and even when recognized enter into the accounts as surplus adjustments. As a consequence, many changes in values of depreciable assets are never entered into the current income account as such, although they may be reflected in the current income statements for various periods during the life of the assets. In another manner of speaking, the tendency is to enter in the current income account gains (other than those entered directly to surplus) from changes in capital values only when they are deemed to have been realized. For nondepreciable assets, unrealized changes in capital values are typically not reflected in the current income account either because they are not recognized or because when recognized they are shown as surplus adjustments.

Treatment of realized changes in capital values of fixed assets varies a good deal. The general practice appears to be to show them as current income, particularly in tax returns, but frequently they are carried to surplus directly. Furthermore, similar to the case of current assets, downward changes in capital assets are frequently recognized as such, but in this case they are carried directly to surplus.

[4] That the amount of inventory revaluations included in the current income accounts of all business has at times been extremely large is indicated by the following estimates for 1929-35:

[Millions of dollars]

Year	Inventory revaluations	Profits and losses	
		Including inventory revaluations	Excluding inventory revaluations
1935	785	3,382	2,597
1934	2,131	1,257	−874
1933	2,440	−881	−3,321
1932	−1,520	−6,193	−4,673
1931	−3,308	−3,718	−410
1930	−4,331	912	5,243
1929	−712	8,552	9,264

Source: The Conference on Research in National Income and Wealth, Studies in Income and Wealth, National Bureau of Economic Research, New York: 1937, vol. I, pt. 4, Kuznets, Simon, "Changing Inventory Valuations * * *", p. 152.

The practical reasons why businessmen handle their fixed asset accounts as they do are twofold: First, to avoid including in the current income account nonrecurrent items which would disturb the year-to-year comparability of the account as reflecting normal operations; and second, to avoid placing in the current income account changes in value of the "permanent" assets of a business which in any case do not appear to have any pertinence to "current operations."

The effects of the rules underlying current income accounting are, in the end, to provide measurements which tend to lie between the ideal all-inclusive profit measurements and the ideal current income profit measurements since changes in capital values reflect current output and the prices for which that output is sold. But the extent to which the actual measurements include the capital value changes must vary widely from period to period, since, for example, the extent of realization in particular periods depends upon a number of factors other than the change in capital values. It is necessary, therefore, in interpreting the available data to look closely at the economic activities out of which book entries in various years have arisen.

Compared with the ideal current income measurements, the available data tend obviously to exaggerate the extent of movements in profits. And this is particularly true during periods of decline, when the general attitude of conservatism leads to a charging off of unrealized as well as realized changes in values.

Because of the basis upon which the available data have been prepared, they do not provide, either for the short or long run, accurate measurements of profits. In spite of this, however, they can be used to show the general course of profit income, provided qualitative allowances are made and the figures are not interpreted as accurate measurements. But it is necessary at all times to avoid conclusions about the volume and movements of profits, the validity of which depend upon a high degree of precision in the figures.

For some purposes the current income statement computations tend to approximate the ideal measurements. For example, for the purpose of showing the flows of funds into and out of a business—and it must be recognized that such flows measure the direct impact of the operations of a business upon the economy—the entries in the current income account provide some ideal basic data. Of course, current income does not measure the net flow of funds, not only because of flows through the debt, capital, and cash accounts, but also because of the book charges to costs and income contained in the current income account. But if those book charges can be segregated, current income accounts do provide a major portion of the data necessary for determining flows of funds. And even when the book charges cannot be segregated, it is frequently possible to attain the major objective by supplementing the current income figures with data from asset and liability accounts.

C. NOTE ON THE INDETERMINACY OF PROFITS

In order to obtain measurements at all, it is necessary to have a measuring rod. In a money economy, the measuring rod used by business to measure profits and the underlying receipts and disbursements, is money value. There are, of course, other measuring rods which may be used, such as a "real" income or a "social" income rod. But to go beyond the money figures poses the problem either of converting money profit measurements into, for example, "real"

profit measurements or of making independent measurements of "real" profits. And this will not be attempted in this report except in a few instances.

A precise measurement of the money value of a good or a service can only result from a voluntary exchange between independent bargaining agents. And this money value applies only to the time at which the exchange of the good or service for money takes place. At other times, unless the money value of the good or service is fixed, it is an indeterminate quantity. That is, money value can be known only as a quantity which falls between the extremes of the various possible values.

Thus, the very nature of the environment in which business transactions take place, as well as the very nature of those transactions themselves, gives rise to the situation in which the vast bulk of business assets at any particular time and in which many items of expenditures and receipts during an accounting period do not have determinate money values. While many of the values required for profit computations are definitely determinate, many others cannot be measured precisely. As a consequence, profits, no matter what types of computation are dictated by their purposes, are not quantities which can be measured precisely.

This does not imply that profits are absolutely nondeterminate. Rather, the import is that, at best, only the limits between which an amount of profits falls can be accurately determined. The difference between the limits in any particular case depends, of course, upon the relative extent of the indeterminate values involved and upon the size of the ranges for those values. But within those limits, profits are indeterminate quantities.

The available financial statements do not provide the data necessary to compute or even to approximate the accurately measurable limits between which amounts of profit fall. They provide no complete segregation of the money values—not to mention descriptions of the transactions or procedures by which they are determined—required for profit computations into the three categories of (1) determinate money values based upon exchanges between independent bargaining agents; (2) interim approximations of portions of money values determinate only in the long run, such as those for depreciable and depletable property; and (3) arbitrary money values set in transactions between nonindependent bargaining agents such as those between a corporation and its controlling stockholder or in transactions which do not involve cash. In place of information of this type, the available records either ignore indeterminate money values or assign more or less arbitrary amounts to values for which only upper and lower limits can be known.

Unless the measurable limits can be computed, it is impossible to determine the validity of a specific profit calculation of the kind which is available. For, in that case, not only is it impossible to say what the limits are, but it is also impossible to say whether or not the specific calculation falls between those limits. And, in fact, there is every reason to believe that the available accounting records as summarized in tax returns and in reports to stockholders do not provide profit measurements which bear any consistent relation from year to year to the precisely measurable limits. Consequently, such measurements can only purport to be crude approximations of the money profits of corporations or of the corporate system.

CHAPTER II

DOLLAR VOLUME OF CORPORATE PROFITS

A. THE HISTORICAL RECORD

Historically, changes in the volume of profits, in the national income, and in business activity have been in the same direction. This is shown by the figures in table I, which are plotted on chart I. Thus, the profit figures reflect the recessions in business activity in the years 1909, 1911, 1914, 1924, and 1927, the greater depression of 1929–32, the World War boom and ensuing 1920–21 collapse, the expansion of the twenties, and the expansion during 1932–37. However, while profits, national income, and business activity have moved in the same direction, fluctuations in business activity and in the national income have been much smaller than the corresponding fluctuations in profits.

TABLE I.—*Profit volume of the corporate system, 1909–37*

[Millions of dollars]

Year	Compiled net profit	Intercorporate dividends received	Net profit after intercorporate dividends	Federal income and profits taxes [1]	Net profit after intercorporate dividends and taxes
1937	7,830	2,682	5,148	1,276	3,872
1936	7,771	2,677	5,094	1,191	3,903
1935	5,423	3,014	2,409	735	1,674
1934	2,970	2,217	753	596	157
1933	−930	1,026	−1,956	423	−2,379
1932	−3,829	1,266	−5,089	286	−5,375
1931	−777	1,969	−2,746	399	−3,145
1930	4,649	2,571	2,078	712	1,366
1929	11,870	2,593	9,277	1,193	8,084
1928	10,667	1,917	8,750	1,184	7,566
1927	8,669	1,658	7,011	1,131	5,880
1926	9,510	1,506	8,004	1,230	6,774
1925	9,316	1,175	8,141	1,170	6,971
1924	6,795	915	5,880	882	4,998
1923	7,634	870	6,764	937	5,827
1922	5,967	803	5,164	784	4,380
1921	1,225	509	726	702	24
1920	6,499	531	5,968	1,625	4,343
1919	8,858	376	8,482	2,175	6,307
1918	8,133	421	7,712	3,159	4,553
1917	10,084	600	9,484	2,142	7,342
1916	8,080	500	7,580	172	7,408
1915	4,500	360	4,140	57	4,083
1914	2,760	350	2,410	39	2,371
1913	3,770	380	3,390	43	3,347
1912	3,800	340	3,460	35	3,425
1911	2,880	320	2,560	29	2,531
1910	3,260	320	2,940	34	2,906
1909	2,890	270	2,620	21	2,599

[1] Including war, excess and undistributed-profits taxes.

Sources and methods: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods, see appendix 1, sec. A.

Chart I

PROFIT VOLUME OF THE CORPORATE SYSTEM, 1909-1937

Sources and Methods: See Table I and Appendix I, Section A

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The corporate system attained its largest profit volume during the 4 years 1916–19 and the 5 years 1925–29. These were the periods of greatest economic activity our economy has ever known. They were the periods in which the fullest use of resources was attained. During the World War period, profits before Federal income and profits taxes averaged 8.2 billion dollars; during the New Era period, 8.3 billion dollars. But while dollar profits before Federal income and profits taxes were approximately the same in both periods, dollar profits after taxes were lower during the World War period. This was due to the higher taxes levied on corporate profits during the war period. Profits after taxes averaged 7 billion dollars during 1925–29 as against 6.4 billion dollars during 1916–19. In no year outside these two periods have the profits of the corporate system approached the 8 billion dollar level before taxes or the 6.4 billion dollar level after taxes.

During the entire period since 1909 the corporate system has shown losses for only 3 years. These were the years 1931–33, when the corporate system showed an average loss of 3.3 billion dollars before taxes and 3.6 billion dollars after taxes. And these were the years of greatest unemployment our economy has ever known. In only 2 other years, 1921 and 1934, during the period covered did the corporate system come close to zero profits. In 1921 profits after taxes were about 25 million dollars and in 1934 about 160 million dollars; profits before taxes in those 2 years were 730 and 750 million dollars, respectively.[1]

One of the anomalies of our economy has been that years of high profits have not invariably been followed by years of high levels of national income, of employment, or of profits. This indicates that large profits, in and of themselves, are not sufficient for the continuance of a high level of national income. High profits had been attained in the periods 1912–13, 1919, 1923, 1925–26, 1928–29, and 1936–37 after expansion from the low levels of the preceding periods of recession or depression. Yet each of these high profit periods was followed by a decline in the national income. Furthermore, each of the two periods of greatest corporate profits, 1916–19 and 1925–29, was followed by an unprecedented decline in business activity.

Similarly, years of low profits have not invariably been followed by years of low levels of activity and of profits. This indicates that low profits, in and of themselves, cannot be responsible for a continuance of a low level of national income. Each of the low profit periods, 1909, 1911, 1914, 1921, and 1930–34, was followed by a rise in business activity.

All this implies neither that high profits retard and low profits stimulate business activity nor that the volume of profits has no influence on the national income. But it does mean that factors other than the volume of profits are at least at some times the major determinants of the level of the national income.

[1] This does not mean, of course, that Federal income and profits taxes absorbed almost all of the net profits of corporations paying such taxes. Corporations subject to such taxes reported net profits (including tax-exempt income) of 4.8 billion of dollars in 1934, and probably of about 4 billion dollars in 1921. See appendix table XXV.

B. HISTORICAL FACTORS UNDERLYING HIGH AND LOW PROFITS

The unprecedented profits of 1916–19 were associated with the activity growing out of the World War. Corporate profits before Federal income and profits taxes increased from an average of 3 billion dollars during the 5 pre-war years, 1910–14, to an average of 8.2 billion dollars during the war period. This forward surge of profits was, of course, the direct result of the huge demand of the Allied powers and of our own Federal Government for war materials.

War purchases by both governmental and private parties were largely independent of their current incomes. They were financed largely by means of an expansion of both Government and private debt. In this country the banking system handled the Federal Government's borrowing as well as private borrowing through the previously created Federal Reserve System's mechanism of credit creation or, more appropriately, of converting latent to spendable purchasing power. As a consequence, as full employment was approached and the creation of spendable purchasing power continued, there were rapid price rises. These price increases not only were heavily reflected in current income accounts, but also gave rise to a huge volume of capital gains. When realized, such capital gains were spendable just as if they were current income derived from the current production of goods and services and not merely derived from the current production of money values.

Following the close of the war, Government purchasing tapered off and by 1921 had been reduced to "normalcy." Business activity, and with it, net profits of the corporate system dropped sharply, the latter being almost completely wiped out in 1921. The structure of values based upon wartime spending collapsed with the termination of wartime spending. The process of converting latent to spendable purchasing power ceased, and a large part of the purchasing power previously created was wiped out.

As in the war period the high profits of the New Era were the result of a huge demand which was created independently of income arising out of current production. But the New Era period differed from the war period in that the sources of such demand were more varied. While in the war period the overwhelmingly important source was the spending of the Allied Powers and of our own Federal Government, in the New Era period the major sources of demand independent of current income were:

1. Residential housing construction.
2. Outlays of State and local governments (partially offset by the debt retirements of the Federal Government).
3. Favorable foreign trade balances.
4. Consumer credit expansion.
5. Capital outlays required for the expansion of the electric light and power, telephone, and railroad industries (and to a lesser extent other industries).
6. Capital gains which were realized on a large scale in the real estate and securities markets.

The mechanism by which the debt expansion and the conversion of latent into spendable purchasing power was carried out was, of course, the same in the New Era and the war periods. But the important point is that in both periods large segments of the economy were willing to spend not only over and above their current income but also

over and above all of their available liquid funds. The financial mechanism made it possible for these segments to spend amounts in excess of what other segments were saving out of their current income.

The end of the New Era profits was ushered in when the sources of spending in excess of current income began to dry up. Residential construction reached a peak in 1925; railroad construction in 1926. Industrial expansions which had been completed by 1929 found no corresponding demand for their products and additional expansions were not undertaken. The collapse of the speculative security markets in late 1929 not only destroyed capital gains but converted them into heavy losses so that consumption spending out of current income was deemed by many to be spending out of accumulated savings and hence to be curtailed as much as possible. Liquidation of inventories previously accumulated began and with it the inevitable increase in unemployment. With declining consumer incomes, consumer credit not only ceased expanding but began to be liquidated. Later the favorable foreign trade balance dropped to very low levels and the capital outlays of public utilities began to decline. Government spending in excess of current revenue increased, but not enough to offset the declining volumes of such spending from other sources. Business activity and profits spiraled to the deep depression levels of 1932.

In 1931 the corporate system for the first time since the inception of the tax on corporate incomes showed not only a loss but a large loss. In the 3 years 1931–33 the corporate system showed total losses of almost 11 billion dollars in contrast with total profits after taxes of 21.5 billion dollars in the 3 years 1927–29. Net profits after taxes declined from 8 billion dollars in 1929 to minus 5.4 billion dollars in 1932—a decline of 13.4 billion dollars.[2]

The unprecedented 13.4 billion-dollar decline in profits between 1929 and 1932 was followed by an unprecedented expansion in profits between 1932 and 1937. With the rising national income, profits after taxes increased from a net loss of 5.4 billion dollars in 1932 to a net gain of 3.9 billion dollars in 1937. This 9.3 billion-dollar increase represents the greatest expansion in net profit which has ever occurred over any comparable number of years, not excepting the expansion from the 1921 depression to the 1929 boom level.

During the recovery following 1932 the Federal Government was by far the most important source of spending in excess of current income. (Such spending by the Federal Government was partially offset by debt retirements of State and local governments.) A second major source of such spending was the expansion of consumer credit at an accelerating rate throughout the period. Business capital outlays and inventory accumulations, while they increased tremendously during the recovery, do not appear to have involved increases in business debt except possibly for a brief period in 1936–37. And while outlays on residential housing increased, they remained far below the level of the twenty's and do not appear on balance to have been in excess of the amounts necessary to provide the equivalent of sinking fund accumulations for capital replacements.

[2] In interpreting the profit data in table I, it should be remembered that the losses of corporations with losses have been deducted from the profits of corporations with profits to obtain the profits of the corporate system net of losses. Consequently, the large losses for the 3 years 1931–33, do not mean that every corporation sustained a loss. Even in 1932, profits (including tax-exempt income) of corporations with profits totaled between 2.5 and 3.7 billion dollars. See appendix table XXV.

C. CONSISTENCY OF CORPORATE PROFITS

The data in table I indicate clearly that the corporate system has consistently reported substantial profits to its stockholders. In only 3 years—1931, 1932, and 1933—did the corporate system report net losses; the net losses of these 3 years totaled almost $11,000,000,000. And only in 2 other years—1921 and 1934—were corporate profits near the break-even level—$25,000,000 in 1921 and $160,000,000 in 1934. In all other years the corporate system reported net profits well above the break-even point.[3]

Net profits reported by the corporate system for the whole 29-year period, 1909–37, after deducting intercorporate dividends and taxes and after deducting the losses of 1931–33, totaled almost $102,000,000,000. Thus, corporate profits averaged about 3.5 billion dollars per year during this 29 year period.

But these figures understate the volume of profits. Not only do they take full account of losses occurring through bankruptcy and liquidation but they also include some double counting of such losses. This occurs when a corporation loses more than its net worth since, in that case, not only does it report the full deficit but creditor corporations report the bad debt losses incurred as expenses. And, of course, the figures tend to understate profits because they were originally prepared for tax purposes.

There is an alternative computation of profits which, although necessarily based upon very crude figures, confirms the conjecture that the annual profit figures understate the total profits for the period. Such a computation requires data on dividend payments, net worth at the beginning and end of the period, and the issue and retirement of equity capital; of these only the dividend figures are reasonably adequate, while the remaining figures are extremely crude.

The net dividend outgo of the corporate system [4] during the period 1909–37 was $93,000,000,000. As the corporate system reported $102,000,000,000 of net profits, this indicates that retained profits were only $9,000,000,000. But other data indicate that the $9,000,000,000 figure for total retained profits is much too low.

An examination of the balance sheet data reveals that the net worth of corporations reporting to the Bureau of Internal Revenue increased by about $94,000,000,000 [5] during the 29 year period. Increases in net worth must come from either (1) net equity capital contributions or (2) retained profits, including capital gains. Stock issues, both new and refunding, reported during the 1909–37 period totaled $28,000,000,000.[6] Even if it is assumed that the whole of this $28,000,000,000

[3] Certain segments of the corporate system—particularly the larger corporations—of course, show far greater consistency in reporting profits than does the corporate system as a whole. For example, during the 3 years, 1931 to 1933, when the corporate system as a whole reported losses, 951 industrial, utility, and railroad corporations tabulated by the Standard Statistics Co., Inc., reported profits net of losses; even in 1932 these 951 corporations reported a total of $375,000,000 of profits net of losses. During the years 1926 to 1929, inclusive, they accounted for around 45 percent or more of all corporate profits; in 1930, around 75 percent or more; and in 1937 around 50 percent or more. Data showing not only the greater stability of profits of the larger corporations but also the large and disproportionate share of all profits accounted for by relatively few corporations are contained in appendix tables XXVI, XXVII, and XXVIII.

[4] See table VI, *infra*.

[5] See table II, infra. The 1909 figure is on an unconsolidated basis and the 1937 figure largely on an unconsolidated basis. The latter, however, includes capital reserves, whereas the extent to which the former does is not known (see appendix I, sec. B). For this discrepancy and possible undercoverage in the 1909 figure, an adjustment of almost $3,000,000,000 was made in the 1909 figure.

[6] See appendix, table IV.

represents additional equity, net of retirements,[7] created through the sale of stock to individuals, there still remains an indicated increase in net worth of $66,000,000,000 to be accounted for. Included in this $66,000,000,000 residual are the unreported additions to equity capital represented by (1) the private distribution of new stocks in exchange for unincorporated businesses and assets and in exchange for services and (2) intercorporate exchanges of new stock for assets of one kind or another. Since the corporate system held such a large share of the total business assets in 1909, it is inconceivable that any large proportion of the $66,000,000,000 represents increases in net worth resulting from the private distribution of new stocks to individuals. And, in view of the relatively small amount of intercorporate ownership of equities, it does not appear that intercorporate exchanges of new stock for assets could account for any major share of the $66,000,000,000.[8]

On the basis of the available data, it is, of course, impossible to obtain any precise estimates of the unreported additions to equities. But if they totaled as much as the 28 billion dollars of the reported stock issues, this would still indicate retained profits after all losses of more than 35 billion dollars in place of the 9 billion dollars indicated by the annual net profit figures. And this would imply a 4.5-billion-dollar rather than a 3.5-billion-dollar annual average of net corporate profits during the 29-year period.

On the whole, therefore, it may be concluded that the 3.5-billion-dollar figure for the average annual net profit of the corporate system derived from the reported annual net profit figures is a minimum figure. The alternative computation shows that the average annual net profit for the period, over and above all losses, was probably in excess of 4.5 billion dollars during the past three decades.

[7] Retirements, as the term is used here, include only stock purchases by corporations which are shown on their books as reductions of net worth.

[8] At the end of 1937, investments other than Government obligations reported by all corporations totaled $85,000,000,000. These investments include bonds, mortgages, loans, real estate, etc., as well as stocks. Investments other than stocks held by banks, insurance companies, and building-and-loan associations would account for at least $40,000,000,000 of the $85,000,000,000 of investments, leaving at the very most $45,000,000,000 of intercorporate holdings of equities. This is obviously a grossly exaggerated figure. Furthermore, it should be noted that some of the intercorporate holdings of equities are included in the $28,000,000,000 stock issue figure.

CHAPTER III

THE RATE OF RETURN

A. THE CHARACTER OF BOOK VALUES OF EQUITY

To measure the profit rate it is necessary to obtain two figures: The amount of profits and the amount of capital employed. The capital base which will be used in this discussion is net worth or the equity of stockholders. The only figures available measuring the net worth of the corporate system as a whole are those of the book value of net worth reported to the Bureau of Internal Revenue. These figures were not prepared on the same basis by all reporting corporations; but, as there is no method of adjusting for the heterogeneity of the book data to bring them to a common base, the book figures must be taken as they stand.

Net worth, as recorded on corporate books, bears very little, if any, consistent relation, as one might expect, to cost, whether cost be defined as actual cost to the current owner, original cost, or replacement cost. In other words, net worth figures taken from corporate books bear no consistent relation to what a corporation actually received from investors (including retained profits) or to what a predecessor company received from investors or to what a new corporation would have to receive to duplicate the existing corporation. In addition, the book values are based to an unknown extent upon money values set in exchanges between nonindependent bargaining agents.

A book net worth figure is, by and large, what a corporation (or rather the particular individual or group of individuals controlling policy in this regard) finds it necessary, convenient, or desirable to have as a net worth figure. While small deviations from the desirable figure may be tolerated, large ones usually are not. For this reason, surplus adjustments, reorganizations, intercorporate trading of assets leading to changed valuations, inconsistencies in classifying expenditures as capital or expense items, changes in depreciation charges, etc., are constantly occurring.

Table II shows estimates of net worth based upon official tabulations of the Bureau of Internal Revenue. These estimates include duplications as a result of the failure to eliminate the equity holdings of one corporation in another. It would have been preferable to obtain net worth exclusive of intercorporate equities but this could not be done. The next best thing was net worth estimates corresponding to net profits before intercorporate dividends. The profit figures to be used in computing profit rates are, therefore, those shown in table I before the elimination of intercorporate dividends.

TABLE II.—*Net worth and indicated book changes in valuation for the corporate system, 1909–37*

[Millions of dollars]

Year	Net worth end of year (end of year valuation)	Net worth beginning of year			Indicated book change in valuation	
		End of year valuation	Beginning of year valuation	End of 1923 valuation	During year	To beginning of year from end of 1923
1937	[1] 147,563	[1] 147,763	[2]	[2]	[2]	[2]
1936	141,363	141,609	[2]	[2]	[2]	[2]
1935	151,577	152,679	[2]	[2]	[2]	[2]
1934	148,147	150,597	[2]	[2]	[2]	24,982
1933	134,738	139,065	139,476	114,083	−411	25,393
1932	139,476	147,453	151,245	122,060	−3,792	29,185
1931	151,245	158,229	166,449	129,044	−8,220	37,405
1930	166,449	169,169	164,609	131,764	4,560	32,845
1929	164,609	155,695	146,741	122,850	8,954	23,891
1928	146,741	140,850	135,425	116,959	5,425	18,466
1927	135,425	132,572	122,088	114,106	10,484	7,982
1926	122,088	118,533	118,146	110,551	387	7,595
1925	118,146	113,942	113,553	106,347	389	7,206
1924	113,553	111,113	103,907	103,907	7,206	0
1923	103,907	100,643	100,720	100,643	−77	77
1922	100,720	98,354	98,430	98,277	−76	153
1921	98,430	100,761	96,975	100,608	3,786	−3,633
1920	96,975	94,494	88,280	98,127	6,214	−9,847
1919	88,280	83,026	75,711	92,873	7,315	−17,162
1918	75,711	73,480	----------	90,642	----------	----------
1917	----------	----------	----------	85,870	----------	----------
1916	----------	----------	----------	80,180	----------	----------
1915	----------	----------	----------	77,827	----------	----------
1914 [3]	----------	----------	64,071	77,222	----------	−13,151
1913 [3]	64,071	62,439	61,738	75,590	701	−13,852
1912 [3]	61,738	59,359	60,067	73,211	708	−13,144
1911 [3]	60,067	59,050	57,886	72,194	1,164	−14,308
1910 [3]	57,886	56,403	52,371	70,711	4,032	−18,340
1909 [3]	52,371	50,728	----------	69,068	----------	----------

[1] Includes capital reserves not included for earlier years.
[2] Available figures omitted because of lack of comparability with other data.
[3] Reliability less than for later years.

Sources and methods: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods see appendix I, secs. A, B, and C.

Intercorporate equities included in the data expanded greatly in the mid and late twenties, probably to a lesser extent in prior years, and probably remained fairly stable from 1930–33. The large increase in the equities reported as of the end of 1935 over the amounts reported as of the end of 1933 is largely the result of the provision in the Revenue Act of 1934 which withdrew the privilege of filing consolidated returns from all corporations other than railroads. This increase indicates that, exclusive of railroads, there was between $15,000,000,000 and $20,000,000,000 of intercorporate equities reflected in the figures for 1934 and 1935 but not reflected in the figures for the early thirties. Since 1935, the volume of such duplications has been reduced. Such a reduction is indicated by the $10,000,000,000 difference between the figures reported for the end of 1935 and the end of 1936. The major reason for this reduction was the desire of corporations to avoid the tax imposed upon intercorporate dividends by the revenue acts of 1934 and subsequent years. The increase between 1936 and 1937 shown by the figures is due mainly to the inclusion of capital reserves as a part of surplus in 1937.

The net worth as of the end of the year figures shown in table II are the basic estimates. They are the figures reported (after adjustments explained in appendix I) as of the end of the year. To obtain figures for the beginning of year net worth on an end of year valuation basis, retained profits and stock issues were subtracted from the basic estimates. To obtain figures for the beginning of year net worth on a beginning of year valuation basis, the basic estimates were moved forward 1 year. Thus, the difference between the beginning of year net worth on a beginning and an end of year valuation basis, provides a rough figure for book changes in net worth during the year not accounted for by stock issues and retained profits figures. Figures on an end of 1923 valuation basis were obtained by cumulative addition (or subtraction) of retained profits and stock issues forward (or backward) from the reported end of 1923 book net worth. Thus, the difference between this series and the others provides a rough measure of the cumulated book changes in net worth over a period of years which are not accounted for by stock issue and retained profit figures. The data are plotted in chart 2.

The terms "book changes in valuation" and "revaluation" are used here to denote changes in net worth occurring upon corporate books for reasons other than the reinvestment of profits and the issue or retirement of stock for cash or property.

The indicated changes in valuation as shown in table II and chart 2 are only rough approximations for four main reasons. First, the retained profits figures are based upon net profits reported for tax purposes which are generally recognized as being biased downward. Second, the stock issue series does not include all stock issues for cash or property. For the Commercial and Financial Chronicle series, such exclusions, exclusive of intercorporate purchases of new issues, have been estimated as running about 20 percent of those publicly offered for cash;[1] for the Journal of Commerce series, the extent of the exclusions is not known. Third, no allowance was made for stock issues retired during each year. This omission offsets to some extent the biases in the preceding two items. And, fourth, the figures include duplications resulting from double reporting when new corporations replace old ones such as in consolidations and reorganizations.

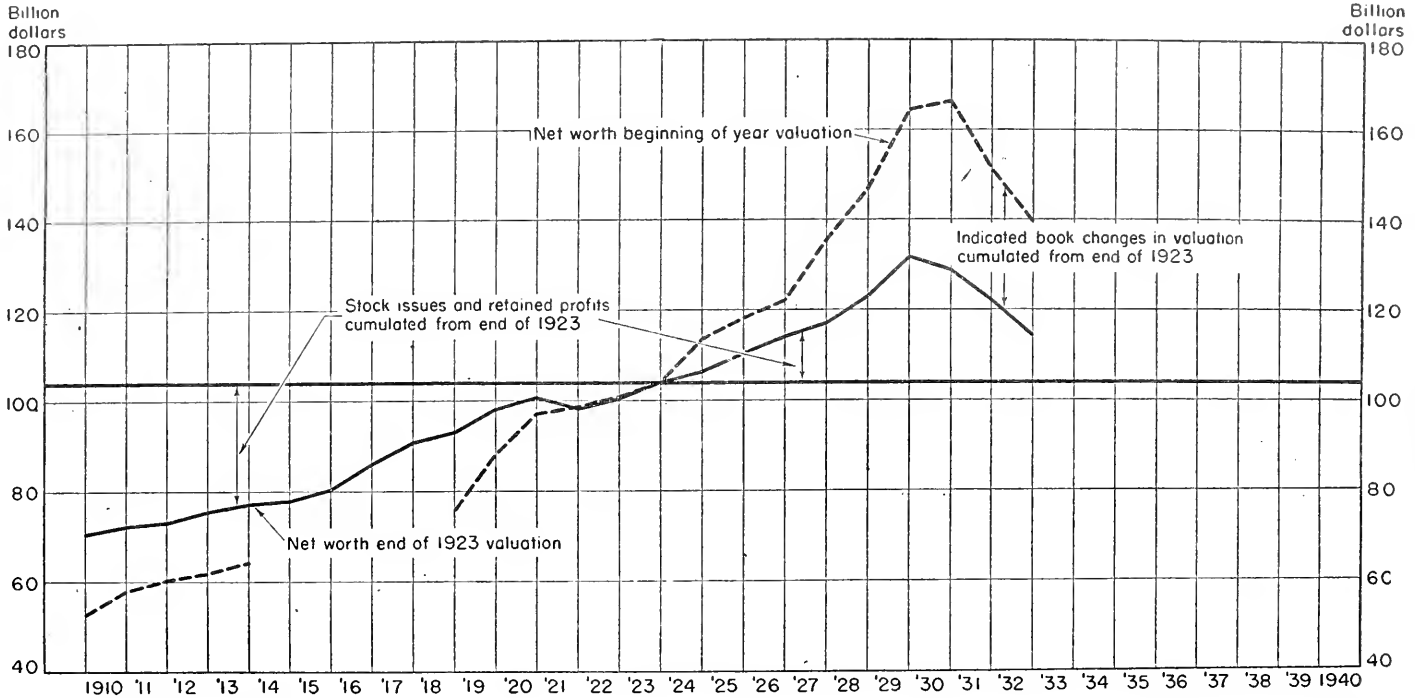
Rough as the estimates are, they indicate, after due allowance is made for errors, that substantial revaluations have occurred. Valuation changes of as much as $5,000,000,000 or more in a single year have apparently not been unusual. It must be pointed out, however, that these changes, though large in dollar terms, were never as much as 10 percent of the contemporaneous net worth figure. It is for this reason that comparability of profit rates over the short run is not entirely destroyed.

More important than the valuation changes made during any one year are the cumulated changes over a period of years. Cumulation of the changes indicates an upward valuation change between the end of 1923 and the end of 1930 of $37,000,000,000, and a downward valuation change of about $12,000,000,000 in 1931 and 1932. Between the end of 1912 and the end of 1923, there was an indicated upward valuation change of $14,000,000,000. These are large not

[1] Nerlove, S. H., A Decade of Corporate Incomes, 1920–29. The University of Chicago Press. 1932, p. 72, last footnote to table B.

Chart 2

NET WORTH AND INDICATED BOOK CHANGES IN VALUATION OF THE CORPORATE SYSTEM, 1910-1933



Sources and Methods: See Table II and Appendix I, Sections A, B, and C

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only absolutely but also percentagewise. Between 1923 and 1930, the indicated valuation change was about 35 percent and between 1912 and 1923, almost 25 percent of the intitial book net worth. In contrast with these large upward revaluations, the downward revaluation during the 3 years 1931–33 was less than 10 percent of the end of 1930 net worth. For recent years, no estimates can be made since the elimination of consolidated returns (except for railroads) and the tax on intercorporate dividends under the Revenue Acts of 1934 and subsequent years has wrought marked changes in the way the figures are reported.

The magnitude of the cumulated revaluations makes it clear that over a relatively long period the cumulated book changes in valuation may leave practically no significance to be attached to fairly large differences in or to a relative stability of profit rates. For example, if all of the indicated book changes in valuation are attributed to revaluations and making a substantial allowance for error, there is an indication that from the pre-war period to the end of the New Era well over half of the change in book value of corporate net worth was the result of book changes in valuations. This, of course, introduces a substantial downward bias in the rate of return figures during the war and New Era periods.

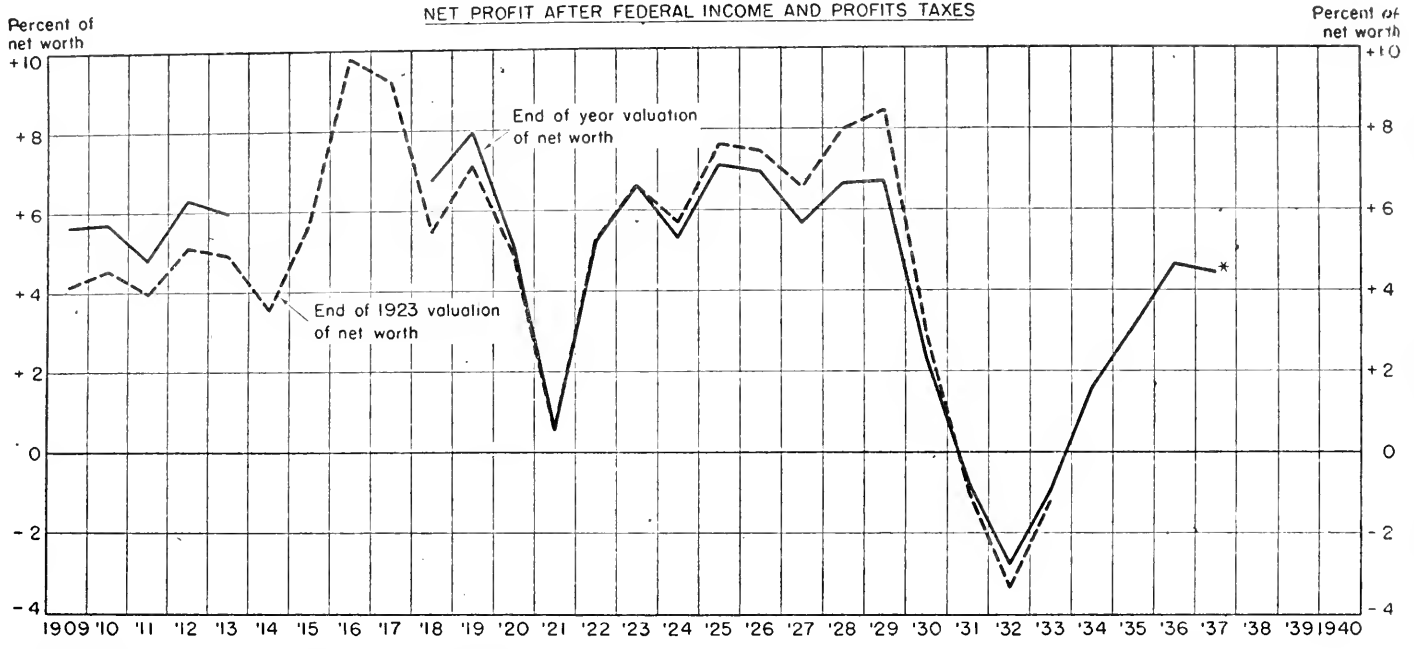
B. THE HISTORICAL RECORD

Technically, the most valid profit rate computation from the figures developed in this report is one based upon net worth on the end of year valuation basis. This is so because both balance-sheet and income account data cover the same corporations and are prepared in accordance with the same accounting procedures. For the beginning of year valuation figures this is not true since a given corporation may change accounting procedures from one year to the next and since the same corporations do not report in each year. But the error resulting in the net worth figures is likely to be small. Net worth figures on the end of 1923 valuation basis are, of course, subject to much greater error; still it is believed that they do provide a valid basis for indicating the course of net worth exclusive of revaluation changes.

Profit rates computed from data previously discussed are shown in table III and plotted in chart 3. In order to obtain a closer approximation to the equity capital used during the year, one-half the stock issues were added to the figures for each year for the purpose of computing the profit rates. N adjustments were made for the returns covering less than a full year's operations but they appear to be of relatively minor importance. The absence of such adjustments tends to bias the rate of return figures downward.

Chart 3

PROFIT RATE ON NET WORTH OF THE CORPORATE SYSTEM, 1909-1937



* Net worth for 1937 includes capital reserves excluded in earlier years

Sources and Methods: See Tables I and II and Appendix I, Sections A, B, and C

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TABLE III.—*Profit rate on net worth of the corporate system, 1909–37* [1]

[Percent of beginning of year net worth]

Year	Net profit before taxes [2]			Net profit after taxes [2]		
	End of year valuation of net worth	Beginning of year valuation of net worth	End of 1923 valuation of net worth	End of year valuation of net worth	Beginning of year valuation of net worth	End of 1923 valuation of net worth
1937	[3] 5.29			[3] 4.42		
1936	5.48			4.64		
1935	3.55			3.07		
1934	1.97			1.58		
1933	−.67	−.67	−.81	−.97	−.97	−1.18
1932	−2.60	−2.53	−3.14	−2.79	−2.72	−3.37
1931	−.49	−.47	−.60	−.74	−.71	−.91
1930	2.74	2.81	3.51	2.32	2.38	2.97
1929	7.46	7.91	9.40	6.71	7.11	8.46
1928	7.48	7.74	8.99	6.65	6.91	7.99
1927	6.50	7.05	7.54	5.65	6.13	6.56
1926	7.98	8.01	8.56	6.95	6.97	7.45
1925	8.13	8.16	8.71	7.11	7.13	7.62
1924	6.09	6.51	6.51	5.30	5.67	5.67
1923	7.56	7.55	7.56	6.63	6.62	6.63
1922	6.05	6.04	6.05	5.25	5.25	5.26
1921	1.22	1.27	1.23	.53	.55	.53
1920	6.84	7.32	6.59	5.13	5.49	4.94
1919	10.57	11.58	9.46	7.97	8.74	7.14
1918	11.05		8.96	6.76		5.48
1917			11.71			9.22
1916			10.03			9.81
1915			5.77			5.70
1914 [4]		4.30	3.57		4.24	3.52
1913 [4]	6.02	6.08	4.97	5.95	6.01	4.92
1912 [4]	6.35	6.28	5.16	6.29	6.22	5.11
1911 [4]	4.86	4.96	3.98	4.81	4.91	3.94
1910 [4]	5.76	6.20	4.60	5.70	6.14	4.55
1909 [4]	5.66		4.17	5.62		4.14

[1] Net profit includes intercorporate dividends and net worth includes intercorporate equities.
[2] Federal income and war, excess, and undistributed profits taxes.
[3] Net worth figure includes capital reserves not included in net worth for other years.
[4] Reliability less than for later years.

Sources and methods: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods see appendix I, secs. A, B, and C.

Judging from the profit rates based upon year end book values, the corporate system has usually earned a moderate rate of return or better for stockholders. Since the war the profit rate after Federal income and profits taxes has, except in 1925, been under 7 percent.[2] During the war period, of course, the profit rate was considerably above this figure. While the data are neither as reliable nor as extensive for the pre-war years, they do indicate that profit rates prior to the World War were roughly comparable to the New Era level.[3] Thus, through trust making, trust busting, and the turmoil of war inflation and deflation the corporate profit rate based upon contemporaneous valuations of equities tended to remain within the 5 to 7 percent range. And in 1936 and 1937, after recession, depression, and recovery, the profit rate again approached the same level. But all these rates are based upon book values adapted to the current corporate situation.

Using the beginning of year valuation of net worth as the basis for the profit rate computation does not change the picture much. Over

[2] Certain segments of the corporate system, of course, consistently report much higher rates of return than does the corporate system as a whole. For example 406 industrial corporations tabulated by Standard Statistics Co., Inc., averaged about 11.5 percent on their contemporaneous net worth in 1928 and 1929 and over 10 percent in 1937. See appendix table XXIX.
[3] See appendix table XXIII.

the period for which comparable data are available, i. e., through 1933, profit rates have tended to be somewhat higher and loss rates somewhat lower on the beginning of year than on the end of year valuation basis. But the fluctuations have been of about the same character.

Profit rates based upon the end of 1923 valuation show a movement entirely different from those based upon either the beginning or the end of year valuations. Instead of holding within the 5 to 7 percent range, by and large, during periods of moderate business activity or better, they show a generally rising movement between the pre-war period and the New Era periods. Prior to the World War, profit rates after Federal income and profits taxes based upon the end of 1923 valuation of equity fluctuated around a 4.5 percent level; in the New Era period, around a 7.5 percent level.

It is clear that book changes in valuation over fairly long periods have marked effects upon profit rates. Because of this, it is difficult, if not impossible, to determine the significance of a particular level or movement of profit rates as measured from the Bureau of Internal Revenue data.

In spite of these valuation difficulties, however, the data are useful, provided the inherent nature of book value data is not neglected. The usefulness arises in terms of the factors and accounting mechanism which lead to particular profit volumes and rates being shown by corporate books. And this is largely a question of the factors which make particular net worth figures necessary, convenient, or desirable for corporations and which determine whether particular items of income and cost are carried through the income account to net worth.

C. EARNING POWER AND BOOK VALUES

The reasons for book changes of net worth figures are complex. In general, it appears that such changes in net worth result largely from changes in earning power of corporations or in what certain individuals believe the changes in earning power to be. There are, of course, certain accounting practices that are generally adhered to by most corporations. Cost less depreciation, depletion, and obsolescence, with regard to capital assets, and cost or market, whichever is the lower with regard to inventories, are among those practices most generally followed. But, when desired, even the effects of these strongly entrenched customs can be overcome—by the appraisal method, if necessary. And, even an appraisal is not entirely independent of the earning power believed to exist in assets. Furthermore, for some types of assets there are no cost figures which are independent of ideas about earning power. On what, for example, are the book values of land, patents, and copyrights based? or the price paid by one corporation for the business of another? In all such cases, the guiding criteria are tied to opinions as to earning power.

The specific factors leading to revaluations via their effects on money earning power, and their relative importance, are difficult to determine. In the case of an individual company there are many—price changes, demand changes, changes in technology, changes in monopolistic position, changes in accounting procedures (voluntarily adopted or prescribed by governmental bodies), management changes, changes in financial control, and so forth. For the system as a whole, it appears that marked changes in price level—particularly in prices

of capital goods, including land and other natural resources—which are maintained over fairly long periods are the major factors accounting for book changes in valuation. When the new price level persists over a fairly long period, significant net revaluations of the assets of the corporate system tend to occur either as book write-ups or write-downs or as a result of intercorporate transfers of assets.

Only small differences between profit rates on the beginning and on the end of year valuations arise, because the volume of revaluation for the corporate system in any one year is small relative to total net worth. Significant revaluations by any one corporation occur very infrequently—certainly not at a greater rate than once every few years or even a decade.[4] Furthermore, revaluations of major magnitude are generally not made in terms of the short-run environment of a corporation, but rather after a fairly long history of operations inconsistent with book values. Custom appears to endow figures once put on the books with a large amount of sanctity. Consequently, a backlog of contradictions between the entrenched book figures and the operating results must be built up before revaluations occur. And since different corporations have different histories and different individuals have different sensitivities, revaluations tend to be sporadic for individual corporations (whether internal or as a result of intercorporate asset transfers) and spread out over long periods in the mass.

Thus, it is between the profit rates based on the end of 1923 valuation and the profit rates based upon either the beginning or the end of year valuation that the major differences occur. Conditions conducive to revaluations in one direction must exist for a relatively long period before the cumulated revaluations begin to have a significant effect upon corporate profit rates. Sharp price changes, for example, would not lead to revaluations until after a new level had been maintained for some time or prices continued to move in the same direction as the original movement for some time.

The necessary conditions for mass revaluations existed from some time during the World War period through 1933 or 1934. Since 1933 the picture has not been clear. But it is doubtful that conditions have been of a type conducive to large net revaluations for the system as a whole. For example, there probably was a backlog of write-downs growing out of changes from the depression and New Era conditions; at the same time there was a growing force for write-ups as a result of price and profit increases between 1932 and 1937.

Prior to 1921 profit rates computed on the end of 1923 valuation basis were less than those computed on a beginning or end of year basis.[5] Upward revaluation on a substantial scale began sometime during the war period. The lag behind the rapid price and profit rises was probably shortened by the excess-profits tax enacted in 1917 and the war-profits tax enacted in 1919. While the profits taxes, because based upon invested capital, tended to stimulate early revaluation, they also probably acted to limit the extent of revaluation through restricting dollar profits after taxes. Other elements limiting the magnitude of revaluation, which might have been expected from a 100 percent increase in capital goods prices and an even greater increase in profits, were doubts as to the amount of price and profit

[4] There are some few corporations which have independent appraisals made annually, but this is rare.
[5] General information indicates this must have been true for the war period for which overall data are not available.

increases to be permanently retained and the relative shortness of the period available to digest the changes in the position of capital.

The process of revaluation growing directly out of the war period price, profit, and tax conditions apparently ended in 1920. With rapid deflation in progress in late 1920 and 1921, it was natural to call a halt to book changes until the new price and profit situation had been clarified. While revaluations by 1920 totaled about 15 percent of the pre-war net worth, they were apparently incomplete with reference to post-war prices and profits. It is to be presumed that the book values at the end of 1923 incorporated the residual war effects on values only in terms of the collective profit anticipations of the corporate system.

After 1923, however, an expanding profit volume developed while prices of capital goods remained at almost twice the pre-war level. The stage was set for the surge of revaluations which began in 1924 and continued through 1930. Net worth at the end of 1930 contained a revaluation item of over $35,000,000,000 cumulated from the end of 1923. This amounted to about 35 percent of the end of 1923 net worth.

Year by year, revaluations were just enough to keep the profit rate within the 5 to 7 percent range. But on the basis of the 1923 valuation, the profit rate increased from an average of less than 6 percent in 1922 and 1923 to an average of almost 8¼ percent in 1928 and 1929—an increase of almost 40 percent.

The differences between the profit rates on the end of 1923 valuation basis and those on a current valuation basis indicate that the difference between the post-war and pre-war price levels was a major factor behind the profit showing of the twenties. In spite of revaluations through 1920, the valuation base underlying a considerable proportion of capital assets was far below the valuation base current in the twenties. As a consequence, owners of capital assets—particularly corporate owners—were placed in a strategic position to capitalize the changes in the price level of capital assets, except so far as technology made their holdings obsolete. And even rapid technological change cannot make any large portion of the capital assets obsolete during a short span of years. For no more than a fraction of the corporate productive plant can be replaced in the course of a decade.[6] In essence, property owners as a group were able to extract the "unearned increment" from the change in the valuation base for capital assets. On the books of the corporate system, this was reflected in part by net upward revaluations of capital assets and in part by higher dollar profits. For individuals, it was reflected in high capital gains and high dividend receipts.

During the Great Depression downward revaluation started in 1931 and continued at least through 1933. The operation of the profit and price factors are evident. Capital goods prices declined about 20 percent while profits were turned into losses. About a third of the 1923–30 revaluations was written off by the end of 1933. As a result the loss rates in 1931, 1932, and 1933 were 5 to 10 percent

[6] During the 7 years, 1923 to 1929, business gross and net business capital formation totaled $67,000,000,000 and $24,000,000,000, respectively (Kuznets, Simon, National Income and Capital Formation, 1919–35. National Bureau of Economic Research, Inc., New York, pp. 40 and 48). These figures covering both corporate and noncorporate enterprise may be compared to about $120,000,000,000 of corporate capital assets, after reserves, at the end of 1929. Certainly no more than a half of the capital assets of the corporate system existing at the end of 1929 could have been valued on an original cost based upon the late war and New Era price levels.

higher on the revalued basis than upon the end of 1930 valuation basis. Even so, the maximum loss rate—occurring in 1932—was less than 3 percent after taxes. And for the 3 loss years (1931–33) combined, only about 4.5 percent of the net worth of the corporate system disappeared. In view of conditions during those years, this is a striking illustration of the ability of the corporate system to conserve its capital, both in money value terms and in terms of its ability to function.

By 1936–37, the profit rate based upon current book values was near the 5 to 7 percent range of the twenties, running around 4.6 percent after taxes.[7] Revaluations apparently played a very small role in the profit record of 1934–37. First, a great part of the depression inconsistency between profits and book values had disappeared by 1935. Second, the current price level of capital goods was comparable to the prices upon which the book values of capital goods purchased in earlier years were based. In view of the under use of resources and the lack of a tremendous disparity between current prices and values underlying capital assets the 4.6 percent profit rate in 1936–37 compares favorably with the rates of the twenties. There is no indication that the profit potentials of the corporate system have been impaired. In fact, there is every indication that, given an adequate volume of business, the profitability of the corporate system would be as great as it has ever been.

There is little evidence of any long-term change in the profitability of the corporate system. Aside from the war period, the New Era appears to have been more profitable than both the pre-war and the recent recovery period. However, a good part of the profit rate during the twenties can be attributed to the price upheaval engendered by the World War. Had both net worth and costs been based upon New Era prices, the general level of the profit rate would have been lower than that shown by the data.

D. SIGNIFICANCE OF THE ANALYSIS OF PROFIT RATES

There are four conclusions indicated by the analysis of this chapter.

1. The interdependence between earning power and asset values makes rate of return figures unreliable as measures of profitability. It is this interdependence between earning power and asset values which account for the comparative stability of profit rate figures for the New Era when the computations are based upon contemporaneous book values of assets.[8] And probably the declining profit rate figures shown by a recent study [9] for the first decade and a half of the century are the result of the same element of dependence. As a consequence, the profit level indicated by computations based upon contemporaneous book values in periods such as 1910–14 and 1922–29 tend to be a measure not so much of profitability as of the "fair" profit rate to which book values of the corporate system are adjusted. And this "fair" level seems to fall in the 5 to 7 percent range.

[7] The 1937 figure shown by the data is 4.4 percent. The difference between the 1936 and 1937 figures arises largely because of the inclusion of capital reserves in net worth for 1937.

[8] See, for example, Nerlove, op. cit., ch. VII; Epstein, Ralph C., Industrial Profits in the United States, National Bureau of Economic Research, 1934; and Crum, W. L., "Cyclical Changes in Corporate Profits," The Review of Economic Statistics, vol. XXI, No. 2 (May 1939), table 2, p. 54.

[9] Epstein, E. I., and R. A. Gordon, "Profits of Selected American Industrial Coroprations, 1900-1914," The Review of Economic Statistics, vol. XXI, No. 3 (August 1939) table I, p. 125. A portion of the table is shown in appendix III.

2. As measurements of the all-inclusive money profit income of the corporate system, the data in table I for 1909–32 are warped roughly in accordance with the indicated change in valuation figures shown in table II. For the New Era and World War periods, the understatements of such profits were substantial; for the period of Great Decline between 1929 and 1932, the overstatements of profits and the understatements of losses were substantial. And it is probable that such profits since 1932 have been grossly understated. In short, the accounting practices designed to omit profits not of a "current income" nature from the profit account eliminate a good share of the fluctuations of such profits from the available data.

3. As measurements of the profits of the corporate system, exclusive of changes in capital values, the data in table I for 1909–32 are warped roughly inversely with the indicated change in valuation figures shown in table II. For the New Era and World War periods, the overstatement of such profits is great while for the 1930–32 period the reverse is true. Since 1932, the picture is not clear, but it seems probable that the data understate the amount of current income.[10]

4. In terms of the purchasing power of the profits accruing to stockholders, it is difficult to draw any definite conclusions for all periods. From the viewpoint of "real" gains, the mass revaluations of the twenties definitely indicate that the corporate stockholders had gained as a result of the World War activities far more wealth than even the high profit figures of the World War and New Era periods indicate. This is so because they were able to maintain the money values resulting from the price upheavals engendered by the World War by reason of the high level of capital goods prices relative to other prices during the New Era. What the "real" profits of the corporate system were during the post New Era deflation is far from clear. Had stockholders found it necessary to liquidate the system in 1932, it is certain that their losses would have been far greater than those indicated by the profit figures. But this did not have to be done and, since 1932, much of the capital value which had disappeared by 1932 has been validated.

[10] The reason for this lies in the fact that the changes in capital values between 1929 and 1932 were not fully entered upon corporate books by 1932. So far as the unrecognized changes were not validated later, charges to costs would tend, because on balance the unrecognized changes appear to have been downward, to be based upon higher than current capital values.

CHAPTER IV

THE PROFIT MARGIN

A. THE NATURE OF THE DATA

Business ordinarily computes its profit margin as the ratio of profit to gross receipts. But a more appropriate and significant computation and the one used in this study is the percentage which profits bear to the net product of business. The net product of, or income produced by, business is a better measure of the contribution which it makes to the national output than is the sum of the gross receipts of individual businesses. This is so because such a sum includes a large volume of duplications.

The net product of (or income produced by) the corporate system is usually taken as the *net* value of commodities produced and services rendered; or the *gross* value of goods and services produced minus the value of raw materials and of capital equipment consumed; or the total of an incomes accruing to employees and owners of equity and borrowed capital. Omitted from the net product are realized and unrealized gains or losses from the sale of capital assets. This concept of income produced is the same as the one upon which the official estimates of the national income, prepared by the United States Department of Commerce, are based.[1]

No accurate measurement of the net product of, or the income produced by, the corporate system has as yet been made. Consequently, the estimates presented in table IV can be considered only in the nature of first approximations. In spite of the crudeness of the estimates, however, they do provide a measure of the general level and of the direction of the movements of the net product.

The two most serious inadequacies of the estimates are: (1) they probably underestimate the growth of corporate enterprise; and (2) the figures for 1909–18 are not strictly comparable with those for the later years.

A comment with regard to the treatment of taxes is pertinent. In the measurement of national income produced, all taxes are considered as payments for services received by business and not as part of the net product of business. This treatment of taxes assumes either that taxes are payments for services rendered by government, or that business functions merely as the tax collecting agency for government, or both. This treatment, of course, oversimplifies the situation and dodges the important question of the incidence of taxes. For the purpose of measuring the share of the net product which is profits, some refinement technically should be introduced. But in view of the crudeness of the existing estimates of corporate income produced, no such refinement was considered worth while. The estimates in

[1] Nathan, Robert R., Income in the United States, 1929–37, U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce: Washington, D. C., November 1938. pp. 3-7.

table IV are, therefore, exclusive of taxes. In appendix I, section D, computations, inclusive of Federal income and profits taxes, are shown as well as details concerning the derivations of the estimates.

With regard to the validity of comparisons between the income produced and the profit series, it may be noted that both are based upon the same type of "current income" concepts. However, the profit series include certain realized capital gain and loss items which the income produced figures exclude for 1929 and subsequent years, although both series exclude, by and large, the so-called unrealized capital gains and losses. The effect of this is, of course, to introduce small relative biases in the profit margin figures in terms of the relative differences in the volume of realized capital gains excluded from the income produced figures.

TABLE IV.—*Income produced by and net profit of the corporate system, 1909–37*

[Money figures in millions of dollars]

Year	Income produced by the corporate system [1]	Net profit of the corporate system [2]	Net profit as percent of income produced	Year	Income produced by the corporate system	Net profit of the corporate system	Net profit as percent of income produced
1938	33,057			1923	41,111	5,827	14.17
1937	39,456	3,872	9.81	1922	34,242	4,380	12.79
1936	34,590	3,903	11.28	1921	28,039	24	.09
1935	29,186	1,674	5.74	1920	40,915	4,343	10.61
1934	26,146	157	.60	1919	38,042	6,307	16.58
1933	21,822	−2,379	−10.90	1918	31,381	4,553	14.51
1932	20,230	−5,375	−26.57	1917	30,352	7,342	24.19
1931	29,434	−3,145	−10.68	1916	27,625	7,408	26.82
1930	39,054	1,366	3.50	1915	20,884	4,083	19.55
1929	48,350	8,084	16.72	1914	18,551	2,371	12.78
1928	45,735	7,566	16.54	1913	19,794	3,347	16.91
1927	43,328	5,880	13.57	1912	19,053	3,425	17.98
1926	44,522	6,774	15.22	1911	17,152	2,531	14.76
1925	42,838	6,971	16.27	1910	17,128	2,906	16.97
1924	39,715	4,998	12.58	1909	16,038	2,599	16.21

[1] Excludes taxes.

[2] Excluding intercorporate dividends and Federal income and war, excess, and undistributed profits taxes.

Sources and methods: See appendix I, secs. A and D.

B. THE HISTORICAL RECORD

During the period for which data are available, the profits of the corporate system have consistently accounted for a substantial part of corporate income produced. This is shown by the data in table IV and plotted in chart 4. In years of moderate activity or better, exclusive of the war period, profits have ranged between 10 and 18 percent of the net product of the corporate system. During the New Era period, 1922–29, profits averaged about 15 cents out of every dollar of income produced by the corporate system. During the war period, 1915–19, the profit margin ranged between 14 and 27 percent of income produced.

Only in years of extremely low activity, such as 1921 and 1931 through 1934, did the profit margin fade away or disappear. In 1921 the profit margin practically disappeared, amounting to less than 0.1 percent. At the very low levels of the national income in the 3 years of deepest depression, 1931–33, corporations reported net losses equal to 15 cents for every dollar of income produced by them. In 1932, the worst depression year, the corporate system produced only

Chart 4

PROFIT MARGIN OF THE CORPORATE SYSTEM, 1909 - 1937

Sources and Methods See Appendix I, Sections A and D

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$20,000,000,000 of national income and reported a loss of over $5,000,000,000 as a result; the book cost of the output of that year was over $25,000,000,000.[2] But it should be noted, however, that the corporate plant, during this period, was operating at the lowest level relative to capacity of any period for which records are available.

There has been a direct relationship between the profit margin and the volume of output relative to capacity of the corporate system. Corporations have obtained much more than a proportionate share of increases in corporate income produced during periods of rising activity; they have absorbed much more than a proportionate share of decreases in corporate income produced on the decline. This is a well recognized relation.[3]

For the shorter periods of rising or falling activity, the data in table IV bear ample testimony to the relation between volume and profit margins. The explanation lies partly in the lowering of unit costs as output expands and the increasing of unit costs as output contracts attributable to efficiency and overhead cost factors. This is particularly true when capacities are relatively fixed as they are for the corporate system as a whole during the short run. But of equal importance in the rise and decline of the volume of profit are the typical expanding and contracting margins between costs and prices resulting from differential price movements during periods of rising and declining business activity. The effects of such price movements upon the volume of profits are superimposed upon the effects of technical efficiency and the scale of output.

For the longer run, the evidence of definite trends in the profit margin is not so clear. Even so, it appears possible that at times there may have been a discernible tendency for the profit margin to rise over fairly long periods. During the 8 years of sustained activity of the twenties—1922–29—there was an increase of over 20 percent in the profit margin—from 13.5 percent in 1922–23 to 16.6 percent in 1928–29. This shift seems to be more than can possibly be attributed to defects in the estimates of corporate income produced.

On the basis of the data, no accurate comparison can be made between the New Era and pre-war profit margins. The figures in table IV would indicate a slightly higher profit margin during 1909–14 than in 1922–29.[4] However, the underlying figures are not prepared on a sufficiently similar basis to warrant such a conclusion. About all that can be concluded from the data is that profit margins were roughly of about the same order of magnitude in the two periods.

In spite of the large increase in corporate profits during the recovery movement, the 1936 and 1937 profit margins remained considerably below the level of the twenties. The most important factor accounting for this difference in profit margins was the much lower rate of capacity use during 1936–37 relative to the twenties. Even the depressed years of the New Era did not have as low a use of capacity as the peak months of 1936–37. For this reason, the more appropriate comparison is not with the New Era as a whole but with

[2] If the net realized capital losses included in the profit figures had been included in the income-produced figures, the profit margin figure would be even lower.

[3] For example, in commenting upon the profit increase between the first three quarters of 1939 and the corresponding 1938 period, the National Industrial Conference Board said, "A more rapid recovery in earnings than in production is normal * * *." The Conference Board Economic Record, vol. I, No. 16 (November 21, 1939).

[4] The reverse is true for profits before Federal income and profits taxes as a percentage of income produced plus those taxes. See appendix table VII for data.

1922 and 1924 in which the margin averaged 12.7 percent. For 1936, the profit margin was 11.3 percent; but in the latter half of 1936 and the first half of 1937, the margin must have been considerably higher judging from quarterly indexes of profits.[5] Thus, taking into account the rate of capacity operations, profit margins in 1936–37 were comparable to those in the twenties.[6]

C. OUTPUT AND PROFITS

The income produced figures do not, of course, provide measurements of changes in the physical output of goods and services. But a ratio between a change in profits and a change in income produced does give a measure of the proportion of a change in output which accrues to corporations since such a ratio is invariant with respect to price level and relatively invariant with respect to price changes. Such ratios, therefore, do indicate the marginal relation between profits and the level of output on the assumption that capacity is fixed and in the short-run the capacity of the corporate system is in fact relatively fixed.

For the purpose of determining the relation between profit volume and the level of output, the ratios of annual profit changes to annual income changes should be classified by the percent of capacity utilized in the first year and then further classified by the percent of capacity utilized in the second year. No data are available for making such a cross-classification. In place of a classification of year-to-year changes in terms of capacity utilized in each of the 2 years, a classification based upon the "cycle phase" has been used as an approximation which, while undoubtedly crude, is nevertheless fundamentally sound. The results are shown in table V and plotted in chart 5.

The constancy of the profit change ratios within each "cycle phase" group shows that the quantitative relation between corporate profits and output has not changed substantially during the past 25 or 30 years. This appears surprising in view of the many and marked changes in technology, structure, and governmental intervention during the period. But, nevertheless, the functioning and results of the corporate system have remained of the same nature. During each phase of recovery and recession, the relation between year-to-year changes in income produced and in profits has been about the same.

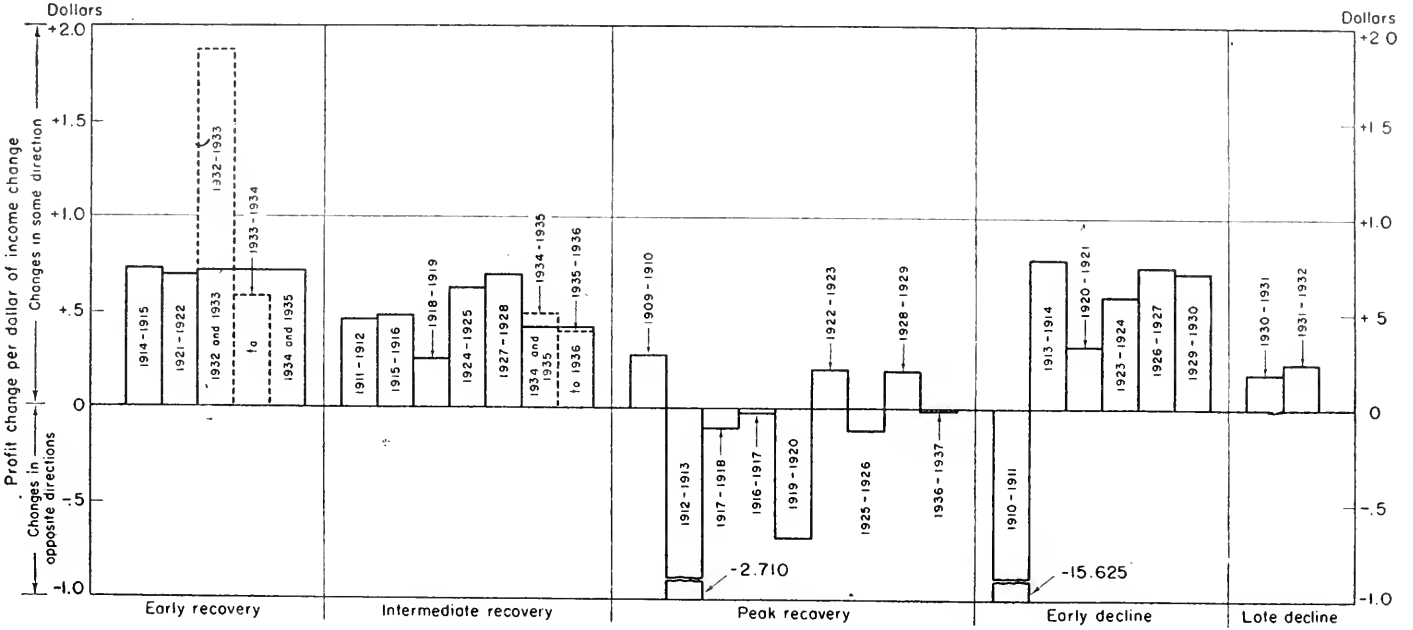
The data show that the ability of the corporate system to increase its share of increased output is at its height during the early stages of recovery from a relatively deep depression. The profit margin expands very greatly and the bulk of the increased corporate income produced goes into the corporate profit account. The three most comparable periods for this phase of recovery are 1914–15, 1921–22, and 1932–34. In the first two, around 70 cents out of every dollar increase in corporate income produced went into the corporate profit account. In the 1932–34 period, the corporate profit account absorbed 10 percent more than the difference between the average 1933–34 and

[5] See appendix III for the quarterly indexes of profits.

[6] *Cf.* Davidson, Clinton, Jr., "The Myth of Profitless Prosperity," a speech delivered on April 8, 1940 and reprinted in the Verbatim Record of the proceedings of Temporary National Economic Committee the Bureau of National Affairs, Inc., Washington, D. C., 1940, vol. 13, "Exhibit No. 2438," pp. 57-61.

Chart 5

CHANGE IN PROFIT OF THE CORPORATE SYSTEM PER DOLLAR OF CHANGE IN CORPORATE INCOME PRODUCED DURING VARIOUS CYCLE PHASES, 1909-1937



Sources and Methods: See Tables IV and V and Appendix I, Sections A and D

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TABLE V.—*Changes in net profit of and income produced by the corporate system during various cycle phases, 1909–37*

Years	Net change (millions of dollars)		Profit change per dollar of change in income produced (dollars)
	Income produced	Net profit	
Early recovery			
(1932+1933)-(1934+1935)	6,640	4,793	.722
1932–33	1,592	2,996	1.882
1933–34	4,324	2,536	.586
1921–22	6,203	4,356	.702
1914–15	2,333	1,712	.734
Intermediate recovery			
(1934+1935)-1936	6,924	2,987	.431
1934–35	3,040	1,517	.499
1935–36	5,404	2,229	.412
1927–28	2,407	1,686	.700
1924–25	3,123	1,973	.632
1918–19 [1]	6,661	1,754	.263
1915–16	6,741	3,325	.493
1911–1912 [2]	1,901	894	.470
Peak recovery			
1936–37	4,866	−31	−.006
1928–29	2,615	518	.198
1925–26	1,684	−197	−.117
1922–23	6,869	1,447	.211
1919–20	2,873	−1,964	−.684
1916–17	2,727	−66	−.024
1917–18	741	−78	−.105
1912–13 [2]	1,029	−2,789	−2.710
1909–10 [2]	1,090	307	.282
Early decline			
1929–30	−9,296	−6,718	.723
1926–27	−1,194	−894	.749
1923–24	−1,396	−829	.594
1920–21	−12,876	−4,319	.335
1913–14	−1,243	−976	.785
1910–11 [2]	24	−375	−15.625
Late decline			
1931–32	−9,204	−2,230	.242
1930–31	−9,620	−1,779	.185

[1] Income produced data for the 2 years are not strictly comparable; see appendix I.
[2] Overlapping of recovery phases greater than in other periods because of shorter period of fluctuations.

Sources and methods: Computed from data in table IV.

the 1932 income produced. But the more appropriate comparison appears to be between the average for 1934–35 and the average for 1932–33 because the average rates of capacity operations in those periods appear to have been more comparable with those in the 1914–15 and 1921–22 periods. This indicates that about 70 cents of each dollar of expansion of income produced became corporate profits—about the same relation as during the earlier periods.

With respect to the intermediate stages of recovery, the data show that the profit margin increases less rapidly than in early recovery and roughly half of the increased corporate income produced goes into the profit account. It is during such periods that the savings from the spreading of overhead costs begin to be offset by the additions to overhead costs resulting from the installation of new capacities. Some output increases have to bear their proportionate share of the current overhead cost burden in contrast with the early recovery situation in which most of the output increases do not involve increases in overhead costs. Furthermore, the differential price and wage movements begin to narrow down. And, finally, inventory accumulations represent some of the output increases on which only realized profit increases are entered on corporate books, so that on this account alone the profit margin as shown by the figures tends to decline.

As an intermediate stage of recovery develops, the profit margin apparently continues to advance but at a declining rate. During such a development, only small savings are possible through spreading overhead costs; more and more of the increases in output have to bear their proportionate share of overhead costs; and the lowering effects of inventory accumulations on the profit margin figures tend to increase. In addition, participants in production attain greater and greater equality in bargaining or competitive position. As a result earlier gains in the profit margin made through differential price and wage movements are partially lost while anv currently developed are of relatively small magnitude.

Thus, the corporate system reaches a position during the course of expansion where the profit margin on increments of business is smaller than on the total business. At this point the profit margin on total business is about 15 percent, or perhaps somewhat greater. Fifteen percent seems to be the figure above which the profit margin cannot rise except during unusual periods of demand and sustained operations near full capacity such as occurred during the World War period and perhaps during 1928–29. It appears to represent a level of profit which the economy cannot maintain for any long period in the absence of unusual demand, and whenever attained has presaged a decline in activity.

Whether attempts to continue expanding the profit margin after high levels of profits and activity have been attained, or whether high profit margins in themselves [7] have been the stumbling blocks in the way of sustained high rates of activity, is a moot question difficult to answer. It is clear, however, that by the time reasonably full use of resources has been attained, the profit margin has also attained a high level and that, in spite of high profit margins, business activity and profits have started to decline.

The behavior of profits and output during periods of expanding activity points to the inability of the business system to adjust its activities in such a way as to maintain a high level of national income. During early and intermediate recovery, the business system is in a relatively passive role; profit accounts are fattened largely as a consequence of increases in demand which lead to increases in output. During such periods, the volume of capacity expansion, while moderate, apparently involves a volume of investment expenditures sufficient

[7] Via their effects on savings, with regard to which see ch. VII, infra.

to fulfill the necessities of such periods. But as high levels of output are attained the necessities for maintaining or expanding the national income are either (1) to increase the rate of capacity expansion so that investment expenditures are adequate for a high national income, or (2) to adjust prices, profits and other elements so that a high national income can be maintained with only a moderate rate of capacity expansion, or (3) both. And the business system has been unable to fulfill such requirements with the result that business declines of greater or less magnitude have occurred all too frequently.

The 1936–37 experience is particularly worth while examining in this connection. It is the one occasion during which recovery did not attain relatively full dimensions in terms of the available resources. In spite of the fact that there was a considerable underuse of resources in 1936, the profit margin had approached the level typically associated with a much higher level of resource use—as, for example, in 1927, 1924, and 1922. And the reason high profit margins became associated with a low level of use of capacity lay largely in the rapid price increases of the latter part of 1936.

In spite of the imbalance in late 1936 and early 1937, prices continued to advance as the attempt was made to raise the profit margin to full recovery levels. For a few brief months, profit margins undoubtedly advanced, intrasystem profits on inventory accumulations, which were later canceled, being an important factor. But the burden on purchasing power was too great and as in earlier periods the system was unable to sustain itself for more than a few months. In effect, the drive for higher profits had negated itself by arbitrarily placing a limit upon the extent to which existing capacities could be used. The resulting behavior of the profit margin between 1936 and 1937 was the same as at full recovery levels in earlier years.

During the early stages of recession, there is a decline of about 70–75 cents in corporate profits for each dollar of reduction in corporate income produced. This is shown by the figures for the periods, 1913–14, 1923–24, 1926–27, and 1929–30. The 1920–21 figures indicate a much smaller proportionate decline in the profit account but this is probably the result of the inclusion of both the early and late stages of decline in that period. A large share of the decline in profits relative to income produced is accounted for by the practice of recording both realized and unrealized inventory losses during periods of declining prices. Another portion arises because of the effects of inventory liquidation upon the profit margin figures since the income produced figures exclude the decline in inventories while the profit figures include any profit or loss upon them. Finally, overhead costs must be spread over smaller outputs.

When the decline in activity is more than of moderate extent, profits continue to decline more rapidly than income produced. Under such conditions smaller and smaller portions of the decreases in net output are absorbed by the profit account as the volume of inventory liquidation decreases and as the effects of price changes become smaller. Furthermore, there are limits upon the extent to which the volume of profit will decline for individual companies although there are no such limits for the income produced by such companies. For individual companies the limit of profit adjustment tends to be determined by the level of fixed costs; once the profit account shows a deficit equal to fixed costs no further declines in profits, except as a result of asset

liquidation, tend to occur. Although further declines may occur in the income produced by individual companies, they are partially or completely offset by a shift of business to other companies which, as a consequence, tend to show larger profits or smaller losses.

The relation between output and profits derived from the over-all corporate income produced and profit data should not be interpreted as indicative of the nature of the effect of changes in output upon profits or vice versa when the changes in output are attained exclusively as a result of changes in capacity. Rather it shows the associated increases (decreases) in output and profits which occur in circumstances under which output changes while capacity, though relatively fixed, is being increased at an expanding (contracting) rate. Relations between output and profits would be much different were changes in output the result of changes in capacity rather than of variation in the percent of capacity utilized. Both types of relations are of importance in connection with monopolistic practices. The former would bear upon the question of the extent to which monopolistic practices limited capacities; the latter upon the extent to which such practices limited the use of capacities.

D. THE BREAK-EVEN POINT

The level of money income produced at which the corporate system can break even during a period depends largely upon the price level, changes in the price level during the period, and the capacity of the system. With a stable price level, the break-even point would fluctuate directly with capacity. With the same capacity, the break-even point would be higher the higher the price level when comparisons are made between different periods of stable price levels. But with capacity the same—and over the short-run over-all capacity is in fact relatively stable—and with prices moving from one level to another, the break-even point declines with rising prices and rises with declining prices. And the extent of the rise or decline in the break-even point under these conditions depends directly upon the extent of the price movement relevant to the activities upon which the particular profit computations are based.

With existing capacities, with cost-price relations similar to those in recent years, and with a stable price level at a level roughly indicated by the 75–80 range on the Bureau of Labor Statistics index of wholesale prices (1926=100), the break-even point for the corporate system may be roughly estimated at around 30 billion dollars of income produced. This corresponds roughly with a national income between 55 and 60 billion dollars while a national income of at least 85 to 90 billion dollars would probably correspond to a reasonably full use of resources. Thus, the corporate system can break even with the national income level at least 30 to 35 percent below the level required for reasonably full use of resources.

In 1934, the corporate system just about broke even with a net product of $26,000,000,000 and with the national income at $50,000,000,000. But not only were capacities and prices lower than at the present time, but prices had increased considerably over the 1933 level and to a lesser extent during the year. In 1935, the corporate system did better than break even with a net product of $29,000,000,000 and with the national income at $55,000,000,000. But,

while prices were at about the present level, capacity was lower than at the present time and prices had increased substantially over the 1934 level and to a lesser extent during the year.

The 1935 situation may be contrasted with that of 1931. For both years the net product of the corporate system and the national income were at approximately the same level. But, whereas the price movements affecting the 1931 profit results were downward, those for 1935 were upward; the 1931 profit accounts included substantial capital and inventory losses while the 1935 profit accounts included substantial capital and inventory gains. As a consequence, the profit results differ widely for the 2 years; after taxes, the corporate system lost over 3 billion dollars in 1931 and made almost 1.7 billion dollars in 1935.[8]

[8] Certain segments of the corporate system—particularly the larger corporations—can, of course, break even at much lower levels of capacity operations and of the national income than can the corporate system as a whole. For example, 951 industrial, utility, and railroad corporations tabulated by the Standard Statistics Co., Inc., did better than break even in 1932 when the national income even measured in terms of the recent price level totaled far less than $55,000,000,000. See appendix tables XXVI, XXVII, and XXVIII. Another example is the well-known ability of the steel industry to break even at no more than 55 percent of capacity operations, whereas the corporate system as a whole does not appear to be able to break even at less than 65 percent of capacity operations.

PART II

THE DISPOSAL OF CORPORATE PROFITS

CHAPTER V

INTERNAL AND EXTERNAL DISPOSAL OF PROFITS

Corporate profits are either retained within the corporate system or disbursed to individuals and organizations outside that system. Profits which are retained may be used either to expand assets or to retire debt. Such features of the internal use or disposal of retained profits as are considered at all in this study are discussed in other parts. This part of the study pertains in the main to the extent to which profits are disbursed and to the manner in which dividend payments are used by the outside recipients.

Profits not retained are typically disbursed as dividends. But some portions of items, such as salaries, bonuses, and other types of expense items, shown on the books of corporations as expenses should properly be shown as profits and disbursements of profits. Even rough estimates of the amounts so disbursed, however, cannot be obtained. Consequently, dividend payments represent the only form of disbursements of profits to individuals for which quantitative information is available for study.

Retained profits and cash dividends for each of the years 1909 to 1937 as shown by the available records are contained in table VI and plotted in chart 6. Most of the consequences of the accounting procedures used in preparing current income statements are reflected, of course, in the retained profit figures. Thus, while the dividend figures are reasonably accurate measurements of the net cash dividends paid during each year, the retained profit figures are subject to even greater errors, percentagewise, than the total profit figures. For this reason, the percentage computations shown are not very reliable indicators of the proportions which the net dividend outgo have been of profits in various years. In general, those shown for the percentage which cash dividends is of profits are probably too high since profit figures reported for tax purposes tend to be understatements.[1]

It appears from the figures in table VI that dividends paid out by the corporate system have consistently amounted to at least 50 percent of the profits of the corporate system as computed on a "current income" basis. During the World War period, the indicated proportion was below the 50 percent mark. But it is probable that a considerable amount of valuation changes entered the profit computations as a result of the war period price upheaval so that the profits of that period are not on a "current income" basis strictly comparable with that of other periods.[2] Thus, the 50 percent mark may be accepted as a rough lower limit for the amount which current cash dividends have been of current income.[3]

[1] See ch. I, sec. B and ch. II, sec. C.

[2] Also, it may be noted that dividend figures are not as reliable for the earlier years of the period as for the later years. See appendix I, sec. A.

[3] If profits disbursed as other than dividends were included in the profit figures, the percentage might be lower. And, of course, the total external disbursements would constitute a greater percentage of such profit figures.

Chart 6

RETAINED PROFITS AND NET DIVIDEND OUTGO OF THE CORPORATE SYSTEM, 1909-1937

Sources and Methods: See Table VI and Appendix I, Section A

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TABLE VI.—*Retained profits and net dividend outgo of the corporate system, 1909–37*

[Money figures in millions of dollars]

Year	Compiled net profit [1]	Net dividend outgo		Retained profits	
		Amount	Percent of net profit	Amount	Percent of net profit
1937	3,872	4,832	124.8	−960	[2]−24.8
1936	3,903	4,702	120.5	−799	[2]−20.5
1935	1,674	2,927	174.9	−1,253	[2]−74.9
1934	157	2,642	1,682.8	−2,485	[2]−1,582.8
1933	−2,379	2,101	[3]−88.3	−4,480	[4] 188.3
1932	−5,375	2,626	[3]−48.9	−8,001	[4] 148.9
1931	−3,145	4,182	[3]−133.0	−7,327	[4] 233.0
1930	1,366	5,613	410.9	−4,247	[2]−310.9
1929	8,084	5,927	73.3	2,157	26.7
1928	7,566	5,166	68.3	2,400	31.7
1927	5,880	4,765	81.0	1,115	19.0
1926	6,774	4,439	65.5	2,335	34.5
1925	6,971	4,014	57.6	2,957	42.4
1924	4,998	3,424	68.5	1,574	31.5
1923	5,827	3,299	56.6	2,528	43.4
1922	4,380	2,634	60.1	1,746	39.9
1921	24	2,630	10,958.3	−2,606	[2]−10,858.3
1920	4,343	2,900	66.8	1,443	33.2
1919	6,307	2,600	41.2	3,707	58.8
1918	4,553	2,620	57.5	1,933	42.5
1917	7,342	3,025	41.2	4,317	58.8
1916	7,408	2,500	33.7	4,908	66.3
1915	4,083	2,055	50.3	2,028	49.7
1914	2,371	2,028	85.5	343	14.5
1913	3,347	2,167	64.7	1,180	35.3
1912	3,425	1,950	56.9	1,475	43.1
1911	2,531	1,866	73.7	665	26.3
1910	2,906	1,828	62.9	1,078	37.1
1909	2,599	1,567	60.3	1,032	39.7

[1] Excludes intercorporate dividends and Federal income and war, excess, and undistributed profits taxes.
[2] Percentage excess of dividends over net profit.
[3] Percentage of net loss.
[4] Percentage net loss plus dividends of net loss.

Sources and methods: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods, see appendix I, sec. A.

During periods of recession and depression and at other times when substantial segments of the corporate system are not in need of funds, dividend disbursements have amounted to considerably more than 50 percent of current income. At times, dividends have totaled almost as much and even more than profits. And dividends have been paid in substantial amounts even when the corporate system was suffering deficits.

CHAPTER VI

DIVIDENDS

What happens to the dividends paid out by the corporate system depends upon the spending and saving habits of those who receive them. One of the most important, if not the most important, characteristic of dividend recipients bearing upon the manner in which they dispose of dividends is the total amount of income received. This is particularly true in connection with the critical division between consumption expenditures and savings, since the proportion of income saved by individuals increases sharply with the total income received. It is with this critical division that this study is mainly concerned. The present chapter is directed toward showing (1) the importance of dividend income in determining the size of the incomes of dividend recipients and (2) the size of the incomes of those recipients.

A. THE DISTRIBUTION OF DIVIDEND RECEIPTS

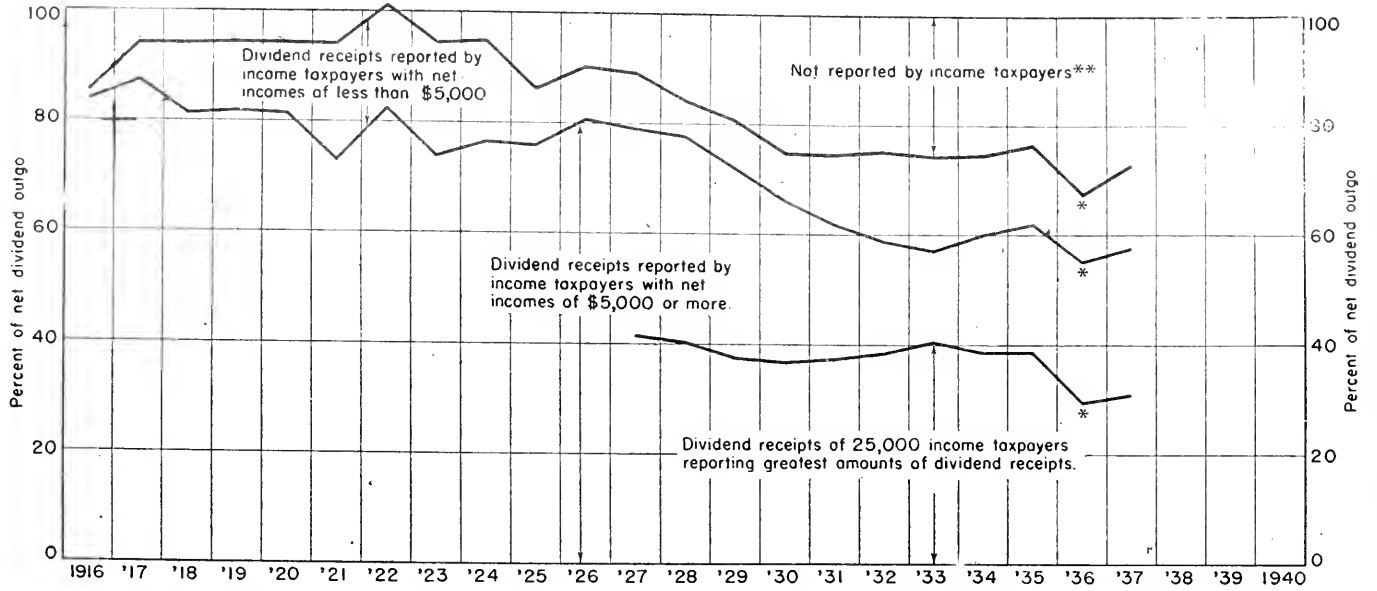
A small number of individuals receive most of the dividend outgo of the corporate system. As the data contained in table VII and plotted in chart 7 show, Federal income taxpayers have received around 70 percent or more of the net dividend outgo of the corporate system. The number of tax returns since 1917 has varied between 3.2 million in 1931 and 7.7 million in 1923. Even if every income taxpayer were a dividend recipient, no large segment of the population would be covered. For example, in 1936 there were 5.4 million tax returns, and, even if each one had reported dividend receipts, it would indicate that the bulk of the dividends go to less than 15 percent of the total of about 29 million families and 10 million single individuals composing the income receiving group. But, of course, not all income taxpayers receive dividends so that the number of individuals receiving most of the dividends is grossly understated by such a comparison. A special tabulation of the 1928 tax returns [1] shows that 792,000 returns or less than 20 percent of the 4,071,000 tax returns for that year reported all but $149,000,000 or 3.4 percent of the dividend receipts reported by income taxpayers in that year. The tabulations for 1937, which included for the first time estimates of the total number of taxpayers reporting dividend income, showed that 1,694,000 or about 27 percent of the 6,350,000 tax returns for that year accounted for all the dividend receipts reported.

[1] U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1928, Government Printing Office: Washington, D. C., 1930, pp. 11-12.

Chart 7

PERCENT DISTRIBUTION OF THE NET DIVIDEND OUTGO OF THE CORPORATE SYSTEM, 1916-1937

BY CLASSES OF INCOME TAXPAYERS



*Change in tabulating procedure.

**Includes dividends not reported as dividends by income taxpayers.

Sources and Methods: Based largely upon *STATISTICS OF INCOME*.
For details see Appendix I, Sections E and F

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TABLE VII.—*Dividend receipts reported by all income taxpayers, 1916–37*

[Money figures in millions of dollars]

Year	Net dividend outgo of the corporate system	Number of income taxpayers (thousands)	Dividend receipts		Year	Net dividend outgo of the corporate system	Number of income taxpayers (thousands)	Dividend receipts	
			Amount	Percent of net dividend outgo				Amount	Percent of net dividend outgo
1937	4,832	6,359	3,514	[1] 72.72	1926	4,439	4,138	4,012	90.38
1936	4,702	5,413	3,174	[1] 67.50	1925	4,014	4,171	3,465	86.32
1935	2,927	4,575	2,235	76.36	1924	3,424	7,370	3,251	94.95
1934	2,642	4,094	1,966	74.41	1923	3,299	7,698	3,120	94.57
1933	2,101	3,724	1,559	74.20	1922	2,634	6,787	2,664	101.14
1932	2,626	3,877	1,972	75.10	1921	2,630	6,662	2,477	94.18
1931	4,182	3,226	3,114	74.46	1920	2,900	7,260	2,736	94.34
1930	5,613	3,708	4,167	74.77	1919	2,600	5,333	2,454	94.38
1929	5,927	4,044	4,783	80.70	1918	2,620	4,425	2,469	94.24
1928	5,166	4,071	4,351	84.22	1917	3,025	3,473	2,849	94.18
1927	4,765	4,102	4,255	89.30	1916	2,500	429	2,136	85.44

[1] Tabulating procedure changed in 1936. See appendix I, sec. E.

Sources: U.S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes, except the net dividend outgo figures for 1916–21, the sources for which are given in appendix I, sec. A.

Further indications of the pattern of the dividend distributions are contained in table VIII. Dividend receipts of income taxpayers with net incomes (subject to tax) of $5,000 and over have amounted to around 55 percent or more of the net dividend outgo of the corporate system. The number of tax returns by this group has never numbered much more than 1,000,000. But only about 60 percent of these have shown dividend receipts. Thus, no more than 2 percent of the total number of families and single individuals of the nation have received around 55 percent or more of the dividends.

TABLE VIII.—*Dividend receipts reported by income taxpayers with net incomes of $5,000 and over, 1916–37*

[Money figures in millions of dollars]

Year	Net dividend outgo of the corporate system	Number of taxpayers (thousands)		Dividend receipts	
		Total	Reporting dividend receipts	Amount	Percent of net dividend outgo
1937	4,832	705	447	2,781	[1] 57.55
1936	4,702	677	433	2,584	[1] 54.96
1935	2,927	500	311	1,814	61.97
1934	2,642	423	265	1,585	59.99
1933	2,101	332	211	1,200	57.12
1932	2,626	356	240	1,541	58.68
1931	4,182	591	371	2,584	61.79
1930	5,613	816	495	3,709	66.08
1929	5,927	1,032	597	4,247	71.66
1928	5,166	1,011	569	4,010	77.62
1927	4,765	914	516	3,762	78.95
1926	4,439	895		3,581	80.67
1925	4,014	831		3,045	75.86
1924	3,424	697		2,618	76.46
1923	3,299	626		2,435	73.81
1922	2,634	594		2,173	82.50
1921	2,630	526		1,915	72.81
1920	2,900	682		2,364	81.52
1919	2,600	658		2,128	81.85
1918	2,620	479		2,133	81.41
1917	3,025	433		2,648	87.54
1916	2,500	272		2,098	83.92

[1] Tabulating procedure changed in 1936. See appendix I, sec. E.

Sources: U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes, except the net dividend outgo figures for 1916–21, the sources for which are given in appendix I, Sec. A.

Still more striking evidence of the character of the distribution is the amount of dividends received by the 25,000 taxpayers reporting the greatest amounts of dividend receipts (table IX and chart 7). For the years from 1927 to 1935, these 25,000 taxpayers, who represent much less than one-tenth of 1 percent of all families and single individuals, reported dividend receipts totaling from 37 to 42 percent of the net dividend outgo of the corporate system. In 1936 and 1937, the dividend receipts reported by the 25,000 taxpayers totaled about 30 percent of the net dividend outgo. The difference between the 2 periods is largely the result of a change in tabulating procedure which, on the one hand, eliminated duplicate reporting of some of the dividends received by fiduciaries which had occurred in the earlier period, and, on the other hand, eliminated all other dividends received by taxpayers through partnerships and fiduciaries from the dividend receipts category.[2] The latter elimination appears to have been the more important reason for the difference between the percentages for the 2 periods. Thus, it may be concluded that roughly 35 percent of the net dividend outgo of the corporate system has been received by 25,000 taxpayers.[3]

TABLE IX.—*Dividend receipts reported by 25,000 income taxpayers receiving the greatest amounts of dividends in each year, 1927–37*

[Money figures in millions of dollars]

Year	Net dividend outgo of the corporate system	Dividend receipts		Year	Net dividend outgo of the corporate system	Dividend receipts	
		Amount	Percent of net dividend outgo			Amount	Percent of net dividend outgo
1937	4,832	1,497	[1] 30.98	1931	4,182	1,563	37.37
1936	4,702	1,389	[1] 29.54	1930	5,613	2,060	36.70
1935	2,927	1,131	38.64	1929	5,927	2,222	37.49
1934	2,642	1,018	38.53	1928	5,166	[2] 2,084	40.34
1933	2,101	846	40.27	1927	4,765	1,978	41.51
1932	2,626	1,007	38.35				

[1] Tabulating procedure changed in 1936. See appendix I, sec. E.
[2] This figure was obtained from a tabulation comparable to those used for the other years. A corresponding figure of $2,089,000,000 was obtained from a special tabulation which included 222,000 returns in addition to the 569,000 in the tabulation on which the figure in the table is based.

Sources and methods: Based upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For methods, see appendix I, sec. F.

In summary, the distribution of dividends disbursed in each year of recent decades appears to have been roughly as follows:

1. Forty percent of the dividends were received by less than 0.1 percent of the families and single individuals.

2. Another 20 percent of the dividends were received by less than 1.0 percent of the families and single individuals.

3. Another 20 percent of the dividends were received by less than 2.0 percent of the families and single individuals.

4. The remaining 20 percent of the dividends were received by the remaining 96 percent or more of the families and single individuals with most of them receiving no dividends. Most of the dividends, it is clear, were received in relatively large amounts by a small section of the population while the remainder was spread over a much larger

[2] See appendix I, sec. E.
[3] See appendix I, sec. F.

section of the population in relatively small amounts. Briefly, there has been a high degree of concentration of dividends.

Variations in the percentage of dividends going to income taxpayers over the period are not reliable indicators of changes in the distribution of dividend receipts. Changes in revenue acts have affected both the reported dividend outgo and dividend receipts figures to a substantial extent, and, in addition, changes in tabulating procedure have also affected the figures. The most important of these changes are noted in appendix I, section E. Also noted in appendix I, section E, are the substantial effects of fluctuations in the national income upon the proportion of dividends received by income taxpayers. A much more detailed analysis than can be given here would be required to establish changes in the distribution of dividends among their recipients. All that the present analysis purports to establish is the general nature of that distribution.

However, it may be noted that the relative stability of the proportion of dividends received by the 25,000 largest recipients between 1927 and 1935 indicates no great change in the relative distribution of dividends during that period. That is to say, about the same proportion of the population received about the same proportion of the dividends in the late twenties as in the early and mid thirties. Actually, with an increasing population, the proportion of dividends received by the highest 25,000 recipients would decline were the relative distribution to remain the same. The data, however are too crude to show whether or not this has occurred. They do, however, show the bias—or rather the unreliability—of the year-to-year and long-term changes in the proportion of dividends going to all income taxpayers and to those with net incomes of $5,000 or more as a measure of changing distribution.

B. THE RELATIVE DEGREE OF DIVIDEND CONCENTRATION

It is not possible in this study to present all the available evidence bearing upon the extent of dividend concentration relative to the concentration in other forms of income. The material presented is only illustrative. More complete information is contained in the annual volumes of the Statistics of Income, in the report of the National Resources Board on Consumer Incomes, and in other sources.

This evidence shows that not only are dividend receipts highly concentrated, but that the degree of concentration of dividend income is far greater than the degree of concentration of total income receipts of individuals. For example, in 1935–36, 0.1 percent of all families and single individuals received about 5 percent of consumer income,[4] while a much smaller number of families and single individuals received around 35 percent of all dividends. Even the distribution of dividends among dividend recipients is more concentrated than the distribution of all income among all income recipients; in 1935–36 far less than 2.5 percent of all dividend recipients received about 40 percent of all dividends, while 2.5 percent of all families and single individuals received about 20 percent of all consumer income.[5] And that the

[4] National Resources Committee, Consumer Incomes in the United States, U. S. Government Printing Office: Washington, D. C., 1938, table II, p. 6.
[5] Ibid.

same disparities occur in other years is shown by the data in the annual volumes of the Statistics of Income.

Another way of showing the concentration of dividends relative to other income is in terms of the average size of dividend and of total income receipts. On the average, most dividends are received in relatively large amounts by a small section of the population. Thus for example, in 1935–36, 60 percent of the dividends were received in amounts averaging $6,000. Contrasted with this is the fact that in the same period about 60 percent of all consumer income was received in amounts averaging about $2,800.[6] Data for 1928 and 1929 provide another illustration of this disparity. In 1928—the year of the New Era period for which the best information on dividend distribution is available—4.2 billion dollars or over 80 percent of the dividends were received by 792,000 income taxpayers, so that on the average they received over $5,300 of dividend income. There is no directly comparable figure for 80 percent of all 1928 income; for 1929, an average of $4,000 is indicated by the Brookings study,[7] but this figure is probably considerably too high for comparison with 1928 dividend receipts.

The disparity between the concentration of wages (employees' compensation) and dividends is tremendous. Salaries, wages, commissions, etc. reported in 1929, for example, by the 150,000 income taxpayers receiving the greatest amounts of such income totaled about $2,666,000,000[8] or about 5 percent of the total employees' compensation as estimated by the United States Department of Commerce.[9] The comparable figure for the same number of dividend recipients is about 60 percent. In terms of the size of the amounts in which dividend and wage incomes have been received, the same differences in concentration are indicated. In 1929, for example, salaries, wages, commissions, etc. reported by income taxpayers as received in amounts of $10,000 or more totaled about 5 percent of all employees' compensation while over 50 percent of all dividends were received in amounts of $10,000 or more. The average sizes of these wage and dividend receipts were about $19,000 and $38,000, respectively.

C. THE EFFECT OF DIVIDEND CONCENTRATION ON THE DISTRIBUTION OF INCOME

The concentration of dividend income accounts for the major part of the wide spread between the incomes of individuals. For example, the major share of the difference between the average $50,000 income and the average $1,000,000 income is due to the difference between the average amount of dividends included in those incomes. On the average, individuals attain the higher incomes largely because they receive large amounts of dividends. The spread between the average high income (highest 0.2 percent, for example) and the average income would be considerably reduced were dividend receipts less concentrated. This is the import of the data contained in table X and plotted in charts 8 and 9.

[6] Ibid.
[7] Leven, Moulton, and Warburton, America's Capacity to Consume, The Brookings Institution: Washington, D. C., 1934, pp. 152–153, 227–230.
[8] U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1929, Government Printing Office: Washington, D. C., 1931, p. 11.
[9] Nathan, Robert R., Income in the United States, 1929–37, U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, November 1938, p. 22.

TABLE X.—*Approximate relation between gross income and dividend receipts, 1929, 1932, and 1936*

INCOME TAXPAYERS

[Money figures in dollars]

Year and average gross income	Dividend receipts		Difference between successive average gross incomes	
	Approximate average	Percent of gross income	Amount	Percent accounted for by dividend receipts
1936: [1]				
$2,411	$125	5.2		
5,000	551	11.0	$2,589	16.5
10,000	1,825	18.3	5,000	25.5
25,000	7,843	31.4	15,000	40.1
50,000	20,306	40.6	25,000	49.9
100,000	49,402	49.4	50,000	58.2
150,000	79,997	53.3	50,000	61.2
300,000	181,984	60.7	150,000	68.0
500,000	328,915	65.8	200,000	73.5
1,000,000	704,117	70.4	500,000	75.0
1932:				
$2,532	123	4.8		
5,000	606	12.1	2,468	19.6
10,000	1,890	18.9	5,000	25.7
25,000	7,948	31.8	15,000	40.4
50,000	20,707	41.4	25,000	51.0
100,000	54,096	54.1	50,000	66.8
150,000	90,363	60.2	50,000	72.5
300,000	218,431	72.8	150,000	85.4
500,000	397,340	79.5	200,000	89.5
1,000,000	867,133	86.7	500,000	94.0
1929:				
$3,301	179	5.4		
5,000	419	8.4	1,699	14.1
10,000	1,608	16.1	5,000	23.8
25,000	7,827	31.3	15,000	41.5
50,000	20,992	42.0	25,000	52.7
100,000	49,835	49.9	50,000	57.7
150,000	76,435	51.0	50,000	53.2
300,000	167,709	55.9	150,000	60.9
500,000	299,428	59.9	200,000	65.9
1,000,000	625,278	62.5	500,000	64.7

[1] Tabulating procedure changed in 1936. See appendix I, sec. E.

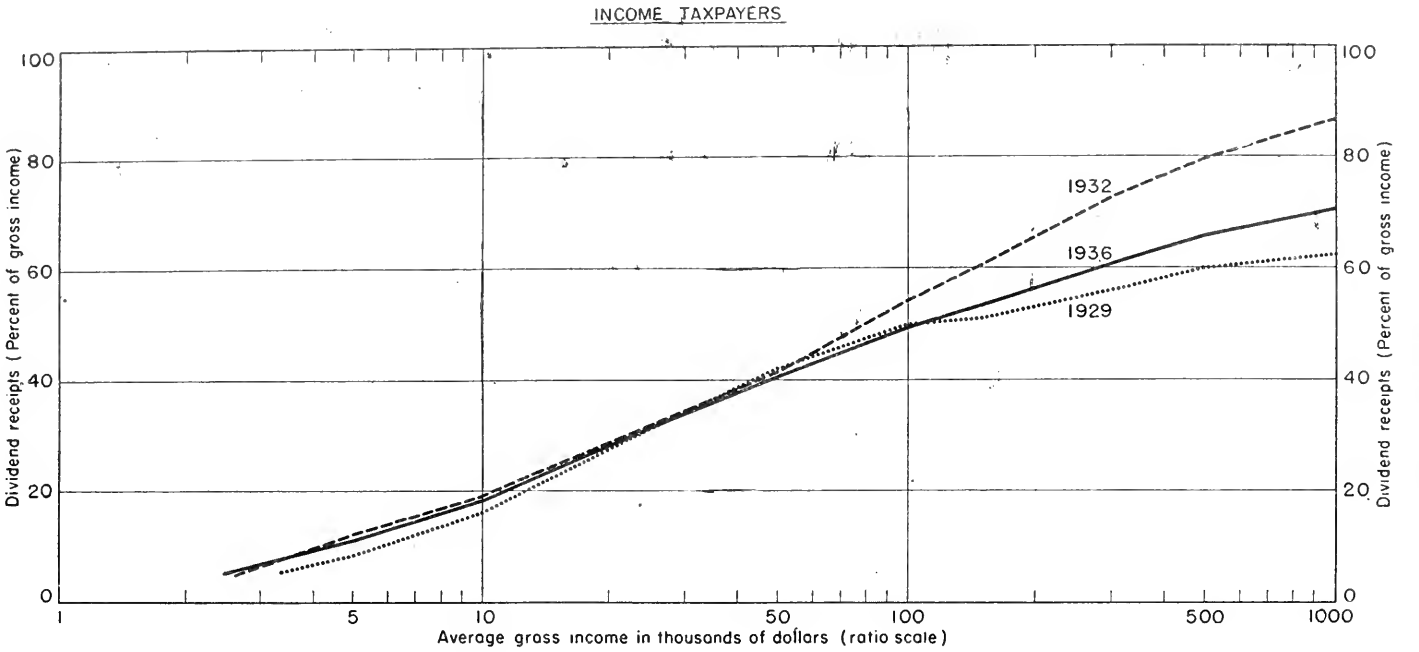
Sources and methods: Based upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For methods, see appendix I, sec. G.

Differences between incomes of less than $10,000 have, on the average, been primarily due to differences in income receipts other than dividends. For example, in 1936 only about one-sixth of the difference between the average $2,500 and the average $5,000 income was due to dividends. And, in that year, dividends accounted for about 25 percent, or $1,300, of the difference between the average $10,000 income and the average $5,000 income. The average income of $10,000 included about $1,800 of dividends.

For incomes above $10,000, dividends have played a much more important role. Over 50 percent, or almost $48,000, of the difference between the average 1936 income of $100,000 and the average 1936 income of $10,000 was the result of the difference in average dividend income. The comparable figures for the difference between a $100,000 income and a $1,000,000 income, on the average, are 73 percent and $655,000, of the income difference. In general, greater and greater proportions of successive increments of income are accounted for by increases in dividend receipts. And the figures for 1936 understate the effect of dividends on the distribution of income because some dividend receipts were reported as partnership and fiduciary income.

Chart 8

APPROXIMATE RELATION BETWEEN GROSS INCOME AND DIVIDEND RECEIPTS
1929, 1932, AND 1936



Sources and Methods Based upon *STATISTICS OF INCOME*.
For details see Appendix I, Section G

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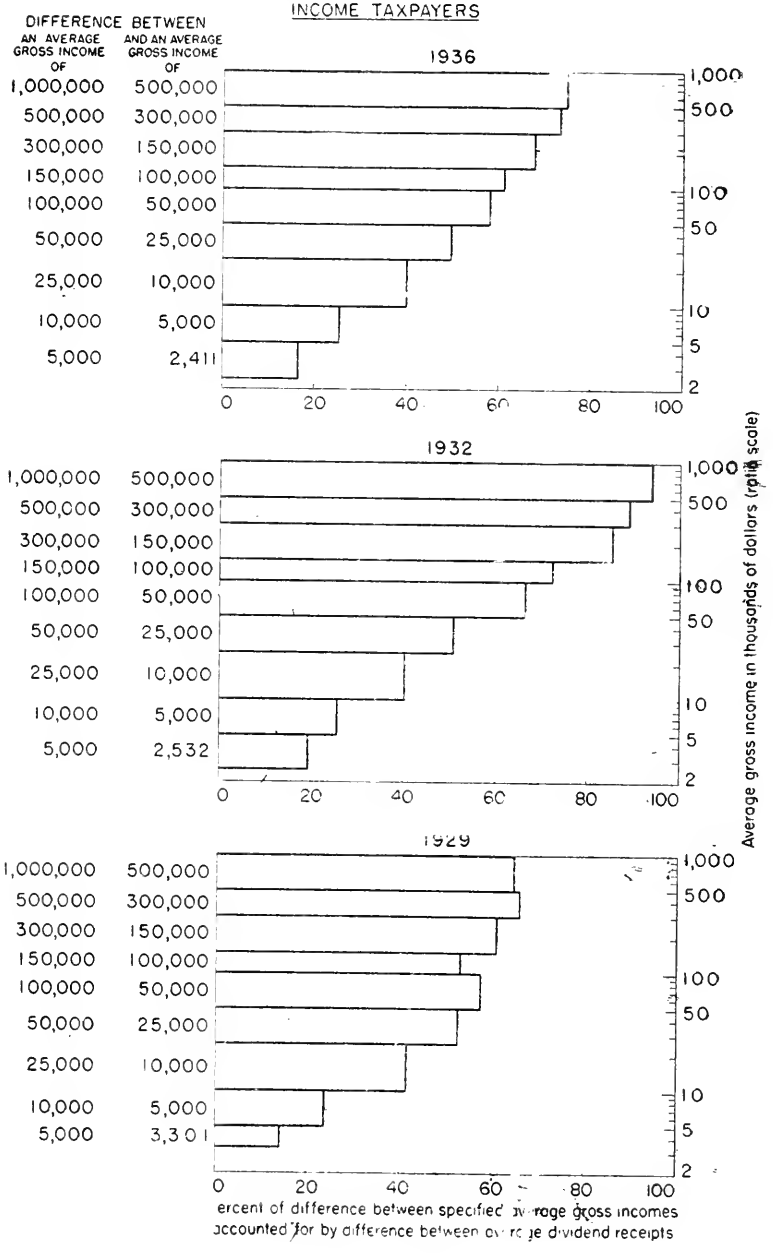
Chart 9

PERCENTAGE OF DIFFERENCE BETWEEN SELECTED GROSS INCOMES ACCOUNTED FOR BY DIVIDEND RECEIPTS
1929, 1932, and 1936

INCOME TAXPAYERS



Sources and Methods Based upon *STATISTICS OF INCOME*
For details, see Appendix I, Section G

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The broad picture of the relation between dividends and total income has not changed in recent decades—not even with major changes in business activity. Table X and charts 8 and 9 show that the same general relation existed in 1929 and 1932 as in 1936. The 1932 data show somewhat higher and the 1929 somewhat lower proportions of dividends for various—particularly the high—income levels than in 1936. In part, these differences are the result of the income scales being in terms of current dollars rather than of "real" income. But perhaps of greater importance are capital gains. These (and capital losses) were excluded from the total incomes on which figures in this report are based, but were included (but not wholly) in the computations of net income upon which the underlying income distribution was based. The consequence of this is to bias the percentages downward inversely with the net capital gains excluded—the greater the net gains excluded the larger the downward bias. For 1929, 3.8 million dollars of net gains were excluded; in 1932, only $200,000,000 of net losses; and in 1936, about $850,000,000 of net gains, so that relative to 1936, 1929 is biased downward to a marked extent and 1932 upward to some extent.

Other factors also are reflected in the differences between the 3 years but they do not appear to loom as large as the two mentioned. Of these other factors, the greater stability of dividend payments than of other forms of income during the depression appears to have been the most important in accounting for the higher proportions of dividend income in 1932 than in 1936 and 1929.

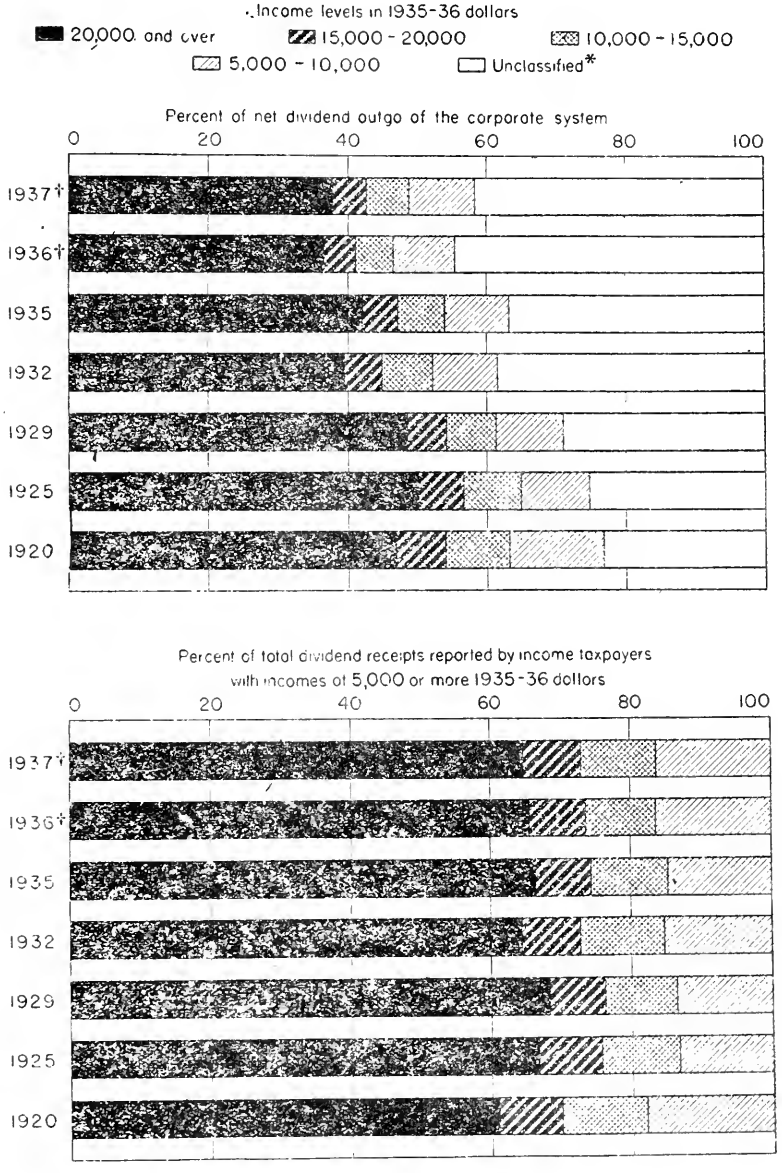
D. INCOME LEVELS (IN 1935–36 DOLLARS) OF DIVIDEND RECIPIENTS

On the basis of available information, it is not possible to determine how all dividends are distributed according to the income level of the recipients. But approximations for most dividends can be obtained from the official tabulations of tax returns. For 7 of the years from 1920 to 1937 such approximations are shown in table XI and chart 10.

Most dividends have been received by individuals in the middle and high income levels. Between 40 and 50 percent of all dividends have been received by individuals with incomes (exclusive of capital gains and losses) of 20,000 or more 1935–36 dollars. Another 20–25 percent, approximately, have been received by individuals with incomes between 5,000 and 20,000 1935–36 dollars. All told, between 60 and 75 percent of all dividends have been received by individuals with incomes of 5,000 or more 1935–36 dollars. The exact proportion tends to vary with business activity, particularly for the "20,000 and over" income level.

At first sight, the figures in table XI seem to indicate long-term changes in the relative volume of dividends going to individuals at various income levels with the proportion going to the "under 5,000" level gradually increasing since 1920. Yet a closer examination of the data indicates such a conclusion to be of extremely doubtful validity. In fact, the more appropriate conclusion seems to be that there has been no marked change in the relative distribution of dividends according to the income level of recipients during the past two decades.

Chart 10
PERCENT DISTRIBUTION OF DIVIDENDS BY THE INCOME LEVEL OF RECIPIENTS, SELECTED YEARS, 1920-1937



*Includes dividends not reported as dividends by income taxpayers.

† Tabulating procedure changed in 1936. See Appendix I, Section E.

Sources and Methods: Based largely upon *STATISTICS OF INCOME*. For details, see Appendix I, Sections A, E, and H.

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TABLE XI.—*Dividend receipts classified by the income level of the recipients, selected years, 1920–37*

Year	Net dividend outgo of the corporate system	Unclassified [1]	Income level in thousands of 1935–36 dollars				
			Total, 5 and over	5–10	10–15	15–20	20 and over
	Amount in millions of current dollars						
1937 [2]	4,832	2,008	2,824	466	301	231	1,826
1936 [2]	4,702	2,092	2,610	425	258	211	1,716
1935	2,927	1,079	1,848	274	197	148	1,229
1932	2,626	1,010	1,616	246	195	136	1,039
1929	5,927	1,720	4,207	572	426	334	2,875
1925	4,014	1,014	3,000	400	329	263	2,008
1920	2,900	670	2,230	400	268	202	1,360
	Percent of net dividend outgo						
1937 [2]	100.0	41.6	58.4	9.6	6.2	4.8	37.8
1936 [2]	100.0	44.5	55.5	9.0	5.5	4.5	36.5
1935	100.0	36.8	63.2	9.4	6.7	5.1	42.0
1932	100.0	38.5	61.5	9.4	7.4	5.2	39.5
1929	100.0	29.0	71.0	9.7	7.2	5.6	48.5
1925	100.0	25.3	74.7	9.9	8.2	6.6	50.0
1920	100.0	23.1	76.9	13.8	9.2	7.0	46.9
	Percent of dividend receipts reported by income taxpayers with incomes of 5,000 or more 1935–36 dollars						
1937 [2]	.....	.....	100.0	16.5	10.7	8.2	64.6
1936 [2]	.....	.....	100.0	16.3	9.9	8.1	65.7
1935	.....	.....	100.0	14.8	10.7	8.0	66.5
1932	.....	.....	100.0	15.2	12.1	8.4	64.3
1929	.....	.....	100.0	13.6	10.1	7.9	68.4
1925	.....	.....	100.0	13.3	11.0	8.8	66.9
1920	.....	.....	100.0	17.9	12.0	9.1	61.0

[1] Includes dividends not reported as dividends by income taxpayers.
[2] Tabulating procedure for individual tax returns changed in 1936. See appendix I, sec. E.

Sources and methods: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods, see appendix I, secs. A, E, and H.

Figures in table XI for the "unclassified" category only show a largely spurious relative growth. Under this category are included, not only dividends received by individuals estimated to fall below the "5,000" income level, but also dividends received (*a*) by nonprofit institutions and other corporations not required to file tax returns, (*b*) by income taxpayers estimated to fall above the "5,000" income level, but not reported as such, and (*c*) by non-income-taxpayers falling above the "5,000" income level. While exact figures are not available, it is known that the scope of nonprofit institutions has increased over the period. From the point of view of the way in which they dispose of dividends, they should be classified with the "20,000 and over" income level. The inclusion of dividends of income taxpayers not reported as dividends affects mainly the comparability of the 1936 and 1937 figures with those for other years. For 1936 and 1937 dividends received through partnerships and fiduciaries were not reported as dividends and this appears to account for the bulk of the shift in the relative distribution of dividends between 1935 and 1936.[10]

[10] See appendix I, secs. E and F.

Also, in part spurious, is the difference shown by the figures between the New Era and post New Era percentages of dividends received by individuals in the "20,000 and over" income level. On the basis of available information, distributions based upon statutory net income could not be fully recast into distributions based upon total income exclusive of capital gains and losses. Hence, largely because of the different volumes of capital gains and losses in the two periods, the New Era figures are biased upward while those for the thirties are biased downward. For 1920, errors arising on this account do not appear to be as great as for other years.

But parts of the differences between years shown by the figures for the "20,000 and over" income level are real. Dividend income is more stable than nondividend income. Consequently, dividend recipients whose major income is dividends tend to have their income level relative to other income recipients raised during periods of falling activity and declining prices and vice versa. For dividend recipients whose major income is not from dividends, the reverse tends to be true. On balance, however, it appears that, in spite of the greater stability of dividend income, there is, on the average, a downward drift of the income levels of dividend recipients during periods of declining activity and vice versa. But, of course, these movements are not as great as for the population as a whole.

CHAPTER VII

SAVINGS OUT OF CORPORATE PROFITS

All retained profits are, of course, savings. But savings are also made out of dividends and other forms of profit disbursements. Thus, the total volume of savings out of profits would be the sum of the retained profits and of the savings out of the external disbursements of profits. Since the volume of profits disbursed in forms other than dividends is not known, the savings out of such disbursements cannot be estimated. The estimates of savings from corporate profits must, therefore, be restricted to the sum of retained profits and savings out of dividends.

A. THE RELATION BETWEEN THE SAVINGS AND THE INCOME LEVEL OF INDIVIDUALS

The consequence of the concentration of dividend receipts in the middle and high income brackets—or, alternatively, of the concentration of wealth—is a high rate of savings out of dividends. This is so because the proportion of income saved by individuals increases very rapidly as the amount of income received increases.

TABLE XII.—*Average savings of families and single individuals by income level, 1935–36*

Income level	Number of families and single individuals	Average income	Savings	
			Average amount	Percent of income
Under $500	6,710,911	$307	−$119	−38.8
$500 to $750	5,771,960	626	−66	−10.5
$750 to $1,000	5,876,078	873	−43	−4.9
$1,000 to $1,250	4,990,995	1,120	−19	−1.7
$1,250 to $1,500	3,743,428	1,365	25	1.9
$1,500 to $1,750	2,889,904	1,613	68	4.2
$1,750 to $2,000	2,296,022	1,835	107	5.8
$2,000 to $2,500	2,958,611	2,221	198	8.9
$2,500 to $3,000	1,475,474	2,714	326	12.0
$3,000 to $4,000	1,354,078	3,396	548	16.1
$4,000 to $5,000	464,191	4,405	934	21.2
$5,000 to $10,000	595,908	6,867	2,044	29.8
$10,000 to $15,000	152,682	11,442	4,449	38.9
$15,000 to $20,000	67,923	17,293	6,953	40.2
$20,000 and over	110,135	42,175	21,432	50.8
All levels	39,458,300	1,502	151	10.1

Source: National Resources Committee, Consumer Expenditures in the United States. U. S. Government Printing Office: Washington, D. C., 1939. Table 19A, p. 83.

A recent report [1] of the National Resources Committee shows that in 1935–36 about 50 percent of gross income (before taxes) was on the average saved by families and single individuals with incomes of $20,000 and over; for the $5,000–$10,000 income level, about 30

[1] Consumer Expenditures in the United States: Estimates for 1935-36, U. S. Government Printing Office: Washington, D. C., 1939.

percent was saved; for the $1,500–$2,000 level about 5 percent; and below the $1,250 level there were, on the average, dissavings. Complete figures from the report are shown in table XII. The spread between the percentages of income saved would be even greater had the computations been made on the basis of gross income after income taxes rather than before such taxes.

Figures for the percentages of income saved at various income levels shown in table XII were not the ones used in preparing the estimates of savings out of dividends presented in this study. In order to take partial account of the changing tax rates, they were converted to an income after taxes base. The adjusted percentages are shown in table XIII. Comparison of the adjusted percentages with the corresponding figures in table XII shows that there is only one major difference; on an income after taxes base the percentage saved by the "$20,000 and over" income level is 57.7, whereas the figure on an income before taxes base was 50.8 percent. In both cases, the same income level classification is maintained.

TABLE XIII.—*Estimated percent of income after taxes saved, by income level, 1935–36* [1]

	Savings out of income after taxes (percent)
Income level:	
$5,000 to $10,000	30.28
$10,000 to $15,000	40.18
$15,000 to $20,000	41.90
$20,000 and over	57.69

[1] Taxes include only personal income taxes, poll taxes and certain personal property taxes.

Source: Based upon National Resources Committee, Consumer Expenditures in the United States, U. S. Government Printing Office: Washington, D. C., 1939. Table 19A, p. 83. For methods see appendix I, sec. H.

B. THE MEASUREMENT OF SAVINGS OUT OF DIVIDENDS

The amount saved out of dividends depends only in part upon the size of the amounts in which they are received. Not only will the proportion saved from dividends be greater, on the average, the larger the amount of dividends received, but the proportion of other income saved will also be greater, the greater the amount of dividends received. This dependence of savings from dividends upon both the amount of dividend income and upon the amount of other income makes it practically impossible to determine the exact volume of savings out of dividends.

A maximum limit for savings attributable to dividends can be obtained by considering dividends as the final increment of income and attributing the increment of total savings based upon such an increment to dividends. On the other hand, a minimum limit can be obtained by considering dividends as if they were the only income. The difference between the two figures thus obtained represents the range of indeterminancy for the volume of savings out of dividends.

Both limits could have been estimated, though with considerable labor and possibly with substantial error for the maximum. Instead an arbitrary assumption was introduced in order to obtain an intermediate estimate. This assumption was that the proportion of sav-

ings attributable to dividends was the same as the proportion of gross income accounted for by dividends. While valuable information contained in the spread between the upper and lower limits was lost, a substantial amount of computing was avoided. At any rate, the intermediate estimates actually computed are sufficient indications of the division between consumption expenditures and savings for the purposes of this report. And, in fact, for various reasons to be discussed later, the estimates actually made tend to be very close to the minimum limits.

C. SAVINGS OUT OF DIVIDENDS

Well over 40 percent of the dividends received by income taxpayers with incomes of 5,000 or more 1935–36 dollars have been saved. These savings out of dividends have amounted to at least 25–35 percent of all dividend disbursements of the corporate system. In the years since 1920 such savings have ranged from a total of around $700,000,000 in 1932 to a total of no less than $2,000,000,000 in 1929.

Estimates for 7 of the years from 1920 to 1937 shown in table XIV are crude figures which substantially understate the total volume of savings out of all dividends. As estimates for dividends reported as dividends by income taxpayers with incomes of 5,000 or more 1935–36 dollars, the low estimates shown in table XIV are much closer to the minimum than to the maximum limit of savings attributable to dividends. This is indicated by the fact that test calculations of the minimum limits for 1929, 1935, and 1937 were only about 17 percent below the low estimates. That there should be a close correspondence follows from the fact that so great a proportion of dividends are received by persons for whom dividends are a major, if not the major, source of income.

TABLE XIV.—*Savings out of dividends, selected years, 1920–37—Low estimates; income taxpayers with incomes of 5,000 or more 1935–36 dollars*

[Money figures in millions of dollars]

Year	Net dividend outgo of the corporate system	Dividend receipts reported		Low estimate of savings		
		Amount	Percent of net dividend outgo	Amount	Percent of dividend receipts	Percent of net dividend outgo
1937 [1]	4,832	2,824	58.4	1,192	42.2	24.7
1936 [1]	4,702	2,610	55.5	1,075	41.2	22.9
1935	2,927	1,848	63.1	806	43.6	27.5
1934	2,642					
1933	2,101					
1932	2,626	1,616	61.5	735	45.5	28.0
1931	4,182					
1930	5,613					
1929	5,927	4,208	71.0	1,973	46.9	33.3
1928	5,166					
1927	4,765					
1926	4,439					
1925	4,014	3,000	74.8	1,396	46.5	34.8
1924	3,424					
1923	3,299					
1922	2,634					
1921	2,630					
1920	2,900	2,230	76.9	940	42.2	32.4

[1] Tabulating procedure for individual tax returns changed in 1936. See appendix I, sec. E.

Sources and methods: See appendix I, secs. A, E, and H.

Furthermore, for the twenties, the estimates are considerable understatements of even the low estimates, particularly during the low-tax-rate years 1925 to 1929. It is practically impossible to measure the extent of the bias. An indication of the bias arising because of inadequate adjustments for the changing tax rates over the period is provided by the summary of the effective tax rates on statutory net income shown in table XV. The lower the tax rate relative to the 1935–36 rates, the greater the downward bias on this account in the estimates shown in table XIV as estimates of the savings out of dividends by income taxpayers with incomes of 5,000 or more 1935–36 dollars.

TABLE XV.—*Effective tax rates on statutory net income of individual income taxpayers, 1916–37—Selected net income classes*

[Percent of net income]

Year	Net income classes (thousands of dollars)					Year	Net income classes (thousands of dollars)				
	10–25	50–100	150–300	500–1,000	1,000 and over		10–25	50–100	150–300	500–1,000	1,000 and over
1937	6.66	23.60	48.06	64.82	71.95	1926	1.98	10.14	15.72	16.88	16.56
1936	6.68	23.65	47.86	64.31	71.66	1925	2.09	10.42	15.73	16.39	15.83
1935	5.69	21.06	41.15	51.92	56.36	1924	2.73	12.81	24.69	26.87	30.27
1934	5.55	20.89	41.14	51.70	55.75	1923	4.06	13.06	23.83	26.81	23.53
1933	4.94	14.34	29.03	37.43	31.96	1922	5.48	17.89	37.03	35.81	35.02
1932	4.32	11.99	27.04	32.86	46.75	1921	6.48	19.87	42.14	58.70	63.59
1931	1.59	8.48	13.58	15.11	16.19	1920	6.76	20.20	43.04	57.08	63.81
1930	1.70	9.51	14.91	16.20	16.98	1919	6.83	20.79	43.94	59.42	64.87
1929	1.49	9.77	14.64	15.86	15.76	1918	8.20	21.69	44.64	58.65	64.65
1928	2.05	10.47	15.77	17.35	16.70	1917	4.78	10.04	18.27	27.63	35.65
1927	1.98	10.20	15.72	16.99	16.42	1916	.94	2.25	4.75	8.14	11.09

Source: U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1937, pt. I, pp. 40–41.

As estimates of total savings out of all dividends the figures in table XIV are undoubtedly very low estimates. Savings out of from 25 to 45 percent of all dividends are not included because of the shortcomings in the underlying data on dividends indicated in the preceding chapter. While the rate of savings for the dividends not covered is much lower than for that for the dividends covered by the estimates, except possibly in 1936 and 1937, yet the amount of savings is not negligible. This is particularly true for 1936 and 1937 when a substantial volume of dividends accruing to income taxpayers above the "5,000" income level were not reported as dividends. In other years, the volume of savings out of the dividends not covered, of course, is relatively much less than in 1936 and 1937. Nevertheless, at least 50–100 million dollars of savings are not included in the figures with the greatest omissions occurring for the years after 1929. This, of course, tends to offset in part the warping of estimates arising out of the changing tax rates.

On the whole it is clear that the estimates in table XIV substantially understate the volume of savings out of all dividends. Furthermore, the understatement is very likely greater for 1925, 1929, 1936, and 1937 than for the other years for which data are shown.

As much as 40 percent of the net dividend outgo of the corporate system was probably saved in the years of relatively high dividend disbursements during the twenties. In other years of the twenties

probably around 35 percent was saved. And during the depressed years of the thirties savings out of dividends may have amounted to as little as 30 percent of the net dividend outgo of the corporate system.

D. TOTAL SAVINGS OUT OF PROFITS

Retained profits plus the low estimates of savings out of dividends provide low estimates of total savings out of profits reported as such by the corporate system. Such estimates of total savings out of profits are shown in table XVI and plotted in chart 11. For 7 of the years, the estimates were computed from basic data; for the remaining years they were based upon the seven computed estimates.

TABLE XVI.—*Savings out of the net profits of the corporate system, 1909–37*

[Money figures in millions of dollars]

Year	Net profit of the corporate system [1]	Savings out of profits			
		Total		Retained profits	Out of dividends [2]
		Amount	Percent of net profit		
1937 [3]	3,872	232	6.0	−960	1,192
1936 [3]	3,903	27	7.1	−799	1,075
1935	1,674	−447	−26.7	−1,253	806
1934	157	−1,746	−1,112.1	−2,485	739
1933	−2,379	−3,868	162.6	−4,480	612
1932	−5,375	−7,266	135.2	−8,001	735
1931	−3,145	−6,075	193.2	−7,327	1,252
1930	1,366	−2,586	−189.3	−4,247	1,661
1929	8,084	4,130	51.1	2,157	1,973
1928	7,566	4,135	54.7	2,400	1,735
1927	5,880	2,715	46.2	1,115	1,600
1926	6,774	3,825	56.5	2,335	1,490
1925	6,971	4,353	62.4	2,957	1,396
1924	4,998	2,722	54.5	1,574	1,148
1923	5,827	3,634	62.4	2,528	1,106
1922	4,380	2,628	60.0	1,746	882
1921	24	−1,726	−7,191.7	−2,606	880
1920	4,343	2,383	54.9	1,443	940
1919	6,307	4,507	71.5	3,707	800
1918	4,553	2,739	60.2	1,933	806
1917	7,342	5,238	71.3	4,317	921
1916	7,408	5,744	77.5	4,908	836
1915	4,083	2,714	66.5	2,028	686
1914	2,371	1,020	43.0	343	677
1913	3,347	1,904	56.9	1,180	724
1912	3,425	2,126	62.1	1,475	651
1911	2,531	1,288	50.9	665	623
1910	2,906	1,688	58.1	1,678	610
1909	2,599	1,554	59.8	1,032	522

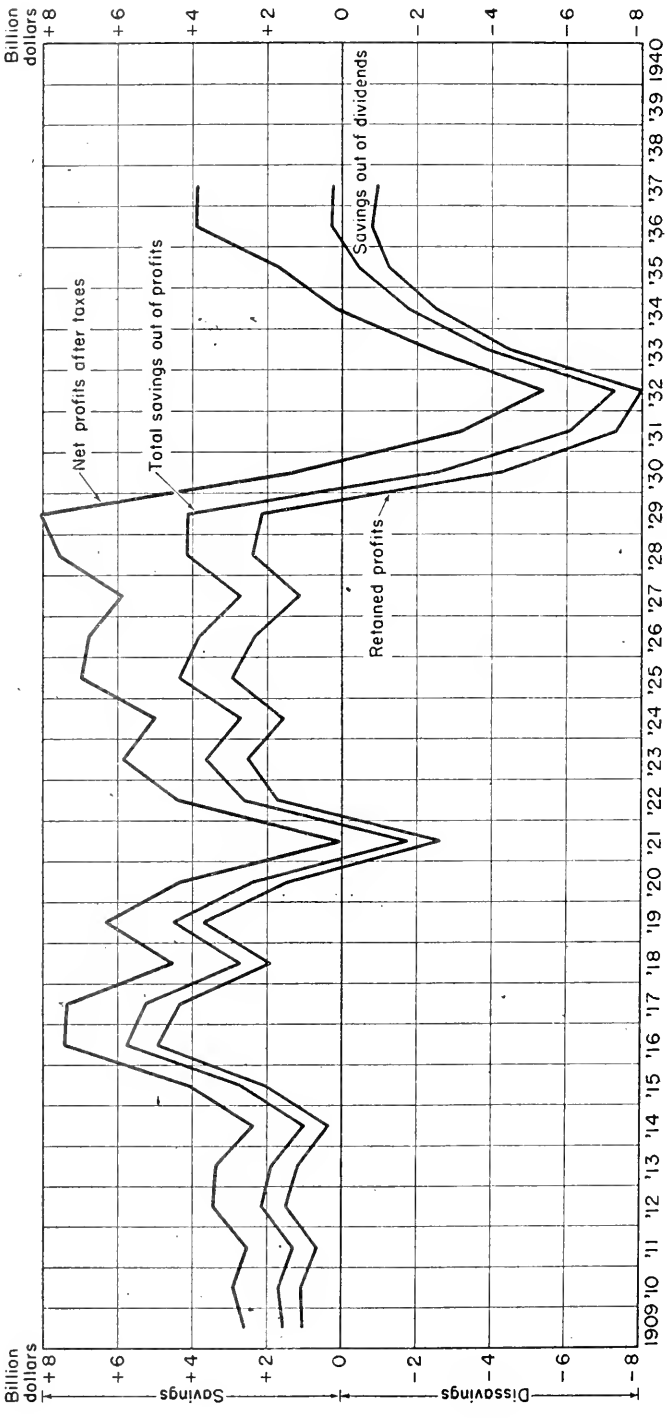
[1] Excluding intercorporate dividends and Federal income and war, excess, and undistributed profits taxes.
[2] Figures for 1920, 1925, 1929, 1932, 1935, 1936, and 1937, computed low estimates; others based upon those computed estimates.
[3] Tabulating procedure for individual tax returns changed in 1936. See appendix I, sec. E.

Sources and methods: See appendix I, secs. A, E, and H.

The volume of savings has varied with the volume of profits and the proportion of profits retained in the corporate system. That the volume of savings depends upon the volume of profits is illustrated by a comparison between 1920 and 1928. With about the same proportion of profits retained in both years, savings and profits were about 75 percent higher in 1928 than in 1920. That the proportion of profits retained has a marked effect on the volume of savings is

Chart II

SAVINGS OUT OF THE NET PROFITS OF THE CORPORATE SYSTEM, 1909-1937



Sources and Methods: See Appendix I, Sections A, E, and H

illustrated by a comparison between 1925 and 1929. Total savings out of profits in 1929 were less than in 1925 although profits were over $1,000,000,000 greater in 1929 than in 1925. This was largely the consequence of the fact that 42 percent of 1925 profits were retained while only 27 percent of 1929 profits were retained. Thus, in the final analysis, the volume of savings out of a given volume of profits depends, in addition to the distribution of dividends among the various income classes, upon the forces determining the proportion of profits retained. In general, this is a matter of the need of the corporate system for funds and of the relative advantages of obtaining them by retaining profits.

Potential savings out of profits amount, of course, to 100 percent of profits since no profits might be disbursed. As a matter of actual experience, however, it seems that about 80 percent represents an upper limit for the proportion of profits saved. Such a high percentage occurred under the extreme inflationary conditions of the World War when the need for money capital was great. Under more normal conditions, it seems that 65–70 percent represents an upper limit as is indicated by the 62 percent figure for 1912, 1923, and 1925. And, in general, during periods when the corporate system has been in need of funds, and even at times when it has not needed funds, the proportion of profits saved has been well over 50 percent as is indicated by the figures for 1909–29.

From 1930–38, the corporate system as such was actually dissaving. This is shown by the negative retained profit figures in table XVI. Between 1930 and 1935, the amount of savings out of dividends was not sufficient to offset the internal dissavings so that for those 6 years the corporate equity accounts gave rise to dissavings, i. e., either creating potential consumption out of past savings or actually consuming savings accumulated in the past.[2] The greatest volume of this apparently occurred in 1932 when the total dissavings created by the profit account amounted to about $7,300,000,000. In 1936 and 1937, the amount of savings out of dividends more than offset the internal dissavings so that on balance the corporate equity accounts gave rise to savings. The volume, however, was small.

E. COMPARISON OF PRIVATE INCOME AND TOTAL PRIVATE SAVINGS WITH CORPORATE PROFITS AND SAVINGS OUT OF CORPORATE PROFITS

Table XVII contains figures indicating the proportions of nongovernmental income and savings accounted for by corporate profits.[3] With the exception of 1932, when corporate losses amounted to 18 percent of the income originating in nongovernmental activities, corporate profits or losses since 1919 have never amounted to more than 11 percent of such income. But the savings or dissavings created by the corporate equity accounts have accounted for much greater percentages of the total savings or dissavings out of privately originating income.

[2] The amount of corporate dissavings is not an accurate measure of the net contribution of the corporate system in the sense of stimulating activity. Offsets, such as cash accumulations and debt retirements, have to be taken into account.

[3] The nongovernmental income and savings figures include income realized by businesses from the various valuation changes—such as capital gains—which is ordinarily passed through current income accounts of businesses, but do not include such income which accrues to individuals. Hence they are not strictly comparable with the profit and savings out of profits figures. This lack of comparability is much more serious for the savings comparisons than for the income comparisons.

TABLE XVII.—*Corporate profits and savings out of corporate profits and total private income and savings, 1919–34*

[Money figures in millions of dollars]

Year	Privately originating income			Savings out of privately originating income		
	National total	Corporate profits		National total	Out of corporate profits	
		Amount	Percent of national total		Amount	Percent of national total
1937		3,872			232	
1936		3,903			276	
1935		1,674			−447	
1934	41,795	157	0.4	790	−1,746	−221.0
1933	32,744	−2,379	−7.3	−2,207	−3,868	175.3
1932	30,185	−5,375	−17.8	−6,691	−7,266	108.6
1931	44,541	−3,145	−7.1	−4,406	−6,075	137.8
1930	60,445	1,366	2.3	−1,407	−2,586	183.8
1929	75,680	8,084	10.7	9,366	4,130	44.1
1928	72,417	7,566	10.4	6,929	4,135	59.7
1927	68,752	5,880	8.5	6,696	2,715	40.5
1926	70,261	6,774	9.6	6,785	3,825	56.4
1925	68,387	6,971	10.2	10,242	4,353	42.5
1924	63,722	4,998	7.8	6,072	2,722	44.8
1923	63,864	5,827	9.1	9,577	3,634	37.9
1922	54,670	4,380	8.0	6,319	2,628	41.6
1921	46,489	24	0.05	−2,680	−1,726	64.4
1920	63,863	4,343	6.8	8,426	2,383	28.3
1919	63,017	6,307	10.0	18,810	4,507	24.0

Sources: Privately originating income and total savings out of privately originating income—Kuznets, Simon, National Income and Capital Formation, 1919–35, National Bureau of Economic Research: New York, 1938, and "Commodity Flow and Capital Formation * * *, 1932–38," Bulletin 74 of National Bureau of Economic Research: New York, June 25, 1939.
Savings out of corporate profits—see table XVI.

During the period 1922–29, savings out of profits ranged upward of 40 percent of all savings out of income originating in nongovernmental activities although corporate profits totaled less than 11 percent of such income. Any allowance which should be made in the figures for total private savings because of the exclusion of income realized outside the business system from changes in capital would not involve any substantial reduction in the figures for the percentage of private savings accounted for by profits.

In both 1919 and 1920, the proportion of private savings accounted for by corporate profits was only 25 percent—still high relative to the 10 and 7 percent, respectively, of privately originating income accounted for by corporate profits, but low relative to the New Era period. The explanation of this probably lies in the peculiar price and inventory situation during the immediate post-war period. The sharp price decline of late 1920 was heavily reflected in corporate profit and loss statements, particularly in the form of inventory losses, while losses outside the business system resulting from changes in values of assets were not (at least not as fully) reflected in the income originating figures. In 1919 it appears that the effects of price changes were more heavily reflected outside than within the corporate sphere.[4]

During the period 1930–35 and in 1921, the corporate equity accounts gave rise to dissavings. These dissavings appear to have

[4] The 1919 percentage is probably too low as a consequence of shortages in the tabulation of tax returns. See appendix I, sec. A.

accounted for a greater share of the total private dissavings than profits or losses did of the total private income. In 1921, corporate equity accounts accounted for about 65 percent of all private dissavings shown by the figures. During the period 1930–33, corporate profits accounted for all of the private dissavings shown by the figures and more. A closely similar situation existed in 1934 and 1935 although the figures indicate the private economic sphere as a whole was saving. But the proportions of total private dissavings accounted for by profits during the 1930–35 period, and in 1921, are exaggerated by the figures since losses outside the corporate system realized from changes in asset values are not fully reflected in the data.

Data on income and savings for years later than 1934 comparable to those shown in table XVII are not available. From such data as are available, it appears that in 1936 and 1937 the proportion of private savings accounted for by corporate profits was roughly of the same order of magnitude as the proportion of privately originating income accounted for by profits. In 1938, the corporate equity accounts appear to have given rise to a small volume of dissavings although the rest of the private sphere probably was saving. And, since 1938, it appears that much more than a proportionate share of private savings has originated in the corporate equity accounts.

Corporate profits account for a high proportion of savings during periods when activity is fairly high relative to capacity. At such levels of activity, profit margins are high on the average. In some areas, generally of broad scope, pressure on capacities creates not only high profits, but also a need for funds. Thus, a substantial porportion of profits is retained for expansion purposes, i. e., saved directly. In addition, dividends are at high levels and substantial proportions are saved. While other forms of income are also at high levels, the proportion saved on the average is considerably smaller than for dividends and retained profits.

Furthermore, it may be noted that the greater the pressure on capacity, the more favorable the profit situation. As a consequence, where funds are needed for expansion, the profit account acquires them and converts them into savings at the rate necessary. If this falls short of the funds needed for expansion, then recourse is had to the capital markets.

As activity drops off, it is the profit account which absorbs a more than proportionate part of the decline in income. But as activity and profits decline, the need for funds also declines and it is not dividends but rather retained profits which are curtailed first, so that the proportion of profits saved drops rapidly, particularly in periods such as 1930–33 when losses were retained. At the same time, individuals continue to save out of income even though on the average their income is declining. And, as a consequence of such a course of events, the proportion of savings accounted for by profits becomes small and, when the profit account is dissaving, the dissavings may exceed any savings in the rest of the private sphere.

A low level of savings out of profits or even dissavings out of profits does not mean a shortage of funds in the corporate system. It might almost be said that such situations occur because there is no need for funds—that when funds for expansion are necessary (and even at other times) they appear in the profit account.[5]

[5] See ch. VIII, sec. D.

F. THE EFFECT OF THE CONCENTRATION OF SAVINGS OUT OF CORPORATE PROFITS ON THE CONCENTRATION OF WEALTH

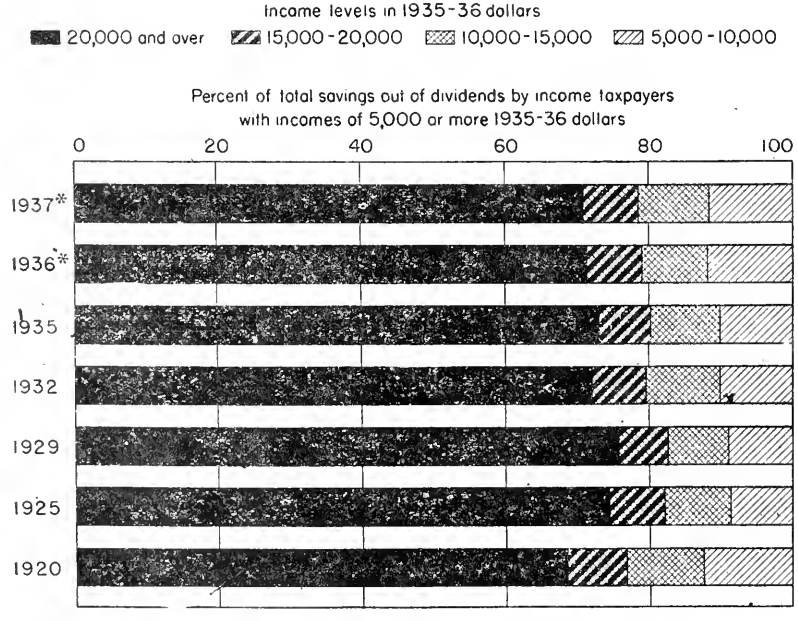
In good times and bad, the corporate equity accounts create a tendency for an increasing concentration of the available wealth. This tendency arises because the bulk of the savings out of corporate profits, which account for a very large and disproportionate share of private savings, are made by relatively few individuals.

The concentration of savings out of profits is indicated by the distribution of savings out of dividends by income level of income taxpayers with incomes of 5,000 or more 1935–36 dollars who received dividends. Data are shown in table XVIII and plotted in chart 12. Individuals with incomes of 20,000 or more 1935–36 dollars have accounted for the bulk of the savings out of dividends—probably upwards of 60 percent. Yet even in the years of high national income there were no more than 100,000 of such individuals. Proportionately, of course, they probably do not account for as great a proportion of all savings out of profits.

Chart 12

PERCENT DISTRIBUTION OF SAVINGS OUT OF DIVIDENDS, BY THE INCOME LEVEL OF DIVIDEND RECIPIENTS, SELECTED YEARS, 1920-1937

LOW ESTIMATES, INCOME TAXPAYERS WITH INCOMES OF 5,000 OR MORE 1935-36 DOLLARS



*Change in tabulating procedure for individual tax returns in 1936. See Appendix I, Section E.

Sources and Methods: See Appendix I, Sections E and H.

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TABLE XVIII.—*Savings out of dividends, by the income level of dividend recipients, selected years 1920–37—Low estimates; income taxpayers with incomes of 5,000 or more 1935–36 dollars*

Year	Total	Income level in thousands of 1935–36 dollars			
		5–10	10–15	15–20	20 and over
	Estimated amount of savings in millions of current dollars				
1937 [1]	1,192	138	116	91	846
1936 [1]	1,075	126	99	83	767
1935	806	82	77	59	588
1932	735	74	77	55	529
1929	1,973	173	169	137	1,494
1925	1,396	120	130	107	1,039
1920	940	117	102	78	643
	Percent distribution				
1937 [1]	100.0	11.6	9.7	7.6	71.0
1936 [1]	100.0	11.7	9.2	7.7	71.3
1935	100.0	10.2	9.6	7.3	73.0
1932	100.0	10.1	10.5	7.5	72.0
1929	100.0	8.8	8.6	6.9	75.7
1925	100.0	8.6	9.3	7.7	74.4
1920	100.0	12.4	10.9	8.3	68.4

[1] Tabulating procedure for individual tax returns changed in 1936. See appendix I, sec. E.

Sources and Methods: See appendix I, secs. E and H.

It is not possible from the available data to prepare any precise estimate of the proportion of total savings out of profits accounted for by the "20,000 and over" income group. During the twenties their savings out of dividends alone accounted for between a third and a fourth of all savings out of profits. This would indicate that of total savings out of profits the "20,000 and over" income group probably accounted for upward of 50 percent of all savings out of profits. Thus, it seems likely that during the twenties the savings out of profits accruing to less than 100,000 individuals accounted for roughly around 25 percent of all private savings. And the inevitable consequence of such a high concentration of savings is, of course, an increasing concentration of wealth.

Even when the corporate equity accounts as such are dissaving, the burden of this falls less heavily upon the dividend recipients in the higher income brackets than upon other stockholders. The high rate of savings out of dividends by those in the higher income brackets enables them to offset the retained losses of the equity accounts. For example, in 1935, the equity accounts dissaved about $1,250,000,000 while the "20,000 and over" income group saved almost $600,000,000, out of dividends and received about 40 percent of the dividends paid out. If they had a proportionate share of the retained losses, they would, on balance, have saved out of profits about $100,000,000, while all other stockholders would have dissaved about $550,000,000 on balance. And the consequences of this is also an increasing concentration of wealth.

CHAPTER VIII

SAVINGS CREATED AND ABSORBED BY THE OWNERSHIP ACCOUNTS

A. SAVINGS CREATED, SAVINGS ABSORBED, AND INVESTMENT EXPENDITURES

Testimony before the committee has shown the necessity for a volume of investment equal to the savings made out of a given national income, if that national income is to be maintained.[1] With fixed habits of saving, the national income will decline when investment declines and rise when investment rises; under these conditions it is the national income and savings which adjust to the volume of investment and not vice versa. With fixed investment tendencies, the national income will decline with a rise in the propensity to save and rise with a decline in the propensity to save; it is under these conditions that the national income and volume of investment might be said to adjust to the volume of savings. But even here the mechanism of adjustment is not through the change in the volume of savings but rather through the change in the volume of consumption impinging upon the volume of investment and the volume of investment in turn, upon the national income. Thus, particularly since savings habits are only subject to slow change, the volumes of savings and of national income, as a practical matter, adjust themselves to the volume of investment and not vice versa. This is for the economy as a whole.

For a segment of the economy—such as the corporate system—income produced, investment, and savings created are not necessarily related in the manner in which they are related for the economy as a whole. Discrepancies may appear which are offset by compensating discrepancies for noncorporate enterprise and Government. In particular, the savings created by and the investment expenditures of the corporate system need not be equal; when they are not, compensating differences occur in the rest of the economy. And any changes in investment by the corporate system need not be followed by compensating changes in the income produced and in the savings created by corporations; the adjustment may be partially or completely made by Government and noncorporate enterprise.

The relation between the savings created by and the investment expenditures of the corporate system is a critical feature of the performance of the corporate system. When the investment expenditures of the corporate system exceed the savings it creates, then the system is operating to increase the total national income; when investment expenditures are less than savings created, the system is operating to reduce the national income; when investment expenditures and savings are equal, the corporate system is in a neutral position with respect to the national income.

[1] See Investigation of Concentration of Economic Power, Hearings before the Temporary National Economic Committee, 76th Cong., 1st sess., Part 9, pp. 3495-3520, 3538-3559, 3837-3902.

To give a complete picture of the savings originating in and the investment expenditures of the corporate system would require tracing through the various streams of money income and outgo of the corporate system. It is not possible to provide such a complete analysis in this study, even were the necessary data available. But some aspects of investment and savings which are related to the profit and loss and net worth accounts can be covered.

It is not possible, of course, to segregate investment expenditures in terms of the sources of funds from which they are made, in particular the expenditures made from equity funds. Funds from all sources are merged into a whole and then held or used for various purposes. Consequently, it is not possible to draw a comparison between the savings created by and the investment expenditures made out of the ownership accounts. But a comparison between the savings created by and the savings absorbed by the corporate equity accounts can be made.

Savings absorbed or investment funds absorbed by a segment of the economy are not identical with the investment expenditures made by that segment. Whether particular investment funds, such as retained earnings, are equal or unequal in magnitude to investment expenditures depends upon the use of those funds. For example, investment funds spent for new equipment represent not only the absorption of savings but also investment expenditures. On the other hand, when funds are used to retire debt, they represent absorption of savings but not investment expenditures; similarly when funds are used to build up the cash account, and in some cases, when used to purchase existing assets. Thus, there is no necessary equality between investment expenditures and savings or investment funds absorbed. And, consequently, a comparison between savings created and savings absorbed does not measure the relation between savings created and investment expenditures.

But the disparities between savings created and absorbed do measure the minimum limit of the disparities which have occurred between the savings created by and investment expenditures from the equity accounts. This is so because the maximum amounts of investment expenditures are exactly equal to the savings absorbed or investment funds placed into those accounts. Amounts spent as investment expenditures from the equity accounts cannot exceed the amount of investment funds available from those accounts.

A comparison between the savings created and absorbed by the ownership accounts implies neither that savings out of those accounts are the only source of corporate equity money nor that retained corporate profits and the sale of equity securities are the only sources of corporate investment expenditures. In practice this is certainly not so. Nor does it imply that the corporate system has a responsibility for maintaining at least a neutral position between savings created by the equity accounts and either savings absorbed by those accounts or investment expenditures from those accounts. The implication is simply that, depending upon the nature of the disparities, the ownership sphere as defined by corporate accounting imparts directly either a stimulating, neutral, or depressing effect upon the total national income. Other spheres, for example, interest payments and debt,

salaries and wages, etc., should also be taken into account to determine, not only the effects of transactions involving the equity accounts directly, but also to determine the net absorption or creation of savings originating in the corporate system. Furthermore, to determine the effect on the national income, it is necessary to go still further and study what the corporate system does with the savings it absorbs—the extent to which, for example, they become investment expenditures.

B. NET ABSORPTION OF SAVINGS BY CORPORATE OWNERSHIP ACCOUNTS

The difference between the net amount of funds taken into the corporate system from the outside through the sale and retirement of equity securities and the amount of savings made by owners of equity securities which may reasonably be attributed to dividend income from such securities represents the net amount of savings absorbed by the ownership accounts. This net absorption is equal to the difference between net stock issues and savings out of dividends. Retained profits represent both a creation of savings and an absorption of savings. Thus, they need not be taken into account in obtaining net figures for savings absorbed. Similarly, valuation changes within the corporate system not carried through profit and loss accounts need not be taken into account since they also represent both a creation and an absorption of savings.

Only in the rare periods characterized by relatively full use of capacity and a high rate of expansion has the demand for new equity capital by the corporate system been sufficient to absorb all of the savings created by the equity accounts. In other periods, the corporate equity accounts have failed by a wide margin to absorb savings in amounts equal to the savings out of profits.

TABLE XIX.—*Indicated net absorption of savings by the equity accounts of the corporate system, 1909–37*

[Millions of dollars]

Year	Indicated net absorption of savings by corporate equity accounts [1]	Total stock issues	Low estimate of savings out of dividends [2]	Year	Indicated net absorption of savings by corporate equity accounts [1]	Total stock issues	Low estimate of savings out of dividends [2]
1937	−432	760	1,192	1922	−262	620	882
1936	−522	553	1,075	1921	−605	275	880
1935	−655	151	806	1920	98	1,038	940
1934	−704	35	739	1919	747	1,547	800
1933	−459	153	612	1918	−508	298	806
1932	−711	24	735	1917	−466	455	921
1931	−909	343	1,252	1916	−54	782	836
1930	−134	1,527	1,661	1915	−363	325	686
1929	4,784	6,757	1,973	1914	−415	262	677
1928	1,756	3,491	1,735	1913	−272	452	724
1927	138	1,738	1,600	1912	253	904	651
1926	−270	1,220	1,490	1911	−271	352	623
1925	−149	1,247	1,396	1910	−205	405	610
1924	−282	866	1,148	1909	89	611	522
1923	−370	736	1,106				

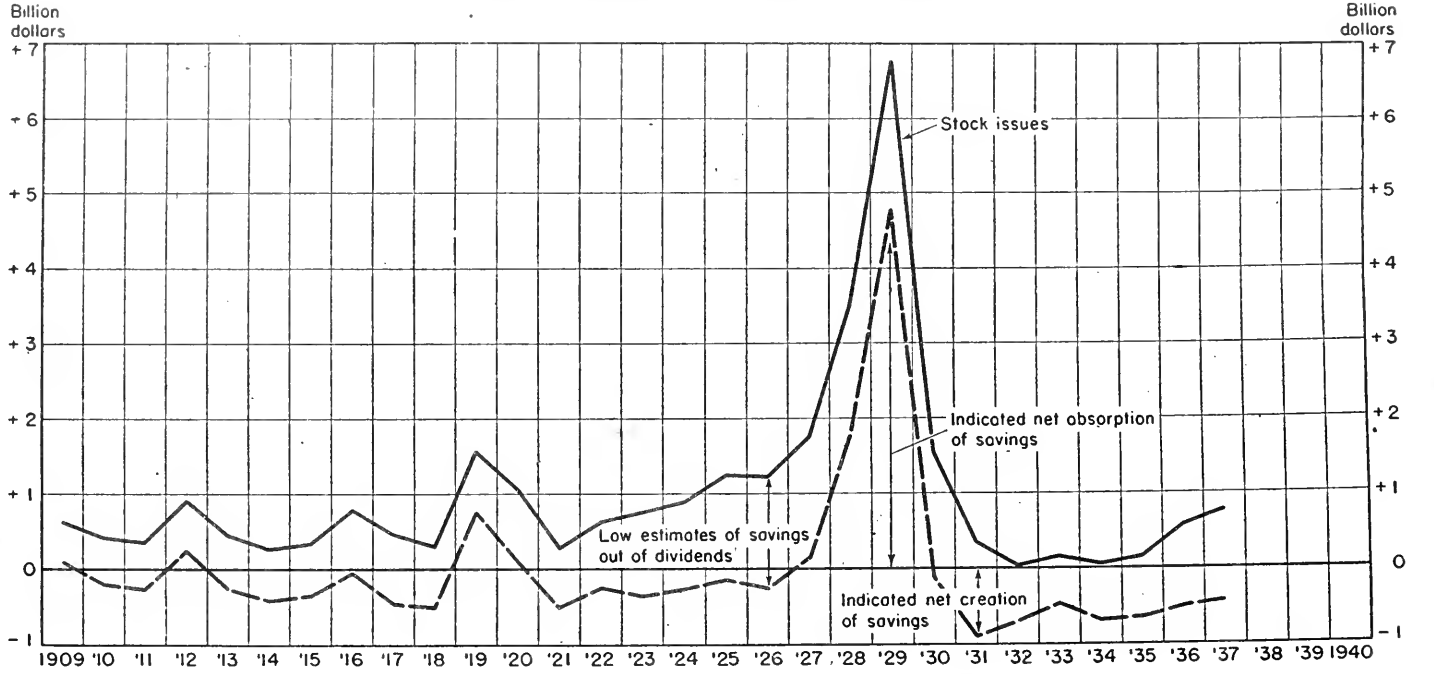
[1] Stock issues less savings out of dividends.

[2] Figures for 1920, 1925, 1929, 1932–1935, 1936, and 1937, computed estimates; others based upon those computed estimates.

Sources and method: See appendix I, secs. C and H.

Chart 13

INDICATED NET ABSORPTION OF SAVINGS BY THE EQUITY ACCOUNTS OF THE CORPORATE SYSTEM, 1909-1937



Sources and Methods: See Appendix I, Sections C and H

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The data contained in table XIX and plotted in chart 13 show that in most of the past 30 years the equity accounts of the corporate system have not absorbed as much savings as they have given rise to.[2] For each of the years 1927, 1920, and 1909, the figures indicate net absorptions of about $100,000,000. But this figure is much smaller than the minimum overstatement involved in the figures. It is roughly around the magnitude of the understatement of savings out of dividends, (not to mention the overstatement of gross savings absorbed in the stock issues which appears to be the more important source of bias).

For the years 1919 and 1912, however, the net absorptions indicated by the figures are in excess of the amounts which might be attributable to understatements in the volume of savings out of dividends. There is, however, the question of the volume of stock retirements. But, even after making allowances for biases, it seems likely that there were net absorptions of savings in those years.

Indicated net absorptions in 1928 and 1929 are $1,800,000,000 and $4,800,000,000, respectively. But these figures are obviously much too large. For, in those years a very large proportion of the funds obtained from stock issues were used to replace existing equities in the hands of the public. The exact volume of such substitutions is not known. But one indication that they were large is given by the estimates of Moody's Investor's Service that "Productive Issues" (stocks as well as other securities) totaled $1,500,000,000 in 1928, and $1,800,000,000 in 1929. Another indication is an estimate which has been made that only $2,000,000,000 of the $9,400,000,000 of new securities issued by domestic corporations in 1929 were used for investment purposes.[3] Still another indication is the fact that over $2,000,000,000 of investment trust securities (practically all stocks) were issued in 1929 and $800,000,000 in 1928. Most of the proceeds of such issues were, of course, used to purchase existing corporate securities. This comment also applies to the considerable volume of holding company stock issues and stocks issued in connection with mergers and consolidations. It would appear, therefore, that in 1928 and 1929 there may have been net absorptions of savings by the equity accounts; but such net absorptions, if they occurred, could not have been of very great magnitude.

Since, in most years, the corporate equity accounts do not absorb all of the savings they have created, it is necessary that the excess find outlets either in the debt accounts of the corporate system or in other sectors of the economy. And, unless they are so absorbed, they have a depressing effect upon the national income. This depressing effect can be substantial since underabsorption has probably amounted to as much as $1,000,000,000 in some years. Even a much lower figure than this, however, is sufficient to depress the national income by at least $2,000,000,000 and possibly by as much as $5,000,000,000

[2] Figures for the net absorption shown in table XIX considerably overstate the volume of savings absorbed by the ownership accounts of the corporate system. For, the estimates of savings out of dividends are low (ch. VII, sec. C), and the data on new stock issues, though they understate the gross volume of equity issues, overstate the amount of net new equity contributions made to the corporate system because the offsetting figures on equities retired have not been deducted (ch. III, sec. A).

[3] Eddy, George A., "Security Issues and Real Investment in 1929," Review of Economic Statistics, vol. XIX, No. 2 (May 1937).

C. LEAKAGES BETWEEN SAVINGS ABSORBED AND INVESTMENT EXPENDITURES

As already indicated, gross savings absorbed by the ownership accounts represent the maximum limit for investment expenditures which can be financed from those accounts. Thus, any difference between the savings absorbed and the actual investment expenditures financed from equity accounts represent an additional influence upon the national income which must be taken into account. Measurement of this influence for the ownership accounts alone cannot be accomplished because of the nonsegregability of investment expenditures by source of funds. But, it is clear that they exist, and, in part, are attributable to the ownership accounts.

In the last analysis, the leakages are simply cash accumulations. Debt retirements might also be considered as leakages but, since they do not definitely lock up investment funds within the corporate system as in the case of hoarding, they are more appropriately considered as of another character; similarly for purchases of existing assets.

Analysis of hoarding leakages falls outside the scope of this study. But it appears worth while to note one very important consequence of those leakages. To offset them in the economy as a whole—corporate as well as noncorporate enterprise—it is necessary to have an expanding volume of monetary media. The sources of these are:

(*a*) Production of monetary metals.
(*b*) Net foreign balance.
(*c*) Credit creation or asset monetization.
(*d*) Fiat currency issues.

And it is clear that, during every period of expansion of money national income, one or more of these has played an important role.

It is possible as a result of dishoarding for the national income to be maintained or somewhat expanded during short periods, even in the absence of funds arising from the four sources listed above. But, because of the lock-ups of savings in cash accounts, an expansion of monetary media is necessary in order to maintain a given level of the national income over any substantial period. And an even greater expansion is, of course, required for any consistent long-term movement upward of the national income.

D. DISSAVINGS AND REDUCTIONS OF CORPORATE EQUITY CAPITAL

When the corporate system has deficits or disburses more in dividends than it makes in profits, it is dissaving. If the volume of such dissaving exceeds the net inflow of new equity funds (stock issues less retirements), then the net worth account is being reduced. Between 1909 and 1929, such a reduction took place only in 1921; since 1929, such reductions have been the rule, ranging from around $8,000,000,000 in 1932 to $200,000,000 in 1937. Data are shown in table XX.

TABLE XX.—*Changes in corporate net worth exclusive of indicated book changes in valuation, 1909–37*

[Millions of dollars]

Year	Total	Retained earnings	Stock issues	Year	Total	Retained earnings	Stock issues
1937	−200	−960	760	1922	2,366	1,746	620
1936	−246	−799	553	1921	−2,331	−2,606	275
1935	−1,102	−1,253	151	1920	2,481	1,443	1,038
1934	−2,450	−2,485	35	1919	5,254	3,707	1,547
1933	−4,327	−4,480	153	1918	2,231	1,933	298
1932	−7,977	−8,001	24	1917	4,772	4,317	455
1931	−6,984	−7,327	343	1916	5,690	4,908	782
1930	−2,720	−4,247	1,527	1915	2,353	2,028	325
1929	8,914	2,157	6,757	1914	605	343	262
1928	5,891	2,400	3,491	1913	1,632	1,180	452
1927	2,853	1,115	1,738	1912	2,379	1,475	904
1926	3,555	2,335	1,220	1911	1,017	665	352
1925	4,204	2,957	1,247	1910	1,483	1,078	405
1924	2,440	1,574	866	1909	1,643	1,032	611
1923	3,264	2,528	736				

Sources and methods: See appendix I, secs. A and C.

A reduction of equity capital (in money terms) does not necessarily hamper the functioning of the corporate system. In fact, it may only represent a changing efficiency of the money value capital in the system. Because of changing price levels and technical efficiency, different money capitals may be required to carry on the same physical volume of activity. And in answer to these changes, the net worth accounts fluctuate up and down.

Since 1929, there has probably been a net money capital reduction in corporate net worth accounts arising out of the current income accounts, stock issues and stock retirements of between 25 and 30 billion dollars, with most of it occurring prior to 1935. This impairment represents around 20 percent of the end of 1929 net worth of the corporate system. And, of course, it excludes net worth declines arising out of intra corporate system book changes in valuation since these obviously cannot hamper the operations of the corporate system.

That the corporate system during recent years has not been hampered in its activities by the reduction of its equity capital or, in other words, by a shortage of funds at its disposal can be indicated in a number of ways.

First of all there has been a marked change in price level. The Bureau of Labor Statistics wholesale price index (1926=100) averaged about 96 during the years 1927 to 1929. Since then it has never exceeded the 86 level of 1930 and 1936; currently it is around 80. Thus, today, a much smaller volume of money capital is necessary than in the late twenties to carry on the same physical volume of business, simply because the price level is about 15 percent lower.

Second, the increasing technical efficiency of capital goods and use of capital funds makes it possible to maintain and even expand productive capacities with a smaller and smaller volume of gross investment expenditures. Thus, for example, the expenditure of depreciation and depletion allowances alone is sufficient to maintain and even increase productive capacities. It is only when large increases of capacity are required that new savings must be drawn upon

for investment expenditures. And under such conditions the volume of profit expands so that the necessary investment funds are created within the corporate system.

Third, the volume of the monetary media held by the corporate system, far from being less than in the late twenties, has been greater. For example, the official tax returns of the Bureau of Internal Revenue show that since 1935 the corporate system has held more cash (cash in till and bank deposits) than the $22,400,000,000 held in 1929 at the New Era peak of cash balances. Thus, in spite of the huge money capital reduction, the corporate system has been able to hoard cash. And, of course, cash accounts are the easiest sources of investment expenditures to tap.

Finally, the volume of debt of the corporate system has declined.

All in all, the conclusion is that since 1935, at least, the reason for the reduction of money capital has not been an inability to obtain funds, but rather a lack of need for them.[4]

During the period 1930–33, when most of the money capital reduction occurred, it is possible that at times there may have been a shortage of funds. Particularly, does this seem likely to have occurred during 1932 and the first half of 1933—the period of the banking difficulties. But during the remainder of the period, the corporate system seems not to have been hampered by any shortage of funds. There were large volumes of depreciation allowances which were not spent simply because there was little if any need for new capacities in view of declining physical outputs. In addition, the declining price levels made smaller and smaller volumes of money capital necessary to carry on a given volume of business.

[4] *Cf.* Eddy, George A., "The Present Status of New Security Issues," Review of Economic Statistics, vol. XXI, No. 3 (August 1939).

PART III

CORPORATE PROFIT RATES AND SAVINGS ABSORPTION RATES

CHAPTER IX

THE METHOD OF MEASUREMENT

In part II it was shown that, on the whole, the volume of investment funds absorbed by the equity accounts has been substantially less than the volume of savings created by those accounts. This part deals with two further questions: First, what has been the relation between the profit rates and the savings absorption rates of individual corporations? Second, how has the relationship changed with changes in the conditions under which the corporations have operated?

This part is based upon an analysis of the oil producing and refining industry. Limitations of time and personnel did not permit a similar intensive analysis of other industries. Preliminary studies of other industries, as well as the closely related studies in part IV, indicate that the findings with respect to oil producing and refining corporations apply in general to large corporations in other lines of enterprise.

A. MEASUREMENT OF THE RATE OF RETURN

The rates of return used in the subsequent discussion are rates on invested capital rather than profit rates on net worth alone. Invested capital is defined as net worth including capital reserves plus funded and long term debt. The income that corresponds to invested capital so defined is net profit plus interest on funded and long term debt.

Differences in capital structure as between corporations may, of course, lead to differences in investment behavior. When a corporation is making large profits, even a large volume of long term debt would probably not affect its rate of asset expansion to any great extent. Rigidity in interest requirements may in such circumstances be largely, if not wholly, compensated by flexibility of the common dividend rate. But when profits are moderate or low, interest requirements tend to restrict the freedom of action of that corporation relative to corporations not so limited. For these reasons, the technically preferable procedure in an analysis such as the present one would be to take differences in capital structure into account. But this procedure could not be followed because of limitations of time and personnel.

Rates of return on invested capital rather than on net worth were selected for the following reasons:

(1) A segment of investment funds broader than the equity accounts is covered. As a consequence, differences in valuation practices have smaller effects upon rates of return on invested capital than they do upon rates of return on equity alone.

(2) The use of rates of return on invested capital avoids the effects of purely financial changes and differences, such as might result from conversions of stocks to bonds and vice versa, upon rates of return on net worth.

(3) Exploratory studies indicated that differences in capital structure had not been of critical importance in determining differences in investment behavior for the corporations studied.

(4) Finally, because of small funded and long term debts, differences between rates of return on net worth and on invested capital for industrial corporations, such as those covered in this part, tend to be small. Hence, as a practical matter the relations between profit rates and expansion rates for such corporations tend to be about the same whichever set of rates is used.

B. MEASUREMENT OF THE RATE OF ABSORPTION OF SAVINGS

The change in the total liabilities (or assets) of a business during a period, after adjustment for book changes in valuation, represents the volume of investment funds or savings put into that business by owners and creditors during that period. These funds may originate within the business in the form of retained profits (or losses) or outside the business in the form of new equity capital and of changes in debt.

For any business a change in total assets (or liabilities) does not necessarily represent an absorption of the savings at its disposal during a period. A business absorbs or invests savings acquired during a period when those funds have been converted into assets other than cash. Thus, the amount of savings absorbed by a business is not measured by the change in total assets, but rather by the change in total assets exclusive of cash. An increase in the cash account represents simply a lock up of savings within the business, even though it is an absorption of savings from owners and creditors into the business. And a decrease in the cash account or a release of locked up savings represents savings absorbed by the business, even though there has been no absorption of savings from owners and creditors into the business.

Cash includes currency, metallic money, bank deposits, and other forms of monetary media. Published balance sheets, however, usually provide figures for an account called "cash and equivalent." This account includes cash, securities held by corporations in lieu of cash, and, in some cases, other items as well. But, on the whole, the "cash and equivalent" account provides a reasonably good approximation to the volume of cash held. In any case, since the amount of cash and equivalent, in comparison with total assets, is small, the discrepancies do not affect the results to any great extent.

The rate of savings absorption for a year is, then, the percentage change in noncash assets, after adjustment for revaluations during the year. Such percentage change figures should be based upon the same valuations as the rate of return figures. Consequently, since the rate of return figure used in the analysis for a year in which a revaluation occurred, say 1935, was based upon the end of year asset values, the percentage change in assets should also be based upon the same values. In order to do this, the asset values at the end of 1934 were adjusted for the asset revaluations during 1935, and the percentage change in assets during 1935 computed from the adjusted value for 1934 and the reported value for 1935.

Adjustments were applied only when revaluations or book changes in asset values had been carried through the accounts as debits or

credits to surplus.[1] "Revaluation" entries carried through the income account were not included in the asset adjustments for the reason that these entries, though they may be only book changes, are deemed by corporations to be parts of the current flows of funds into and out of the equity accounts.

An attempt was made to cover all revaluations carried directly to surplus.[2] While there is no certainty that all book changes in valuation were obtained, it would appear that the most important of them were. It is probable that the minor revaluations and any major ones which were not covered could hardly affect the results seriously.

Detailed data on book changes in valuation are shown in appendix II, sections B and C.

C. CONSOLIDATIONS, MERGERS, ACQUISITIONS, ETC.

Much of the asset growth of large corporations has been accomplished by means of mergers, consolidations, and acquisitions of all or part of the assets of existing businesses. These have been usual methods of corporate expansion during periods of relatively high business activity. In other periods they have been employed less frequently, though still on a substantial scale. The material contained in appendix II, though necessarily incomplete, gives striking evidence of the extensive use of these methods.

An increase in the assets of a corporation resulting from a merger, a consolidation, or an acquisition is on a different plane from an increase by other means. There is, of course, no sharp line of demarcation between the two general methods of asset expansion. Yet it is necessary to distinguish a difference of kind for the present analysis. To do so a pragmatic test was applied. Corporations whose assets increased *sharply* during a year as a result of a merger, consolidation or acquisition, were eliminated from the analysis for that year. In other words, whenever a corporation introduced into its accounts a body of assets which previously was held by other independent businesses and which was large relative to its own assets at that time, a merger, consolidation, or acquisition was deemed to have occurred. Similarly, in the rare cases when a corporation disposed of a large proportion of its assets, a separation of the corporation into two or more parts was deemed to have occurred.

Acquisitions and disposals of smaller scope were treated as of the same nature as new construction and equipment purchases. This is appropriate; to an individual corporation there is no difference between acquiring the assets of existing businesses and purchasing assets not previously part of a business. Both constitute investments of funds. In fact, they are alternative means of attaining the same ends.

Cases in which changes in accounting procedure occurred were treated in a manner similar to that for consolidations, mergers, and acquisitions. For example, when a corporation shifted from an unconsolidated to a consolidated basis of reporting (or vice versa) in any year, that corporation was eliminated from the analysis for that year only if the change in assets resulting from the shift was large.

[1] And capital reserves included in invested capital.
[2] Or to capital reserves included in invested capital.

D. THE TECHNICAL BIAS ARISING FROM THE USE OF BOOK VALUES

Rates of change in assets were based upon figures compiled by the Standard Statistics Co., Inc.; rates of return for the years 1934 to 1938 were computed from data compiled by Standard Statistics, Co., Inc., and, for the years 1927 to 1933, are those calculated by the Standard Statistics Co., Inc. Such figures, which are derived from the annual reports of corporations, are obviously affected by accounting and valuation practices. It is impossible to adjust the data published by the various corporations to reflect uniform accounting and valuation practices. Even if it were possible to do so, it is doubtful whether such adjusted figures would have any greater validity tahn the published figures. Furthermore, it is desirable to use those book figures which the managers of business believe to be the most appropriate as a basis for control and operation. By and large, book figures are presumably of this character, although there is no assurance that in some cases book figures may not be designed for other purposes.

Variations in charges to costs among different companies automatically affect both the rates of asset change and the rates of return in the same direction. For example, an "excessive" depreciation charge lowers both the percentage change in assets and the rate of return as compared with other companies. Book changes in valuation charged directly to surplus have a similar effect upon rates of asset change and rates of return; total assets and invested capital are changed in the same direction, so that both the rate of asset change and the rate of return are changed in the same direction. Thus, such variations among companies in costing and valuation practices introduce a relation between the rates of return and the rates of asset change. This technical bias operates so as to show the higher rates of asset change associated with the higher rates of return and the lower rates of asset change associated with the lower rates of return.

It appears, however, that the bias is, in general, not great enough to destroy the general validity of the results obtained when companies in the same industry are compared. The reasons for this are: (1) accounting practices tend to be similar for corporations in the same industry; (2) book changes in valuation of substantial magnitude tend to occur at the same time for different companies; and (3) the corporations included are among the larger ones with relatively long histories so that such arbitrary valuations as are included in the figures are merged with cost valuations to a considerable extent. All of these factors tend to reduce the technical bias so that it tends to be small relative to any substantial real relation indicated by the book values.

CHAPTER X

RELATION BETWEEN PROFIT AND ASSET EXPANSION RATES: OIL PRODUCING AND REFINING CORPORATIONS

A. THE CORPORATIONS

The analysis covers 22 of the following 25 corporations:

1. Amerada Corporation.
2. Atlantic Refining Co. (The).
3. Barnsdall Oil Co.
4. Consolidated Oil Corporation.
5. Gulf Oil Corporation.
6. Houston Oil Co. of Texas.
7. Humble Oil & Refining Co.
8. Indian Refining Co.
9. Indiana Pipe Line Co.
10. Mid-Continent Petroleum Corporation.
11. Ohio Oil Co.
12. Phillips Petroleum Corporation.
13. Pure Oil Co.
14. Shell Union Oil Corporation.
15. Skelly Oil Co.
16. Socony-Vacuum Oil Co., Inc.
17. Standard Oil Co. of California.
18. Standard Oil Co. (Indiana).
19. Standard Oil Co. (Kentucky).
20. Standard Oil Co. (New Jersey).
21. Standard Oil Co. (Ohio).
22. Sun Oil Co.
23. Texas Corporation.
24. Tide Water Associated Oil Co.
25. Union Oil Co. of California.

The number preceding each company is used to identify it on the various charts.

These corporations are classified as oil producing and refining companies by the Standard Statistics Co., Inc., in their compilations. They cover the bulk of the industry. Since the oil producing and refining industry is characterized by large producing units, most of the companies are large having total assets of more than $25,000,000 each.

Amerada (1), Indian Refining (8), and Indiana Pipe Line (9) were omitted from the analysis. Amerada was omitted because it deals extensively in oil lands as a result of the oil-prospecting character of its operations; apparently this accounts for the erratic behavior of its asset accounts relative to the bulk of the other corporations. Indiana Pipe Line was omitted because its business is exclusively that of transporting oil by pipe line between two fixed points, and hence not comparable

with the other companies studied. Indian Refining was omitted largely because control was acquired by the Texas Corporation in 1930, but also because of the restricted character of its operations. While not included in the analysis, data for the three corporations are plotted in the charts. They serve to indicate, particularly in the case of Indiana Pipe Line, the effects of differences in operations upon the relation between rates of return and of noncash asset expansion.

Most of the remaining 22 corporations are highly integrated, covering all or most of the productive activities from oil well drilling to the distribution of refined products to consumers. Various producing, transportation, and distributing operations loom larger in some of the corporations than in others. But, with some few exceptions, they have been carrying on about the same kind of activities.

Three of the companies did have operations somewhat different from those of the other nineteen. Prior to 1931, Standard of Kentucky (19) was mainly a distributing company, though it did some refining; in 1931, refinery operations were discontinued so that, since then, it has been purely a distributing company. Standard of Ohio (21) is mainly a distributing company. After Barnsdall (3) disposed of its marketing and refining divisions by a stock dividend in 1935, it became a producing and pipe line company. These companies might well have been excluded in view of the lack of relatively strict comparability with other companies. However, it was believed that they were sufficiently similar to other companies to warrant inclusion in the analysis.

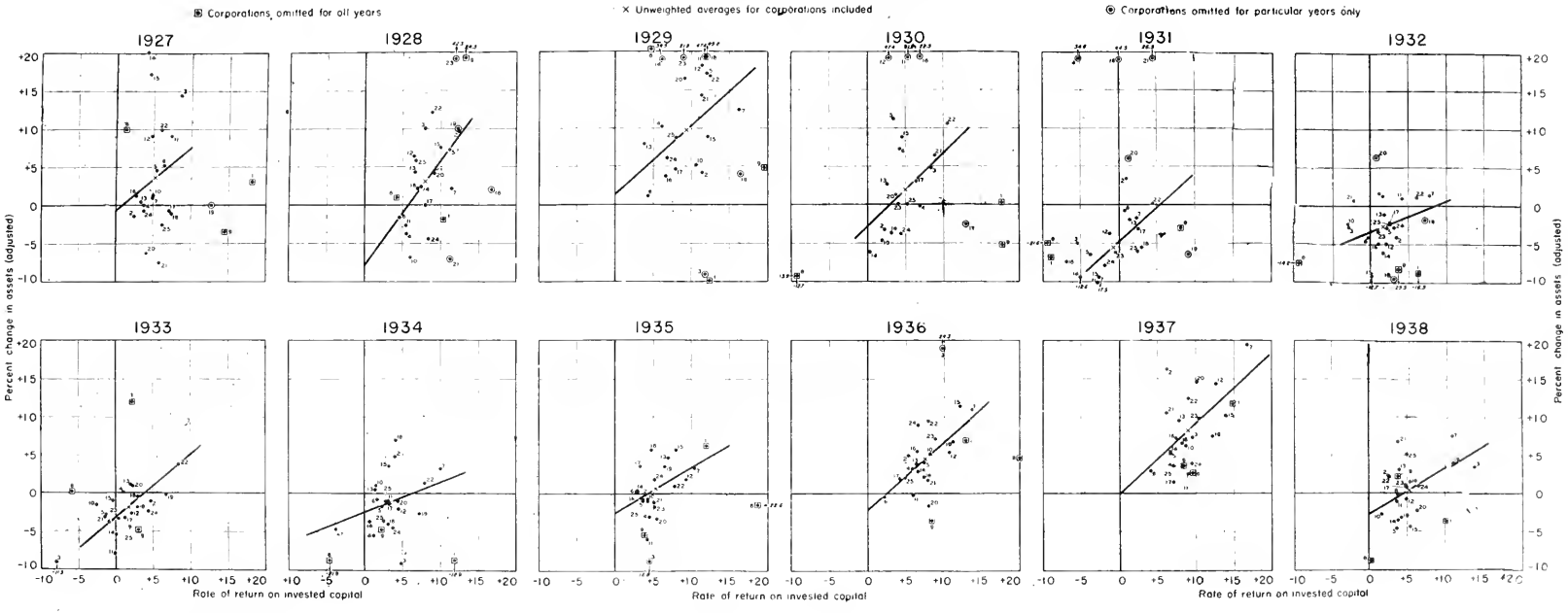
It may be noted that Humble Oil (7) is a consolidated subsidiary of Standard of New Jersey (20) and on that account might have been omitted. However, in view of the fact that Humble accounts for only around 15 percent of Standard of New Jersey's assets and, for practical purposes, one division of the latter's business, it was believed worth while to include Humble as an independent item. The figures for Standard of New Jersey are, of course, not very much different from what they would have been had Humble been excluded from its accounts.

In computing the relation shown for 1928, Standard of Indiana (18) and Standard of Ohio (21) were eliminated on a somewhat arbitrary basis; similarly, for 1929, Barnsdall (3) was eliminated. During 1928, Standard of Indiana built up its cash account and reduced its current liabilities, apparently in preparation for the acquisition of Pan-American Petroleum in 1929 and the purchase of the outstanding 50 percent interest in the Sinclair Crude Oil Purchasing Co. in 1930. Figures for Standard of Ohio used in the analysis show a large increase in the cash and equivalent account in 1928. There is some question as to whether this represents an actual increase, since the figures show a roughly corresponding decline in receivables. It is possible that the cash and equivalent increase merely represented a transfer between accounts. It is also possible that the cash and equivalent account for 1928 included some investment account items, since in 1931 certain investments were first reported by the Standard Statistics Co., Inc., as part of cash and equivalent and later, separately, as investments. In 1929, Barnsdall retired most of its long term debt, using for this purpose a sinking fund previously carried as an asset. This apparently explains the 9 percent decline in assets when other companies with approximately the same rate of return were expanding their

Chart 14

RELATION BETWEEN RATE OF RATURN AND RATE OF NON-CASH ASSET EXPANSION, BY YEARS, 1927-1938

SELECTED OIL-PRODUCING AND REFINING CORPORATIONS



Sources and Methods See Chapter IX and Appendix II, Section B

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assets about 10 percent on the average. It is believed that the computations for 1928 and 1929, excluding these items, depict more accurately the underlying situation than similar computations including these items.

Texas Corporation (23), formed in August 1926, was omitted from the 1927 calculations because the required end of 1926 balance sheet data had not been obtained by the time those calculations were started.

B. RELATIVE PROFIT RATES AND RELATIVE ASSET-EXPANSION RATES WITHIN INDIVIDUAL YEARS

Chart 14 shows the rates of return on invested capital plotted against the percentage changes in assets for each of the 12 years from 1927 to 1938. For each year, each dot represents 1 of the 25 companies for which data were obtained. Those enclosed in squares have been excluded from the analysis for the reasons given in section A, supra; those enclosed in circles have been excluded for particular years because of consolidations, mergers, acquisitions, changes in accounting procedure, etc. The line for each year represents a computed relation between the rate of return and the percentage change in assets for the corporations not enclosed in squares or circles for that year. Each line was fitted by the method of least squares with the rate of return as the independent variable and with the same weight assigned to each company regardless of its size. Basic data from which the chart was prepared are contained in appendix II, section B, and the adjustments made to the basic data are described in chapter IX.

The general level of the line for each year is determined by the unweighted average percentage change in assets for the corporations included in the analysis for that year. Similarly, the general horizontal position of the line is determined by the unweighted average rate of return. An "X" has been placed upon the chart for each year to locate the position of these averages. The scatter (excluding dots enclosed in circles or squares) about the line for each year measures the closeness of the association between the percentage changes in assets and the rates of return. The steepness of the slope of the line for each year measures the average amount by which the percentage change in assets has differed as between companies for a given difference in the rate of return. Table XXI contains the various computed averages, slopes, and measures of scatter.

TABLE XXI.—*Computed characteristics of the relation between the rate of return and the rate of noncash asset expansion, by years and by groups of years, 1927–38—Selected oil producing and refining corporations*

Year or group of years	Number of companies included	Companies not included (identifying numbers)	Unweighted average percent change in assets	Unweighted average rate of return on invested capital (percent)	Indicated average percent change in assets at—			Indicated average difference in the percent change in assets per 1 point difference in the rate of return	Correlation coefficient	
					Zero return	5 percent return	10 percent return		Actual	Minimum required for technical significance[1]
Individual years:										
1938	22	1, 8, 9	0.39	5.23	−2.78	0.25	3.28	[illegible]0.61	0.46	0.42
1937	22	1, 8, 9	8.20	8.97	−.09	4.53	9.16	.92	.55	.42
1936	21	1, 8, 9, 3	4.57	7.43	−2.13	2.38	6.88	.90	.67	.43
1935	21	1, 8, 9, 3	.64	5.30	−2.53	.46	3.44	.60	.42	.43
1934	22	1, 8, 9	−1.15	3.37	−2.49	−.50	1.49	.40	.30	.42
1933	22	1, 8, 9	−1.88	1.75	−3.36	.86	5.07	.84	.80	.42
1932	19	1, 8, 9, 18, 19, 20	−2.69	1.67	−3.37	−1.35	.68	.40	.33	.46
1931	17	1, 8, 9, 4, 16, 19, 20, 21	−5.42	−.76	−4.76	−.42	3.91	.87	.58	.48
1930	18	1, 8, 9, 11, 12, 18, 19	1.96	4.93	−2.75	2.02	6.80	.95	.50	.47
1929	16	1, 8, 9, 3, 11, 14, 18, 19, 23	9.74	9.38	1.37	5.83	10.29	.89	.55	.50
1928	18	1, 8, 9, 18, 19, 21, 23	3.02	7.92	−7.76	−.96	5.85	1.36	.55	.47
1927	20	1, 8, 9, 19, 23	3.67	5.18	−.61	3.52	7.66	.83	.18	.44
Groups of years:[2]										
1935–37	22	1, 8, 9	4.51	7.26	−2.15	2.44	7.02	.92	.77	.42
1932–34	22	1, 8, 9	−1.86	2.35	−3.24	−.30	2.65	.59	.63	.42
1930–31	15	1, 8, 9, 4, 11, 12, 16, 18, 19, 21	−1.15	1.99	−3.07	1.77	6.60	.97	.63	.51
1928–29	17	1, 8, 9, 11, 14, 18, 19, 23	5.72	8.91	−1.77	2.43	6.64	.84	.46	.48

[1] Five percent point on the assumption of random sampling from an infinite universe.
[2] Average percent changes in assets and average rates of return are on an annual basis.

Sources and methods: See appendix II, sec. B and ch IX.

For most of the years, there is a clearly discernible relation between the rate of return and the rate at which assets were expanded. Corporations with the highest rates of return expanded their assets the most while those with the lowest rates of return either expanded their assets the least or contracted them most, and, for the intermediate rates of return, the greater the rate of return, the greater the rate of asset-expansion. This aspect of chart 14 will be discussed in this section. But it is also clear from the chart that the character of the relation has varied a good deal from year to year. In particular, the chart shows that, even on the average, the same rate of return has not always been associated with the same rate of asset expansion. This latter aspect of chart 14 will be discussed in succeeding sections.

In 9 of the 12 years, there was a definite association between the asset-expansion rates and the rates of return of the corporations covered. This is shown by the fact that, except for 1927, 1932, and 1934, the correlation coefficients were at or above the minimum level required for technical significance. Those coefficients show that the amount of variation in the expansion rates accounted for by the variation in rates of return has been substantial in most of the years. Aside from 1927, 1932, and 1934, at least 18 percent of the variation in asset change for the corporations covered in each year has been accounted for by the variation in rates of return.[1] The maximum of 45 percent occurred in 1936. Such percentages are striking indications of the relation which has existed between profit rates and expansion rates in most of the individual years.

A relation between profit rates and expansion rates does not mean, of course, that the current profit rate places any rigid restrictions upon the amount of expansion which a corporation can make during the current year. In fact, a corporation has considerable leeway as to the amount of asset expansion or contraction it will show for a year at a given rate of return.

A corporation has a choice as to the amount of profits it will retain or disburse as dividends; similarly, with respect to its cash balances. And should the funds available from the profit and cash accounts not be sufficient, a corporation may draw funds from other sources such as trade credit and security issues. Taken together, these elements in the situation only place an upper limit upon the rate of expansion for a corporation. It is difficult to determine the extent to which such a limit has restricted the expansion of the corporations included. But, on the whole, it appears that the upper limits must have been considerably outside the range of the actual data. That this must be so is indicated by the fact that corporations such as those included have had little if any difficulty, by and large, in obtaining additional bank or trade credit when they have wanted it.

Limits placed upon the amount of contraction are of a somewhat different nature. A "going concern" with a specified volume of business can contract its noncash assets only so far as (1) book charges to current costs, such as depreciation and depletion, do not have to be spent for replacements and (2) assets can be sold or liquidated without hampering operations. As a usual matter, these factors operate to place rather definite limits upon the rate of contraction. But even these limits apparently fall below the range of the data or in most cases below a decline of 10 percent in 1 year.

[1] The squares of the correlation coefficients shown in table XXI give the proportions of the variation in the rates of asset change accounted for by variation in the rates of return.

A corporation, then, may select any one of a number of different rates of asset change. The major factors which bear upon the action of corporations in this regard may best be seen in terms of a hypothetical case in which it is assumed that all corporations are in the same position at the beginning of the year. During the year, those corporations with the greater expansions of business volume and the greater increases in efficiency would tend to show the greater rates of return. But an expansion of volume tends to involve an expansion of inventories and receivables directly, while increases in efficiency tend to involve capital expenditures. Furthermore, those corporations with the greatest increases in volume would be the ones most likely to add new capacities. Thus, both the rate of return and the rate of asset expansion tend to be greater, the greater the expansion of the volume of business and the greater the efficiency increases.[2]

In actual fact, of course, all corporations do not start each year in the same position. But this tends also to lead to a relation between asset expansion rates and profit rates, rather than to obscure such a relation. For example, among corporations with the same percentage expansion of business volume, those with the greater unused capacity at the beginning of the year would tend to show the lower profit rates as well as the lower asset-expansion rates, partly because of the greater base upon which the rate of asset change is computed and partly because smaller expenditures on capital equipment would be required.

Finally, it may be noted that the tendency of corporations to retain funds even though they are not needed for current operations also tends to lead to a relation between the rate of return and the asset-expansion rate. This is so because the corporations with the greater rates of return tend to be able to retain the greater volumes of "unneeded" funds. While such funds could, and at times, do remain in the cash account, there is a tendency to place them in earning assets. For example, "excess funds" are sometimes used to purchase securities in other corporations either in the same industry or in other industries.[3]

In brief summary, during each year each corporation of the group analyzed selected its rate of asset expansion from among a wide range of possibilities, so that, on the average, the greater its relative rate of return, the greater its relative rate of asset expansion.[4] The selections have been made in this way largely because the same factors tend to determine both the relative rate of return and the relative need for asset expansion. To some extent, also, the relative profit rate determines the relative ability to expand assets.

C. UNDERLYING CONDITIONS AND THE RELATION BETWEEN THE PROFIT RATE AND THE RATE OF ASSET EXPANSION

It was noted in the preceding section that the relation between asset expansion rates and profit rates had changed from year to year. The differences in the location and scatter of the dots shown

[2] Differences in prices received might also be a factor. Presumably for the oil producing and refining corporations covered in this part, such differences would be of relatively minor importance. But in any case, they would appear, in general, to affect both assets and profits in the same direction.

[3] Data of the kind used in this analysis reflect the tendency to place "excess funds" in earnings assets only to the extent that the assets are not included in the cash and equivalent account.

[4] This conclusion is applicable, of course, only to a group of corporations operating as "going concerns" in the same set of circumstances. It does not necessarily apply to corporations in different industries nor to corporations in the same industry at different times. For example, it does not imply that steel corporations with a 10 percent rate of return would have a greater rate of asset expansion than oil corporations with a 5 percent rate of return. Again, it does not imply that oil corporations with a 10 percent rate of return in 1933 would have a greater rate of expansion than oil corporations with a 5 percent rate of return in 1937.

by chart 14 are greater as between years than can reasonably be expected to result from chance fluctuations. Consequently, those differences must in large part be attributed to differences in the conditions under which the corporations covered have operated during the years 1927 to 1938.

There are three measures of the effects of varying underlying conditions upon the relation between expansion rates and profit rates. These are the changes in (1) the average asset-expansion rate associated with a given profit rate, (2) the average difference as between corporations in the rates of asset expansion per 1 point difference in the rate of return, and (3) the amount of variation in asset-expansion rates accounted for by the variation in rates of return. Analysis of the latter will not be given in this study; the first two will be discussed in the following sections. In this section, some of the changes in conditions to which the changes in the relation between profit and asset-expansion rates are to be attributed will be briefly presented.

In analyzing the effects of changing conditions, the study has been restricted to a few of the more fundamental factors affecting the operations of the corporations covered during the years 1927 to 1938. Limitations of time and personnel made this necessary. A more detailed and precise analysis is, of course, possible, but would require a variety of detailed measurements for the many aspects of underlying conditions as well as a series of extensive computations.

TABLE XXII.—*Production, efficiency, and prices, selected items, 1925–38—Oil producing and refining industry*

Year	Domestic production (millions of 42-gallon barrels)		Measures of efficiency			Prices	
	Crude oil	Gasoline	Gasoline production from refineries (percent of crude oil processed)	B.t.u. consumed per barrel of oil refined (thousands)	Oil and acid sludge used as fuel at refineries (percent of oil run to stills)	Mid-Continent crude oil (dollars per barrel)	Regular grade gasoline at Oklahoma refineries (cents per gallon)
1938	1,213	556	44.28			1.18	5.23
1937	1,279	559	43.92	554	2.75	1.21	5.90
1936	1,099	505	44.08	597	3.31	1.10	5.95
1935	997	458	44.19	615	3.80	1.00	5.37
1934	908	417	43.41	638	4.23	1.00	4.74
1933	906	402	43.69	660	4.44	.62	3.93
1932	785	393	44.67	692	4.97	.87	4.66
1931	851	432	44.31	682	4.99	.64	3.77
1930	898	432	41.95	672	5.06	1.24	6.25
1929	1,067	435	39.35	639	5.22	1.36	7.72
1928	901	377	37.42	667	5.08	1.32	7.97
1927	901	330	35.99	721	5.00	1.39	6.86
1926	771	300	34.91	832	5.96	2.13	10.46
1925	764	260	32.43	829	6.82	1.87	10.65

Sources: Data taken from Verbatim Record of the Proceedings of Temporary National Economic Committee, the Bureau of National Affairs, Inc.: Washington, D. C., 1940, vol. 6, pp. 271, 597, 601, 608, 613, and 614. Original sources were given as follows: Prices–American Petroleum Institute; other data–U. S. Bureau of Mines.

The production, price, and technical efficiency data in table XXII indicate the broad changes in the underlying conditions for the oil producing and refining industry during the period 1927–38. From the production data it is clear that in the periods 1925–29 and 1935–37 the output of the oil industry was reaching successive new high levels.

It may be presumed that during those periods the industry was operating at high rates of an expanding capacity. Between 1931 and 1932 production dropped sharply and did not recover to previous high levels until 1935. Thus, during the period 1932–34, the industry was operating substantially below capacity levels, though it may be noted that the underuse of capacity was not so great as for the economy as a whole.

New technologies were continuously introduced throughout the period. The most marked changes in technical efficiency appear to have occurred around the 1926–28, 1932–33, and 1935–36 periods, so that the availability of major new technologies may be presumed to have occurred prior to those dates. The availability of new technologies is important because it provides opportunities for reducing costs. These opportunities can lead to capital expenditures in periods of underuse of capacity as well as of high utilization of capacity, in periods of declining as well as of rising prices, and by corporations with low as well as high rates of return. In fact, in some cases, the pressures upon an individual corporation for action may be greater, the greater the underuse of capacity, the sharper the decline in the prices of its products, and the lower the rate of return.

The price data taken in conjunction with the profit data indicate the marked effects of technological developments upon costs. While some of the price changes undoubtedly resulted from factors other than technology, yet an important part of the difference between current and 1925 prices must be attributed to technology.

D. THE RATE OF ASSET EXPANSION AT A GIVEN PROFIT RATE

High profit rates, in and of themselves, have not been sufficient guaranties of high rates of asset expansion. Similarly, low profit rates, in and of themselves, have not placed rigid curbs upon rates of asset expansion. This is shown by the fact that the amount of asset expansion which has occurred, on the average, at a given rate of return has been different for different years during the period 1927 to 1938.

The average rate of asset expansion at a 10 percent rate of return has varied from no more than 1 percent in 1932 to over 9 percent in 1937 and over 10 percent in 1929. At a 5 percent rate of return, the range has been from an average asset-contraction rate of about 1.4 percent in 1932 to an average asset-expansion rate of 4.5 percent in 1937 and almost 6 percent in 1929. And at no return, the average asset change has varied from a contraction of about 5 percent in 1931 to an expansion of about 1.4 percent in 1929. Complete figures for the zero, 5, and 10 percent rates of return are shown in table XXI.[5]

The variation in the rate of asset expansion associated with a given rate of return has been largely the result of the year-to-year changes in the volume of business, in the rate of capacity utilized, and in prices. The mechanics by which these factors affect the rate of expansion may best be seen in terms of a few hypothetical instances as follows: With a constant physical volume of business, the money value of the current assets which a corporation has to hold tends to vary with the prices of its finished products and raw materials. With prices constant, the

[5] The computations for a 5 percent rate of return are, on the whole, the most reliable since this rate of return has been within or not far outside the range of the data for every year. Figures for 1928 should not be given as great weight as those for other years because of the somewhat arbitrary exclusion of two corporations, with regard to which see section A, supra.

money value of inventories and other current assets tends to vary with changes in the volume of business. With a rising volume of business sufficient to involve a high use of existing capacity, the tendency is first to spend for the improvement, repair, and maintenance of existing plant, and then, with a continuance of the expansion of business volume, to add new capacities.

During the years 1927 to 1929 and 1935 to 1937 the volume of business available to the oil industry was expanding rapidly. Current assets, particularly inventories and receivables, had to expand to keep pace with the rising level of activity. The expansion of the physical volume of output to new high levels made it necessary during the early parts of each period to spend for plant improvements, repairs, maintenance, and minor additions, and, during the rest of the period, to install new capacities. In addition, a rapidly changing technology made it necessary or advisable to replace or greatly improve old capacities. This was particularly true in the years 1927 to 1929 as a consequence of the pressure placed upon the industry to increase its efficiency by the sharp drop in prices between 1926 and 1927. In the years 1935 to 1937, there was no such pressure from prices; in those years, there were price increases, particularly between 1934 and 1936. It may be that the generally lower asset expansion rates shown by the data for the years 1935 to 1937 than for the years 1927 to 1929 is the consequence, in part, of the different price situations in the 2 periods.

In 1930 and 1938 the volume of business leveled off while prices declined slightly. For the industry as a whole it was unnecessary to expand either capacity or current assets. (For an individual corporation, expansion was required only if that company could substantially increase its share of the industry's business; and this apparently did not occur to any great extent.) The expansion which occurred at a given rate of return in 1930 was far below the corresponding expansion in 1929; and similarly for 1938 compared with 1937. For a zero rate of return, the average decline in assets was about 2.8 percent in both 1930 and 1938, in contrast with no decline in 1937 and an increase of more than 1 percent in 1929. For a 10 percent rate of return, the asset expansion rate was 3.3 percent in 1938 and 6.8 percent in 1930, in contrast with the 9.2- and 10.3 percent rates in 1937 and 1929, respectively.

In 1931 whereas prices declined sharply, physical volume remained at approximately the same level as in 1930. As a consequence of the price decline the money value of current assets required also declined. Furthermore, with a declining volume of business there was no necessity for capacity increases for the industry as a whole. While price pressures, as well as redistributions of business, made expenditures upon plant necessary in order to increase efficiencies, these tended to be restricted to funds easily available from internal sources. Thus, the rate of asset expansion for a given rate of return dropped sharply below the 1930 level. For a 5 percent rate of return, for instance, noncash assets on the average declined about 0.5 percent in 1931, compared with an expansion of 2 percent in 1930.

In 1932, whereas prices increased, the output of the oil industry dropped sharply below the level of the preceding 3 years. With wide underuse of capacity and a shrinking volume of business, there was little need for asset expansions. Even at relatively high rates of

return, there was on the average no expansion. This tendency appears to have been accentuated by the adoption of proration of production.[6]

In 1933 the rates of asset expansion for the higher rates of return were not far below the rates in some of the years of high production. For example, for a 10 percent rate of return the indicated expansion rate was about 5 percent in 1933 compared with 6.8 percent in 19[illegible] and 6.9 percent in 1936. But for the lower rates of return, asset contractions were about the same as in 1932. The explanation of these results appears to be as follows: In the middle of 1933 there was a rapid expansion of output from the depression low to a level above the 1930–31 average; sales and inventories also expanded rapidly. Thus, there was a need for and a desire by the industry to expand current assets and to make plant expenditures. But, as a consequence of the banking difficulties, funds were scarce. And, apparently, substantial asset expansions could only be financed (on the average) by those corporations with substantial sums currently passing through the current income account.

In brief, then, the rate of asset expansion associated with a given rate of return has depended largely upon the rate of change in the volume of business, the relations of the volume of business to capacity, and prices. Prices have been important because of (1) their effect upon the volume of business, (2) their effect upon the money value of assets necessary for a given physical volume of activity, and (3) their effect in stimulating the adoption of new cost-reducing technologies. The role of technology, in turn, has affected (1) the extent to which the volume of business could be increased via prices, (2) the extent to which profits could be increased by cost reductions, and (3) the rate of asset expansion in terms of money required to attain particular capacities and improvements.

E. DIFFERENCE IN THE RATE OF ASSET EXPANSION FOR A GIVEN DIFFERENCE IN THE PROFIT RATE

The average difference in the rate of asset expansion per 1 point difference (for example, between 5 and 6 percent) in the rate of return has varied from no more than 0.40 points in 1932 and 1934 to 1.4 points in 1928. The most significant feature of this variation is that it has been associated with the varying extent to which production and price controls have been in effect in the oil industry. Except during periods of rapid industry expansion to new high levels of activity, the amount of difference in asset-expansion rates for a given difference in the rate of return has been lowered by production and price controls.

Differential asset-expansion rates among corporations in the same industry in the same year are largely the result of differential abilities of those corporations to expand their respective volumes of business. Changes in the differential asset-expansion rates from year to year must, therefore, result largely from changes in the differential abilities of corporations to expand their respective volumes of business.

There are many methods which a corporation may use to expand its share of an industry's business. Measures (voluntarily adopted or otherwise) which limit the use of one or more of these methods

[6] See section E, infra.

restrict the relative abilities of companies to expand. The introduction of production and price controls are severe restrictions upon the expansion of one company relative to another. Production proration directly limits the size of the difference between expansion rates. Price control has the same effect by depriving each company of its most effective technique of expanding its share of the industry's business. Consequently, when production and price control measures are in force, differences in asset-expansion rates tend to be smaller than otherwise.

Production and price controls place less important restrictions upon the ability of a corporation to obtain a larger share of an industry's business during periods of relatively great pressures upon productive capacities than during other periods. For, in periods of rapid expansion, prices tend to be rather neutral factors; capacities tend to be rather fully utilized at such prices; and the major problem of a corporation tends to be one of expanding its capacity to keep pace with demand. But, in periods of stable or declining output, the possibility of a corporation expanding its volume rests solely upon its ability to take business from other companies, so that price and production controls place stringent limits upon its ability to do so.

The data cover two periods, 1936 to 1937 and 1927 to 1929, during which the oil industry was expanding rapidly to new high levels of output. In both periods, the average difference in asset expansion rates per 1 point difference in the rate of return was around 0.90 points.[7] But the underlying price and production controls were different in the two periods. In the years 1927 to 1929, production proration was not in effect; in 1936 and 1937, proration was in effect. Furthermore, it appears that price control was greater in the later than in the earlier period.[8] Thus, the data show that such differences in price and production controls have not affected the amount of difference in asset-expansion rates for a given difference in the rate of return when the oil industry was rapidly expanding output to new high levels.

The years 1932, 1933, and 1934 were years of relatively low activity in the oil industry. In 1932 and 1934, the average difference in asset-expansion rates was 0.40 point for a 1 point difference in the rate of return. But, in 1933, the average difference was 0.84 point or almost as high as during the years 1927 to 1931 and 1936 to 1937. These results reflect the effects of production and price controls upon differential-expansion rates.

During 1932 proration was in effect in the important Oklahoma and East Texas fields; furthermore, in June, a duty of $1.05 per barrel was placed upon gasoline imports, thus practically eliminating foreign gasoline from the domestic market. In 1934 the industry was operating under the Code of Fair Competition of the Petroleum Industry,[9] under the National Industrial Recovery Act, designed to place in effect a broad program of production control and price stabilization. In each of these years, prices were sharply above the immediately preceding year. The situation in 1933 was markedly different from that of 1932 and 1934 with respect to production and

[7] The 1.4 point figure for 1928 does not have the weight of the other figures. This is so because of the somewhat arbitrary exclusion of Standard of Indiana and Standard of Ohio. See sec. A, supra.

[8] Cf. *Ethyl Gasoline Corp. et al.* v. *United States*, 309 U. S. 436 (March 25, 1940).

[9] Effective September 2, 1933; minimum price schedule effective December 1, 1933.

price control. Prices in 1933 were sharply below the 1932 level. And, except for the latter part of the year, when the N. I. R. A. Code was in effect, production control on a broad scale did not exist as a result of a United States Supreme Court decision.[10]

Thus, the data show that production and price controls have decreased what might be termed the effectiveness of the profit rate in determining differential expansion rates during the years of low activity in which such controls have been in effect.

During the years of relatively high activity and of no substantial pressures upon capacities, production and price controls have affected differential expansion rates but to a lesser extent than during periods of relatively low activity. This is shown by a comparison of the results for 1930 and 1931, on the one hand, and 1935 and 1938, on the other hand. The N. I. R. A. Code was legally in effect during the early part of 1935 but adherence to its provisions tended to carry over into most if not all of the remainder of the year. In 1938 interstate production proration compacts were in effect; furthermore, price controls were in effect either directly through the mechanism of forcing price agreements in exchange for licenses to use Tetraethyl Lead or indirectly through the high fees charged for licenses to use patented cracking processes. But, except for the production curtailment and proration introduced in the latter part of 1931 in the Kansas, Oklahoma, and East Texas fields, there was no broad production control during 1930 and 1931. Furthermore, there were no tariffs on imports of petroleum products. And in 1930 and 1931, the average difference in asset-expansion rates was around 0.90 points per 1 point difference in the rate of return, while in 1935 and 1938 the average difference was about 0.60 points.

Thus it appears that the effect of production and price controls has been to lower the effectiveness of the profit rate in determining differential expansion rates in the oil industry, except during the periods of marked expansion to new high levels of output. The data also indicate that in the absence of production and price controls the effectiveness of the profit rate with respect to differential asset-expansion rates has not changed with changes in the level of activity.[11]

F. THE LONG TERM RELATION BETWEEN PROFIT RATES AND ASSET-EXPANSION RATES

At the bottom of table XXI are shown computed characteristics of the relation between the average rate of asset expansion and the average rate of return for two 3-year and two 2-year periods. And, in chart 15, the average rates of asset expansion for the various companies have been plotted against the corresponding average rates of return for each of the periods.

During the years 1930 to 1937, the relations between average profit rates and average asset-expansion rates over a period of years were more marked than the relations for individual years. This is

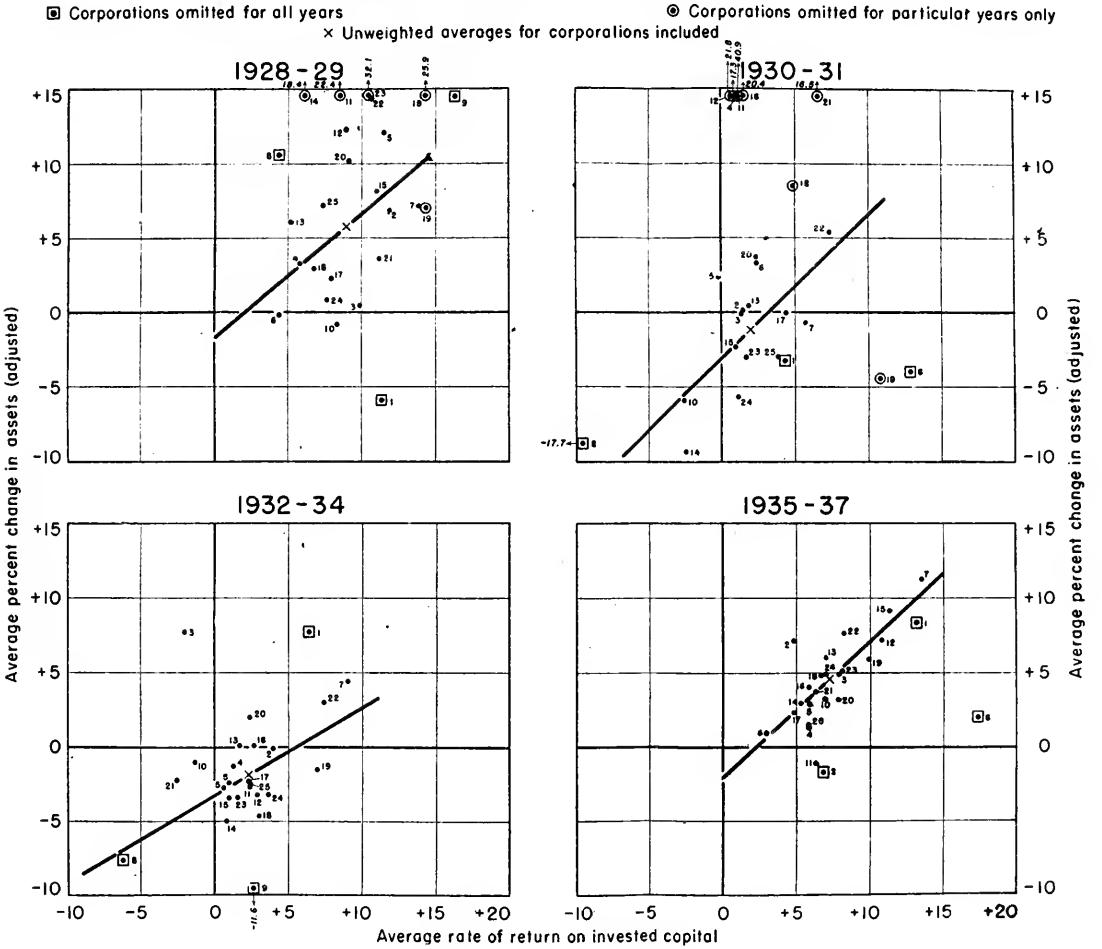
[10] *Sterling* v. *Constantin*, 287 U. S. 378 (December 12, 1932).

[11] It should be noted that all of the changes from year to year in the amount of difference in the asset-expansion rate for a given difference in the rate of return do not meet the usual tests of technical significance based on the assumption of random sampling from an infinite universe. On the basis of such tests, a conclusion might be reached that changes in underlying conditions during the period have had no effects. But to draw such a conclusion would neglect the fact that the sample covers a large part of a finite universe. It would also neglect the cogent reasons for believing there was a connection between the major shifts in the difference in asset-expansion rates for a given difference in the rate of return and the use of production and price-control measures.

Chart 15

RELATION BETWEEN AVERAGE RATE OF RETURN AND AVERAGE RATE OF NON-CASH ASSET EXPANSION, BY GROUPS OF YEARS, 1928-1937

SELECTED OIL PRODUCING AND REFINING CORPORATIONS



Sources and Methods: See Chapter IX and Appendix II, Section B

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shown by the generally higher correlation coefficients for the longer periods. They are 0.63 for the 1930–31 and 1932–34 periods and 0.77 for the 1935–37 period; for the individual years they ranged from 0.30 to 0.80 with most of the coefficients below 0.60.[12]

The closeness of the relation between the averages of the 1928 and 1929 rates was no greater than that for each of the 2 individual years. For the 2 years combined, the computed coefficient was 0.46 while for each of the years 1928 and 1929 it was 0.55. But, because of the somewhat arbitrary exclusions of two companies [13] from the 1928 computations, this difference should not be given much weight.

The closer relations for the averages for groups of years than for the rates for individual years in the period 1930–37 are consequences of (1) the fact that the corporations covered financed practically all of their expansions from internal sources,[14] and (2) the interdependence of past activities, immediate current situations, and future plans.

The interdependence of activities from year to year arises from the cumulative character of economic activities. What has been done (for example, an introduction of a new technology or an accumulation of inventories) in the past need not be done currently; what is done currently need not be done in the future; and what is not done currently may have to be done in the future. Thus, the amount of change in assets which a corporation might desire to make during a year in order to adjust itself to a current situation depends upon the assets it has accumulated in the past. The extent to which it actually makes the change during the current year depends, in part, upon the size of the desired or required change and, in part, upon the physical and financial limitations under which the change must be made. Small changes are typically made as a matter of course in a more or less continuous manner. But large changes tend to be discontinuous in character, partly because of the physical necessities (for example, with respect to plant), and, partly because of financial considerations (for example, favorable conditions for floating securities).

If corporations limit themselves or are limited to expansions which can be financed from internal sources, then their relative asset expansions would tend to be closely related in the long run to their relative profit rates. Major differences as between corporations with the same profit rates would tend to result from differences in dividend policies and the extent to which debt is retired or expanded. But, in the very short run, the closeness of the relation would tend to be less because superimposed upon such differences are the differences which usually occur as between companies in the timing of asset expansion and in the availability of funds. Asset expansions destined to be financed from internal sources may be made before, after, or at the time funds become available from such sources.

Thus, the measurements for the three groups of years from 1930 to 1937 show that the amount of funds oil corporations have placed into assets has been very closely related to the profit rate during those periods in which expansions were in the main financed from internal sources. For the three groups of years, the proportion of the variation in asset expansion rates accounted for by variation in rates of return was between 40 and 60 percent.

[12] A computation for the 5 year period 1933–37 shows a correlation coefficient of 0.78 based upon 22 companies. In this period the coefficients for individual years ranged from 0.30 to 0.80.

[13] See sec. A, supra.

[14] See Investigation of Concentration of Economic Power, Hearings before the Temporary National Economic Committee, 76th Cong., 1st sess., pt. 9, exhibit No. 592, p. 4046.

If corporations do not limit themselves or are not limited to asset expansions which can be financed from internal sources, then their relative asset-expansions need not tend to be closely related either in the short or in the long run to their relative profit rates. This is so because the funds which can be obtained and which might be desired from external sources tend to be only loosely related to the profit rate. In fact, there is a tendency for corporations with the lower profit rates to be in greater need of external financing during periods of rapid industry expansion and great pressure for the introduction of cost-reducing technologies. For these reasons, the relation for the 1928–29 period in which substantial volumes of funds were obtained from external sources was not only not as close as the relations for later periods but also no greater than for the individual years.

G. THE TENDENCY TOWARD CONCENTRATION

There has been a tendency for relative differences in profit rates to persist from year to year. This is shown by the following correlation coefficients covering the relation between the relative profit rates of the oil corporations in different years:

Rates of return correlated	Correlation coefficient		Rates of return correlated	Correlation coefficient	
	Actual	Minimum required for technical significance [1]		Actual	Minimum required for technical significance [1]
1937 and 1936 rates	0.90	0.43	1936 and 1935 rates	0.82	0.43
1937 and 1935 rates	.85	.43	1928 and 1927 rates	62	.46

[1] 5 percent point in the assumption of random sampling from an infinite universe.

These coefficients show that corporations tend to maintain their profit position relative to the average for the industry from one year to the next and to the next following.

With differences in profit rates within an industry persisting over substantial periods and with a relation between profit rates and asset-expansion rates existing in both the short and the long run, there is a tendency for an industry's assets to become more and more concentrated in the hands of relatively few concerns. However, the relation between year to year profit rates is not perfect and there is some shifting about in relative positions from year to year. And, in addition, the rate of asset expansion is not perfectly related to the rate of return. Both of these aspects of corporate behavior indicate substantial offsets to the tendency toward concentration in the form of new firms, reconstruction of existing firms, and decay of old firms. On the other hand, there are other forces leading to concentration of assets. And, judging from the acquisitions, mergers, and so forth,[15] and the rise of the major oil corporations other than the Standard Oil companies, the tendency toward concentration appears to have been the stronger force in the oil industry.[16]

[15] See appendix II, sec. B.

[16] Cf. Verbatim Record of the Proceedings of Temporary National Economic Committee, The Bureau of National Affairs, Inc., Washington, D. C., 1940. Vol. 6, p. 303.

PART IV

CORPORATE PROFIT RATES AND RATES OF INVESTMENT IN PROPERTY

CHAPTER XI

THE METHOD OF MEASUREMENT

A. MEASUREMENT OF THE RATE OF INVESTMENT IN PROPERTY

A corporation can invest the funds at its disposal in a variety of types of assets—land, equipment, receivables, inventories, patents, securities, etc. A critical feature of the investment behavior of a corporation in this regard is the extent to which it invests in assets which are necessary to maintain or to expand its physical capacity to produce goods and services. For industrial corporations, such as those covered in this study, land, buildings, and equipment constitute the most basic category of assets determining their physical capacities. And the present analysis relates to the behavior of corporations with respect to that category of assets.

Other assets, such as inventories and receivables, are also essential for carrying on productive activities. But there is an important distinction between such assets and land, buildings, and equipment in terms of the rapidity with which they can be converted into cash by a "going concern." Current assets can be converted into cash at much more rapid rates than can the fixed assets of a corporation. In fact, the rate for the latter type of assets tends to be limited by depreciation and depletion charges so that the depressing effect upon the national income of fixed asset liquidation tends to be limited to the amount of such charges. And the depressing effect tends to be further limited by the tendency in the economy to force such liquidation to be from capital accounts. This is accomplished by reducing the flow of current gross income into corporations which have to liquidate fixed assets, so that current income is less than the amount necessary to cover depreciation, depletion, and other book charges. Thus, investment in fixed assets tends to be a relatively permanent conversion of money savings into noncash assets. This is another reason why the most fundamental aspects of the investment behavior of corporations relate to their investments in fixed assets.

Corporations generally carry their land, buildings, and equipment in property accounts. The rates of new investment used in this part of the study were based largely upon data from net property accounts as reported by Standard Statistics Co., Inc., and in Poor's and Moody's Industrial Manuals. Net property is, of course, the gross value of property less depreciation, depletion, and other valuation reserves.

Items other than land, buildings, and equipment were included in some of the net property accounts. For example, many oil corporations carry intangibles in their property accounts. Such inclusions did not have any substantial effects upon the analysis since the other than property items were small relative to the total property.

The change in the net property account during a period, after adjustment for book changes in valuation carried directly to surplus,[1]

[1] Or to capital reserves included in invested capital.

represents the volume of investment funds put into property during the period over and above current depreciation, depletion, and other book charges to costs credited to the property accounts or to valuation reserves against that account. If expenditures on property are greater than book charges to costs, the net property account increases; if less, then the net property account decreases.

The rate of investment in property for a year is, then, the percentage change in the net property account after adjustment for revaluations during the year. The method of computation used was the same as the one used for noncash assets and described in chapter IX, section A.

Percentage changes in net property accounts are, of course, not necessarily the same as the percentage changes in physical capacities. Price changes and changes in technology affect seriously the amount of money required for given changes in capacity. However, during the same period, all corporations in a group, such as those covered in this study, would presumably have their facilities improved or expanded roughly by about the same amount for a given volume of expenditures. Differences in valuation practices might, of course, lead to different rates of change in property accounts as between corporations for the same rate of change in physical facilities. But such differences would be in the same direction as the corresponding differences in rates of return resulting from differences in valuation practices.

B. THE NATURE OF INVESTMENT EXPENDITURES

The net amount of new investment which a corporation makes in property and other assets is not the same as the net amount of investment expenditures which that corporation is contributing to the national total of such expenditures. A business has invested the investment funds at its disposal when it has converted those funds into assets other than cash. But from the point of view of the economy as a whole, current savings are not current investment unless they are completely converted into current income. And it is this latter conversion which is the essential requirement for maintenance of the national income.

An illustration will serve to sharpen the distinction. When a business uses retained profits to purchase land, buildings, and equipment, it is currently investing its savings. But not all of such expenditures are necessarily converted into current income by the purchase transactions. For example, part of the expenditures for a machine will be used to cover the depreciation charges of the seller. As a result, some of the current savings of the purchaser out of his current income are converted into liquid capital funds of the seller.

Thus, the effect of a particular expenditure by a business is only partially within the control of that business, even though from that business point of view the expenditure is an investment. Whether or not the savings of a corporation out of current income are converted into current income depends, in part, upon the decisions of that corporation and, in part, upon the decisions of other businesses and individuals. Because of this, it is difficult, if not impossible, to measure the effects of the asset purchases of a corporation—the precise amounts of current income resulting from the spending of investment funds by a corporation. And, consequently, the behavior of individual corporations not only cannot but should not be studied in terms of such effects.

But the behavior of a corporation can be studied in terms of the kind of assets which it purchases. And this is done in this part with respect to the basic assets determining the capacities of corporations in two basic industries—oil and steel.

C. DATA AND METHODS

The methods and data used in this part of the report are the same as those used in part III, except that in this part percentage changes in net property rather than percentage changes in total noncash assets are related to the rate of return. Comments on the data and methods contained in chapter IX also apply to this part.

It should be noted that the technical bias arising from differences in accounting procedure tends to be less when only a portion of the assets are considered than when total assets are considered. This is so because all the effects of differences in accounting procedures for assets other than cash are reflected in the rate of return figures, whereas only the effects of differences in accounting procedures for property are reflected in the rate of property expansion figures. In fact, it is possible that differences in accounting procedures for assets other than property may more than offset the technical bias arising with regard to such differences for property. But, in any case, it is believed that the effects of such differences are relatively minor.

CHAPTER XII

RELATION BETWEEN PROFIT AND PROPERTY-EXPANSION RATES: OIL PRODUCING AND REFINING CORPORATIONS

The corporations covered are the same as those listed and discussed in chapter X, section A.

A. RELATIVE PROFIT RATES AND RELATIVE PROPERTY-EXPANSION RATES

Chart 16 shows the percentage changes in net property of the various companies plotted against their rates of return for each of the years 1927 to 1938. Only for the years 1931 to 1933 and 1936 are there clearly discernible relations between the rate of return and the rate of property-expansion,[1] with the higher property-expansion rates associated with the higher rates of return. In the other years, the chart shows only a slight tendency for the profit rate to be associated with the property-expansion rate.[2]

That the relation between property-expansion rates and rates of return should not necessarily be marked in each year follows from the discontinuous character of the larger capital expenditures of individual companies, and from the differences, as between companies, in the timing of such expenditures.

Large additions to property are generally made by "going concerns" either to expand capacity or to introduce new technologies on a major scale or both. Under conditions of large scale production such additions usually have to be undertaken in large lumps,[3] since a large new production unit or a major change in an existing unit cannot be introduced gradually. Consequently, the expenditures required for major additions cannot be geared to the volume of funds currently available from book charges to costs and retained profits. Frequently major expansions have to be financed by security issues, from past and future retained profits, or from past and future depreciation and depletion allowances. Consequently, the current profit rate tends to be only loosely related to the current volume of expenditures for major expansions.

Furthermore, the factors affecting major capacity expansions tend to be timed differently for different companies because of differences in the condition of plant, in pressure on existing capacities, in financing

[1] These are the only years for which the correlation coefficient is above the level required for technical significance for a single year on the assumption of random sampling from an infinite universe. See table XXIII, infra.

[2] The usual tests of technical significance (which are based upon the assumption of random sampling from an infinite universe) when applied to the computed relations for most of the years taken separately for 1 year at a time would appear to indicate the conclusion that no relation existed in each of those years. But when the results for all of the years are considered as a whole they definitely show that a relation has existed on the average. The reason for this is that the magnitude of a correlation coefficient required for technical significance in one of the years is much greater than for the "average" coefficient over the 12 years. In addition it should be noted that the usual tests do not take into account the fact that the sample covers a large part of a finite universe. As a consequence of this fact alone, the correlation coefficient required for technical significance is much lower than indicated by the usual tests.

[3] In the oil industry this is particularly true since a substantial share of property consists of oil lands which are frequently purchased or sold in large lumps.

procedures, etc. On corporate books these differences in timing are accentuated because of differences in accounting procedures.[4] As a consequence of all these things, major expansions in any 1 year tend to be few in number while the expenditures for one particular company, particularly as recorded in property accounts, tend to be lumped in single years. And on a chart such as chart 16, the behavior of those corporations carrying on major expansions appear to depart widely from the "general run" in particular years.

Smaller additions and improvements to land, buildings, and equipment are made by "going concerns" as adaptations of relatively fixed facilities to a current situation. The amount of expenditures for such items can be rather closely adjusted to the volume of funds currently available from internal sources and, hence, to the current profit rate. Furthermore, it may be noted that the bulk of the smaller additions and improvements are undertaken, completed, and entered in the accounts in the same year, so that the amount of interlocking of behavior and results from year to year tends to be relatively small.

The results for years of high activity are most affected by the major expansions since it is in those years that such expansions tend to take place. For such years, the data tend to show a low degree of relationship between rates of return and rates of property expansion. This is best illustrated by the 1937 results. Atlantic Refining (2), Humble Oil (7), Standard of New Jersey (20), and Standard of Ohio (21) had large property expansions in comparison with those of other companies. Exclusive of these companies (and of the other four excluded from the computations for 1937) ,there was a definite tendency for the relative rates of return and relative property-expansion rates to be related.[5] In 1929 the situation was similar though large expansions seem to have been more widespread since nine of the companies in 1929 and only four in 1937 had property expansions of more than 10 percent.

During periods either of relatively high and stable activity or of substantial underuse of capacity, major expansions have tended not to occur in the oil industry and relations between rates of return and property-expansion rates have tended to be marked. This is shown by the data for the years 1931 to 1933. In those years between 28 and 52 percent of the variation in property-expansion rates was accounted for by variation in rates of return.

By considering average expansion and profit rates over a period of years, the effects of the interlocking of behavior and results of different years can be taken into account. This interlocking occurs for both major and minor expansions but tends to be much greater for the former.

Data for two 2-year and two 3-year periods are plotted in chart 17 and the computed characteristics of the relations between average property expansion and average rates of return are shown at the bottom of table XXIII. They show, in general, much more marked relations between property-expansion rates and rates of return than do the individual years.

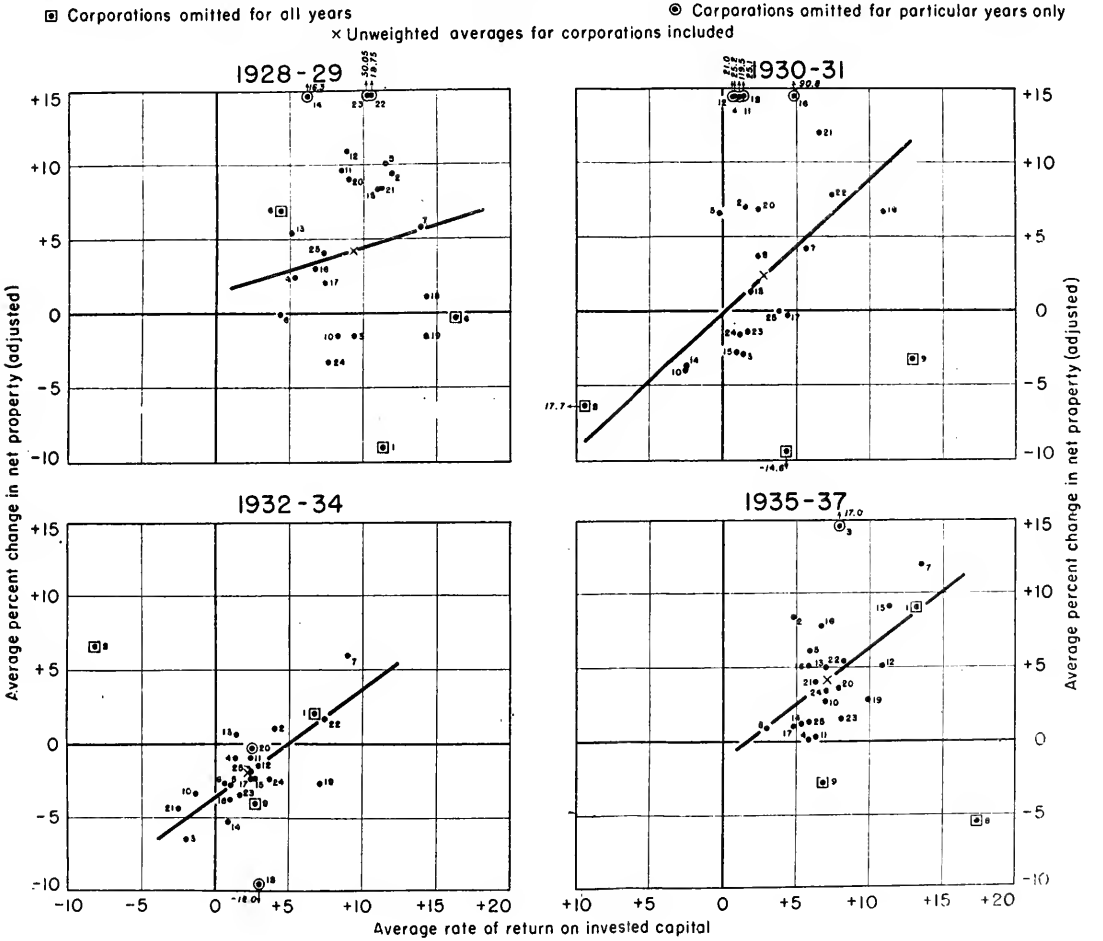
[4] Some corporations, for example, may enter the cost of "work undertaken" in the property account when contracts are let; others when contracts are fulfilled; and still others at various times during the period between the letting of contracts and their fulfillment.

[5] For the 17 companies, the correlation coefficient is 0.43 compared with a minimum of 0.48 required for technical significance on the assumption of random sampling from an infinite universe.

Chart 17

RELATION BETWEEN AVERAGE RATE OF RETURN AND AVERAGE RATE OF NET PROPERTY EXPANSION, BY GROUPS OF YEARS, 1928-1937

SELECTED OIL PRODUCING AND REFINING CORPORATION



Sources and Methods: See Chapters IX and XI and Appendix II, Section B

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TABLE XXIII.—*Computed characteristics of the relation between the rate of return and the rate of property expansion, by years and by groups of years, 1927–38—Selected oil producing and refining corporations*

Year or group of years	Number of companies included	Companies not included (identifying numbers)	Unweighted average percent change in net property	Unweighted average rate of return on invested capital (percent)	Indicated average percent change in net property at—			Indicated average difference in the percent change in net property per 1 point difference in the rate of return	Correlation coefficient	
					Zero return	5 percent return	10 percent return		Actual	Minimum required for technical significance[1]
Individual years:										
1938	21	1, 8, 9, 3	2.15	4.83	−0.46	2.24	4.94	0.54	0.36	0.43
1937	21	1, 8, 9, 3	7.50	8.94	2.30	5.21	8.12	.58	.33	.43
1936	21	1, 8, 9, 3	4.13	7.43	−2.64	1.92	6.47	.91	.56	.43
1935	21	1, 8, 9, 18	.50	5.30	−1.68	.38	2.43	.41	.31	.43
1934	22	1, 8, 9	.89	3.37	−.65	1.64	3.93	.46	.36	.42
1933	22	1, 8, 9	−4.04	1.75	−5.18	−1.94	1.31	.65	.65	.42
1932	20	1, 8, 9, 18, 20	−2.58	1.95	−3.79	−.68	2.43	.62	.53	.44
1931	19	1, 8, 9, 4, 16, 21	−1.88	−.15	−1.72	3.46	8.64	1.04	.72	.46
1930	19	1, 8, 9, 11, 12, 18	5.04	5.35	2.88	4.90	6.92	.40	.25	.46
1929	21	1, 8, 9, 14	8.26	10.05	4.13	6.19	8.24	.41	.19	.43
1928	19	1, 8, 9, 14, 22, 23	.97	8.76	−1.79	−.21	1.36	.32	.23	.46
1927	22	1, 8, 9	7.91	5.60	11.27	8.27	5.28	−.60	−.18	.42
Groups of years:[2]										
1935–37	21	1, 8, 9, 3	4.16	7.22	−1.26	2.49	6.25	.75	.58	.43
1932–34	20	1, 8, 9, 18, 20	−1.91	2.31	−3.56	0	3.57	.71	.77	.44
1930–31	17	1, 8, 9, 4, 11, 12, 16, 18	2.31	2.78	−.18	4.30	8.77	.89	.63	.48
1928–29	19	1, 8, 9, 14, 22, 23	4.23	9.37	1.85	3.12	4.39	.25	.16	.46

[1] Five percent point on the assumption of random sampling from an infinite universe.
[2] Average percent changes in net property and average rates of return are on an annual basis.

Sources and methods: See appendix II, sec. B and chs. IX and XI.

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Only in the two periods, 1928–29 and 1935–37, were there any substantial number of major property expansions [6] by the corporations covered, although some apparently occurred in 1930. The data for the 1928–29 period indicate little, if any, relation between profit rates and property-expansion rates; it was in that period that major expansions were most frequent. For the 1935–37 and 1930–31 periods, the volume of major expansions was much lower and a relation between property-expansion and profit rates is definitely shown. And the greatest degree of relationship is shown for the 1932–34 period when major expansions were not recorded. In the 1930–31 period, the variation in rates of return accounted for about 40 percent of the variation in property-expansion rates; in the 1935–37 period, about 34 percent. But, in the 1932–34 period, almost 60 percent of the variation in property-expansion rates was accounted for by variation in rates of return.

The results indicate that the corporations which spend relatively large amounts on property during one year of a 2- or 3-year period tend to spend smaller amounts on property in the other years than do the other companies with comparable profit rates during the whole period. In other words, over a period of years, there has tended to be an averaging out of the high and low expansion rates for individual corporations with comparable rates of return.

The results also indicate that major expansions tend not to be related to the profit rate in the year in which they occur but may be related to the profit rate over a more extensive period. However, when there are a large number of major expansions during a period they tend to be only loosely related to the profit rate during that period.

B. THE RATE OF PROPERTY EXPANSION AT A GIVEN PROFIT RATE

High profit rates, in and of themselves, have not been sufficient guaranties of high rates of property expansion. This is shown by the fact that the rate of property expansion associated with a high rate of return has varied from period to period. Thus, during the 1932–34 period, corporations with an average annual rate of return of 10 percent expanded their property at an average annual rate of about 3.6 percent. But, in each of the other periods, corporations with a 10 percent rate of return expanded their property on the average at a much higher rate—in the 1935–37 period at a 6.3 percent rate, in the 1930–31 period at an 8.8 percent rate, and in the 1928–29 period at a 4.4 percent rate. Further computed results are contained in table XXIII.

The amount of expansion associated with a low profit rate has also varied from period to period. During the 1932–34 period, corporations with no return contracted their property, on the average, at an annual rate of about 3.6 percent. But in the 1935–37 and 1930–31 periods, the average contraction rate associated with no return was much lower, 1.3 percent and 0.2 percent, respectively. And in the 1928–29 period, it appears that corporations with no return expanded their property at an average annual rate of at least 1.9 percent.

Conditions other than the profit rate have, therefore, been important factors in determining the rate of expansion. Of these other

[6] Other than consolidations, mergers, etc., of course.

conditions, the most important appear to have been the rate of capacity utilization and technological change. How these factors have affected the expansion rate may best be seen in terms of the year by year historical development.

Prior to 1927, the output and capacity of the oil industry had expanded rapidly. In the face of the general business decline in 1927, the output of the oil industry continued to expand. Thus, there was some need for new capacities and some "carry-over" of expansions started in earlier years. And, as a consequence of the sharp price decline between 1926 and 1927, there was severe pressure upon the industry to introduce cost-reducing technologies. Thus, the amount of property expansion tended to be relatively high. For a 5 percent rate of return, for example, the rate of property expansion was about 8 percent on the average.

By 1928 the amount of expansion and the introduction of new technologies had apparently been sufficient to carry an expanded volume of business in 1928 on the basis of property expenditures which tended to approximate depreciation and depletion charges. As a consequence, there was little expansion of property in 1928 even by corporations with high profit rates. In 1929, there was a marked expansion of demand above the earlier high levels; a need for new capacities developed; and the rate of property expansion was relatively high at all rates of return within the range of the data. For example, for a 10 percent rate of return, the indicated average rate of property expansion was in excess of 8 percent.

In 1930 and 1931 demand leveled off and new capacities were not needed for the industry as a whole. But, as a result of the severe price decline, particularly in 1931, there were pressures upon the industry to introduce new cost-reducing technologies. In 1930, property expansion, though on a somewhat lower level than in 1929, continued; to some extent, this must be attributed to a "carry-over" of 1929 expansion programs, but the major factor appears to have been the necessity for changes in technology. In 1931, the need for cost reductions continued. For moderate and low rates of return, the rate of property expansion dropped below the levels of the preceding years. But for the high rates of return, the rate was at least as great as during the preceding years. This would appear to indicate that the corporations with the lower rates of return were limited to a greater extent than in earlier years in terms of the funds which were available to them.

In 1932, output dropped sharply and, while there were increases in 1933 and 1934, the high level of the years 1929 to 1931 was not exceeded until 1935. Thus, during the years 1932–34, and, to some extent in 1935, there was little need for capacity expansions. At the lower profit rates, there were property contractions. And, even at high profit rates, the rate of property expansion was small relative to periods of high output. The expansions which did occur appear largely to have been the result of technological change.

With the expansion of output to new high levels in the 1935–37 period, new capacities were required. The amount of property expansion undertaken during that period at a given profit rate increased over the level of the period of substantial underuse of capacities. For a 5 percent rate of return, for example, the average rate of property expansion was about 2.5 percent in the 1935–37

period, compared with no expansion on the average at that rate of return in the 1932–34 period.

With the leveling off of output in 1938, the rate of property expansion at a given rate of return dropped. For example, at a 5 percent rate of return, it was 2.2 percent on the average compared with 5.2 percent in 1937. Some of the expansion in 1938 was undoubtedly a "carry-over" from 1937, while another part was the result of the necessity for introducing new technologies.

In brief, in the oil industry, the rate of property expansion at a given rate of return has been greater, the greater the utilization of capacity and the greater the necessity for introducing new technologies.

C. DIFFERENCE IN THE RATE OF PROPERTY EXPANSION FOR A GIVEN DIFFERENCE IN THE PROFIT RATE

The computed average differences in the rate of property expansion per 1 point difference in the rate of return for both groups of years and for individual years are shown in table XXIII. The data for the individual years are graphically portrayed in chart 16 and those for the groups of years in chart 17.

In the oil industry both the desire and ability to obtain funds from external sources have been only loosely related to the profit rate during periods of very rapid expansion to new high levels of output. This is shown by the fact that the average difference in property expansion rates per 1 point difference in the rate of return has been low during periods in which the oil industry has been financing expansions to a considerable extent from external sources.[7]

During the 1928–29 period expansions were financed to a considerable extent by funds from external sources. On the other hand, during each of the three periods during the longer 1930–38 period for which data are shown in table XXIII, practically all of the expansions of the oil industry were financed from internal sources. In the early period the average difference in expansion rates per 1 point difference in the rate of return was 0.25 points; in the other periods the average difference ranged from 0.71 to 0.89 points.

Analysis by individual years yields the same results. Expansions were financed from external sources to a substantial extent in the years 1927 to 1930 and to a lesser extent in 1937 and 1938; practically no funds were obtained from external sources during the years 1931 to 1936. The average difference in property expansion rates per 1 point difference in the rate of return ranged from —0.60 to 0.41 points in the years 1927 to 1930 and was around 0.55 points in 1937 and 1938; in the 1931–36 period the range was from 0.41 to 1.04 points.

When the total property expansion over a period of years has been financed from internal sources the effectiveness of the profit rate has not changed materially with underlying conditions from period to period. This is shown by the relative stability of the average difference in property-expansion rates for a given difference in the rate of return over the three groups of years within the 1930–38 period. But the timing of expenditures within a period of years in which expansion is financed from internal sources has varied with the level

[7] The financing of expansions of capital assets from external sources tends to involve relatively large blocks of capital. And, in the nature of the case, periods of substantial external financing are periods in which major expansions occur. cf. this section with sec. A, supra.

of output and with the necessities and opportunities for introducing new cost-reducing technologies. This may be seen from an analysis of the data for the individual years 1931 to 1936.

During the years 1931 to 1933 there was, by and large, as a consequence of the lower prices relative to 1928–29, considerable pressure upon the industry to reduce costs. This pressure was greatest in 1931; it was in that year that the average difference in the rate of property expansion per 1 point difference in the rate of return reached the peak of 1.04 points. With expansions dependent upon funds from internal sources the oil corporations apparently spent strictly in accordance with their means. With the pressure on costs somewhat reduced in 1932 and 1933 the effectiveness of the profit rate dropped 40 percent to an average difference in property-expansion rates of about 0.63 point per 1 point difference in the rate of return.

In 1934 and 1935 the oil industry was operating under the N. I. R. A. Code. Production proration tended to limit relative differences in expansion rates and the pressure on costs was relaxed as a result of price increases. Furthermore, the earlier introductions of cost reducing technologies tended to reduce the scope of current introductions. The average difference in the profit rate per 1 point difference in the rate of return continued to decline and reached the low figure of 0.41 in 1935.

The effectiveness of the profit rate increased sharply in 1936 to an average difference of 0.91 point in the property-expansion rate per 1 point difference in the rate of return. This increase must be attributed to the expansion of output to new high levels which made it necessary for corporations to expand and improve capacities, since in 1936, as in the immediately preceding years, production and price control measures were in effect.

In brief, in the oil industry, the effectiveness of the profit rate in determining differential property-expansion rates over a period of years has depended upon the amount of expansion financed from external sources. When expansions over a period of years have been financed from external sources, the influence of the profit rate has been relatively low, indicating a loose relation between the profit rate and the desire and ability to obtain funds from external sources. Within periods during which property expansions have been financed from internal sources, the timing of expansions has depended upon the acuteness of the need for new capacities and for the introduction of new techniques.

CHAPTER XIII

RELATION BETWEEN PROFIT AND PROPERTY-EXPANSION RATES: 17 STEEL CORPORATIONS

A. THE CORPORATIONS

The analysis covers the following 17 corporations:

1. Acme Steel Co.
2. American Rolling Mill Co.
3. Bethlehem Steel Corporation (Delaware), (formerly subsidiary of Bethlehem Steel of New Jersey).
4. A. M. Byers Co.
5. A. M. Castle & Co.
6. Crucible Steel Co. of America.
7. Inland Steel Co.
8. Jones & Laughlin Steel Corporation.
9. Keystone Steel & Wire Co.
10. Otis Steel Co.
11. Sloss-Sheffield Steel & Iron Co.
12. Superior Steel Corporation.
13. Truscon Steel Co.
14. United States Pipe & Foundry Co.
15. United States Steel Corporation.
16. Warren Foundry & Pipe Corporation.
17. Youngstown Sheet & Tube Co.

These corporations are classified as steel and iron companies by the Standard Statistics Co., Inc., in their compilations. They have upward of 70 percent of the steeli ngot capacity of the industry. Since the steel industry is characterized by large producing units most of the companies are large, having net property accounts in excess of $5,000,000 each.

Of the 17 companies, three (Bethlehem (3), Jones & Laughlin (8), and United States Steel (15)) are integrated producers with capacities concentrated in the heavy steel product fields; two (Crucible (6) and Truscon (13)) are nonintegrated producers with capacities concentrated in those fields. Sloss-Sheffield (11) is a pig iron producer. Three of the companies (American Rolling Mill (2), Inland (7), and Youngstown (17)) are integrated producers with capacities concentrated in the light steel product fields. The remaining companies are nonintegrated producers of limited lines of light steel products.

Castle (5) and Warren (16) had to be omitted from the computations for 1927 since property account figures as of the end of 1926 were not available. For these two companies the average rates of property change for the years 1928 and 1929 were used in the analysis of the 1927–29 period in place of the average rates for the 3 years.

Superior Steel (12) was omitted from the 1938 computations. A major property revaluation and other accounting adjustments during

that year made it impossible to obtain a reliable measure of the adjusted percentage change in the net property account.

B. UNDERLYING CONDITIONS

During the World War period, capacities for steel production were increased sharply; steel ingot capacity rose from 40,000,000 gross tons at the beginning of 1914 to 57,000,000 gross tons at the end of 1919. Production slackened, however, after the war, and it was not until 1923 that the output of steel again attained the war period level. Between 1923 and 1927, consequently, expenditures on plant were largely for the purpose of increasing efficiency and for making minor additions to capacities, particularly for special types of steels. Following the slight recession of 1927, output increased sharply to new high levels in 1928 and 1929. During the same period, new cost-reducing technologies were developed; the most important of these new techniques were concentrated in the field of light steels; and the most striking was the continuous strip mill. Sustained high output and the revolutionary changes in technology led the industry to plan and embark upon a program for substantial additions to and replacements of capacities. As a result, steel ingot capacity increased from 60,000,000 gross tons at the beginning of 1927 to 70,000,000 gross tons at the end of 1931.

Except for a brief period in 1937, however, the industry's output during the years 1930 to 1938 was not only considerably below the capacities available, but also was below the actual production of 1928 and 1929. Output reached an unprecedented low level in relation to capacity in 1932 when the industry operated at less than 20 percent of capacity. Following 1932, output expanded slowly at first and then more rapidly. By 1937, a level approximating that of 1928–29 had been reached. But the relatively high level did not hold, and in 1938 output was again sharply below the 1928–29 level.

Since 1932 there have been only minor increases in total steel ingot capacity, but as a consequence of the shift in demand from heavy to light steels, the advantages to be obtained from the new continuous strip mills, and the development of special steels, expansions on an increasing scale were undertaken from 1933 through 1937 to provide modern facilities for the production of sheets, strips, and special steels.

Throughout practically the whole period covered by the present analysis, the price policy of the steel industry remained unchanged. Until June 1938 the industry operated under the basing point pricing system with relatively few basing points. In June 1938 the industry changed its pricing system to provide for a greater number of basing points. At the same time, quoted prices were reduced.

The general course of prices has been as follows. Beginning in 1930, prices declined from the comparatively stable levels of the 1927–29 period to the depression low in 1933. There then followed step by step increases to 1937 when prices exceeded the 1929 peak. The prices of the various iron and steel products, however, did not all follow an identical pattern. In general, the prices of the important light steel products for which new technologies of production had been developed drifted downward in the 1927–29 period and then dropped sharply during the 1930–33 period; though they subsequently recovered, they did not reach 1929 levels. The prices of

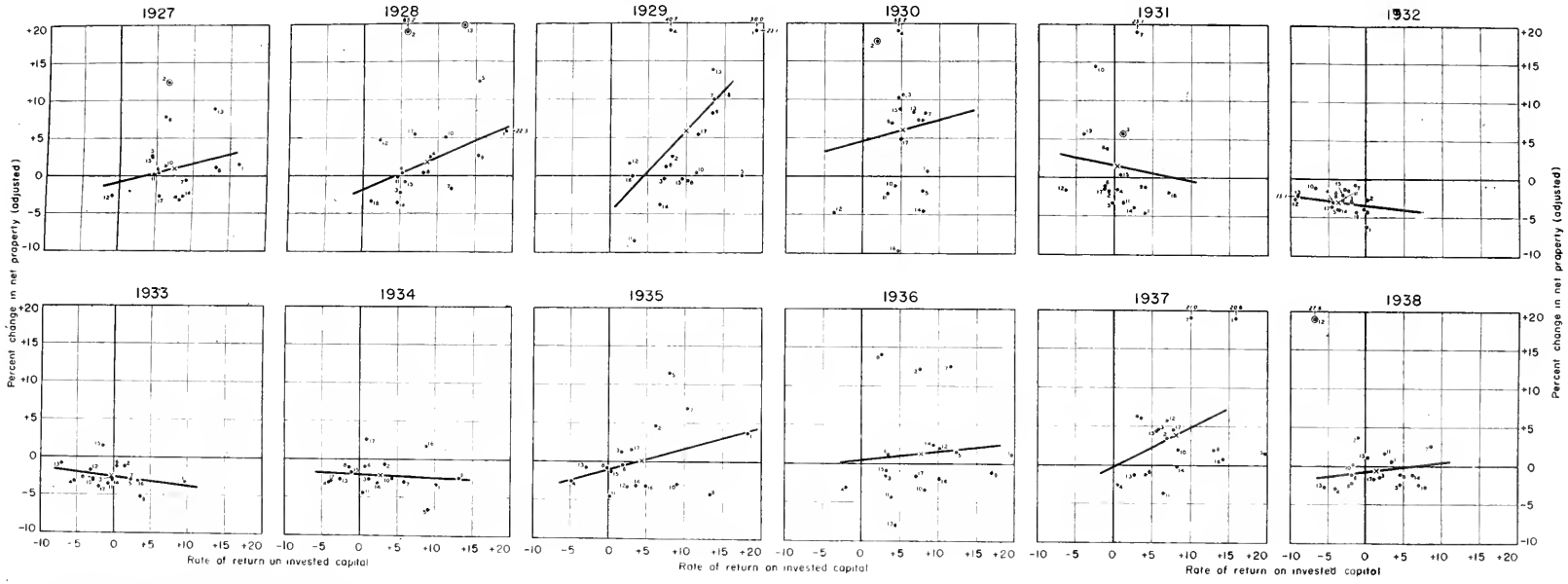
Chart 18

RELATION BETWEEN RATE OF RETURN AND RATE OF NET PROPERTY EXPANSION, BY YEARS, 1927 - 1938

SELECTED STEEL AND IRON CORPORATIONS

× Unweighted averages for corporations included

⊛ Corporations omitted for particular years only



Sources and Methods See Chapters IX and XI Appendix II, Section B

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sequently recovered, they did not reach 1929 levels. The prices of

the important heavy steel products, however, increased during the 1927–29 period, dropped little during the depression, and, by 1937, had risen above the 1929 levels.

Selected series of statistical data on capacity, production, and prices are contained in table XXIV.

TABLE XXIV.—*Capacity, production and prices, selected items, 1925–38—Steel and iron industry*

Year	Steel ingot			Production of hot-rolled iron and steel products (thousands of gross tons)			Prices (cents per pound)		
		Production			Distributed to—				
	Capacity, beginning of year (thousands of gross tons)	Thousands of gross tons	Percent of capacity	Total	Automotive, container (light), and furniture and furnishings industries	Railroad, construction, and shipbuilding industries	Steel composite	Structural shapes	Cold-rolled strip
1938	[1] 71,594	[1] 28,350	39.6	20,986	6,302	5,564	2.394	2.17	3.31
1937	[1] 69,775	[1] 50,569	72.5	36,766	11,185	9,924	2.464	2.21	3.49
1936	[1] 69,790	[1] 47,768	68.4	33,801	10,580	9,677	2.077	1.85	3.02
1935	[1] 70,046	[1] 34,093	48.7	23,965	9,185	5,789	2.058	1.80	2.95
1934	[1] 69,755	[1] 26,055	37.4	18,970	6,253	5,654	2.033	1.78	2.96
1933	70,191	23,232	33.1	16,735	5,807	4,064	1.879	1.68	2.48
1932	70,340	13,681	19.4	10,451	3,068	3,545	1.901	1.57	2.80
1931	68,980	25,946	37.6	19,176	4,932	7,007	1.957	1.62	3.13
1930	65,166	40,699	62.5	29,513	6,650	11,577	2.048	1.69	3.64
1929	63,784	56,433	88.5	41,069	8,897	15,314	2.209	1.92	4.06
1928	61,465	51,544	83.9	37,663	9,086	13,359	2.165	1.87	4.03
1927	60,032	44,935	74.8	32,879	[2] 6,303	13,576	2.202	1.83	4.17
1926	57,813	48,294	83.5	35,496	[2] 6,834	14,237	2.315	1.95	4.30
1925	61,137	45,394	74.2	33,387	[2 3] 6,313	[3] 13,653	2.334	1.99	4.39

[1] Includes only that portion of capacity and production of steel for castings used by foundries operated by companies producing steel ingots.

[2] Excludes distribution to furniture and furnishings industry for which data are not available; peak distribution prior to 1935 was 625,000 gross tons.

[3] Includes allocations of jobber shipments made by Iron Age.

Sources: Taken from Investigation of Concentration of Economic Power, hearings before the Temporary National Economic Committee, 76th Cong., 1st sess., exhibits 1409 and 2180, presented to the committee by the United States Steel Corporation. Original sources were given as follows: Capacity and production—American Iron and Steel Institute; Distribution to Consuming Industries—Iron Age and American Iron and Steel Institute; Prices—Iron Age.

C. RELATIVE PROFIT RATES AND RELATIVE PROPERTY-EXPANSION RATES

Chart 18 shows the percentage changes in net property of the various companies plotted against their rates of return for each of the years 1927 to 1938. Only for the years 1928 and 1929 does the chart indicate any marked relation between the rate of property expansion and the rate of return. In those 2 years, the greater profit rates were associated with the greater rates of return. In all other years the chart indicates that there has been little, if any, relationship between them. In most of these other years the chart indicates that a few companies had large expansions while the remaining companies either contracted their property accounts or expanded them slightly. In some years, particularly 1932 and 1933, the chart indicates slight tendencies for the greater profit rates to be associated with the lower property-expansion rates.

Thus, a positive relation between property-expansion rates and profit rates has existed in the steel industry only in the individual years in which the industry's volume of output was expanding to new high levels, the rate of utilization of capacity was high, and the capacity of the industry was expanding. Under such conditions, regardless of differences in the product-mix of the various corporations included in the analysis, those with the higher profit rates tended to be those with the greater use of capacity, with the greater efficiency, with the greater amounts of funds available from internal sources, and with the greater abilities to obtain funds from external sources. But the corporations with the greater use of capacity tended also to be those requiring the greater expenditures for maintenance, repairs, and improvements as well as those with the greater needs for new capacities. The positive relation between profit rates and expansion rates in 1928 and 1929, therefore, reflects the dependence of both profit and expansion rates upon the same general factors—rate of capacity operations, efficiency, and availability of funds.

During the years 1930 to 1934 the relative profit positions of steel companies depended upon the kind of products they were equipped to produce and upon the relative technological efficiency of their equipment. Marketwise, the major distinction was between companies with proportionately greater capacities for heavy steels and those with proportionately greater capacities for light steels. With regard to technology, the major distinction was between companies with continuous strip mills and those with hand mills. Companies with the new type mills and with large proportions of their facilities in light steel capacities tended to be those with the greater profit rates. But those companies, because of the low level of output, were not in need of new capacities. Other companies, however, either had to install the new type mills or to forego a share of the available business; some of them installed the new type of mill while others did not. But those companies which did install new type mills in order to obtain a share of the available business tended to do so without regard to their current profit rate. As a consequence, there tended to be little or no relation between the current profit rate and the current expansion rate in the years 1930 to 1934. Such relationships as are indicated by the data were very slight and inverse.[1]

During the years 1935 to 1937, the output of light steels, particularly those produced by the new techniques, attained new high levels. The companies with the greater profit rates, therefore, tended to be those (for example, Inland (7), American Rolling Mill (2), and Acme (1)) with the proportionately greater capacities in light steel. And these companies tended to add to their capacities in line with the expanding demand. At the same time, however, other companies (for example, United States Steel (15), Bethlehem (3), and Jones & Laughlin (8)) with the lower profit rates but which had funds for expansion, either accumulated from internal sources or drawn from external sources, also added capacities for light steels. But, heavy steel capacities were not needed and not installed, although plant

[1] A slight tendency for inverse relations to appear in years of low output may only be the result of the tendency of corporations to vary depreciation and other book charges with the volume of output or profits. But it may also be the result of (1) the tendency for corporations with the lower profit rates to be those with the less efficient equipment and, hence, those requiring the greater expenditures for maintenance and repairs, and (2) the greater necessity for corporations with the lower profit rates to adopt new technologies. The latter possibility applies primarily to major expansions; the others to minor additions and improvements and to maintenance and repairs.

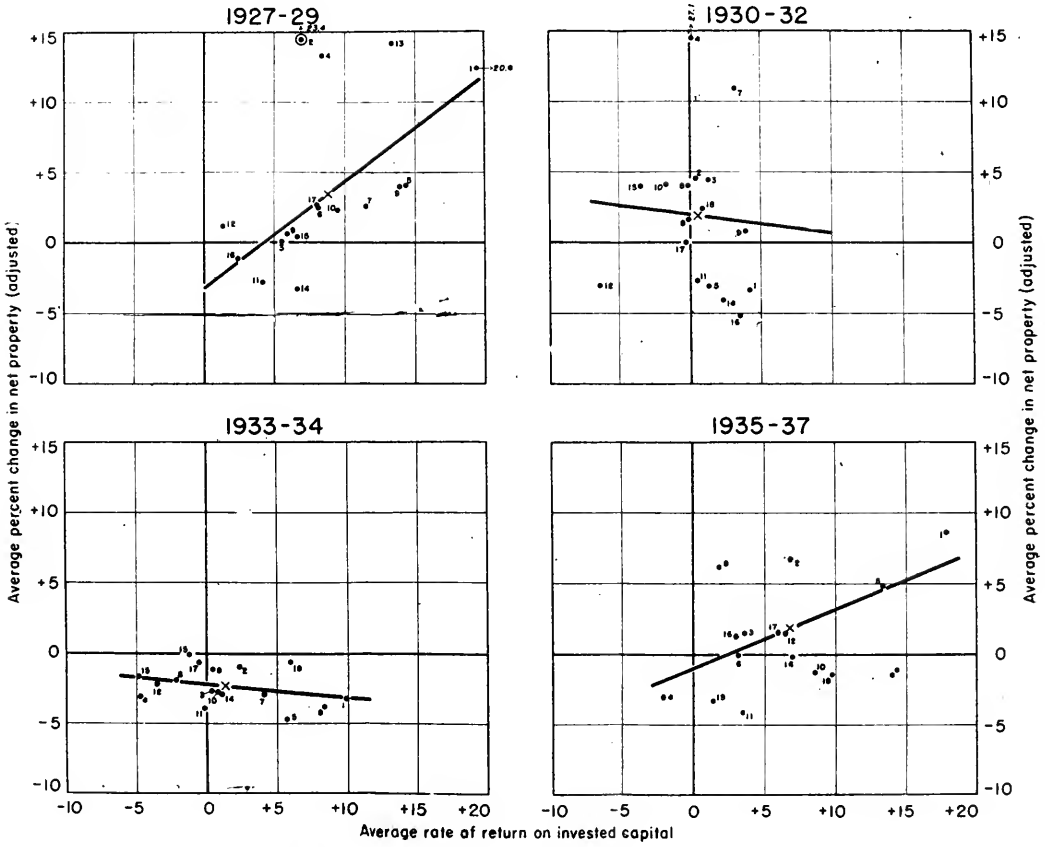
Chart 19

RELATION BETWEEN AVERAGE RATE OF RETURN AND AVERAGE RATE OF NET PROPERTY EXPANSION, BY GROUPS OF YEARS, 1927-1937

SELECTED STEEL AND IRON CORPORATIONS

⊙ Corporations omitted for particular years only

× Unweighted averages for corporations included



Sources and Methods: See Chapters IX and XI and Appendix II, Section C

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expenditures for maintenance, repairs, and improvements of such capacities probably did increase and most likely were related to relative profit rates. The net result, as shown by the data, was a slight positive relation between current profit and current property-expansion rates in each year and a few large expansions of light steel capacities in each year.

Analysis of average profit and property-expansion rates over a period of years confirms the analysis based upon the results for individual years. Computations are shown at the bottom of table XXV and the data are plotted in chart 19.

TABLE XXV.—*Computed characteristics of the relation between the rate of return and the rate of property expansion, by years and by groups of years, 1927–38—Selected steel and iron corporations*

Year or group of years	Number of companies included	Companies not included (identifying numbers)	Unweighted average percent change in net property	Unweighted average rate of return on invested capital	Indicated average percent change in net property at—			Indicated average difference in the percent change in net property per 1 point difference in the rate of return	Correlation coefficient	
					Zero return	5 percent return	10 percent return		Actual	Minimum required for technical significance[1]
Individual years:										
1938	16	12	−0.51	1.54	−0.69	−0.11	0.48	0.12	0.23	0.50
1937	17		4.01	8.24	−.15	2.37	4.90	.50	.36	.48
1936	17		1.40	7.78	.47	1.07	1.67	.12	.11	.48
1935	17		.15	4.46	−1.06	.30	1.65	.27	.37	.48
1934	17		−2.11	2.81	−2.00	−2.20	−2.40	−.04	−.10	.48
1933	17		−2.51	−.17	−2.53	−3.13	−3.73	−.12	−.32	.48
1932	17		−2.90	−3.72	−3.37	−4.00	−4.64	−.13	−.32	.48
1931	16	3	1.51	.39	1.58	.59	−.40	−.20	−.08	.50
1930	16	2	6.13	5.16	4.69	6.09	7.49	.28	.06	.50
1929	17		5.91	9.99	−4.72	.60	5.92	1.06	.46	.48
1929	16	4	3.73	10.13	−9.07	−2.75	3.56	1.26	.78	.50
1928	15	2, 13	1.89	8.59	−1.79	.35	2.49	.43	.58	.51
1927	14	2, 5, 16	1.06	7.46	−.70	.48	1.66	.24	.28	.53
Groups of years:[2]										
1935–37	17		1.85	6.82	−.98	1.10	3.17	.42	.45	.48
1933–34	17		−2.31	1.32	−2.18	−2.68	−3.17	−.10	−.32	.48
1930–32	17		1.89	.56	1.96	1.30	.65	−.13	−.06	.48
1927–29	16	2	3.44	8.79	−3.26	.55	4.37	.76	.69	.50

[1] Five percent point on the assumption of random sampling from an infinite universe.
[2] Average percent changes in net property and average rates of return are on an annual basis.

Sources and methods: See appendix II, sec. C and chs. IX and XI.

During the 1927–29 period, when output was expanding to new high levels, the relation between average profit and property-expansion rates was very marked. In that period almost 50 percent of the variation in property-expansion rates was accounted for by variation in rates of return. In the 1935–37 period, when output was expanding, but not to new high levels except in limited areas, and substantial amounts of funds were drawn from external sources, the relation was not so close and only about 20 percent of the variation in property-expansion rates was accounted for by the variation in rates of return. The tendency for the positive relation to disappear or to become inverse during periods of low activity is shown by the data for the 1930–32 and 1933–34 periods.

Thus, not only the characteristics of the relation between profit and property-expansion rates in the steel industry but also the very existence of a relation has depended upon the underlying conditions. In the following sections the effects of underlying conditions are analyzed.

D. THE RATE OF PROPERTY EXPANSION AT A GIVEN PROFIT RATE

For steel corporations, the rate of property expansion at a given rate of return has been greater, the higher the level of output. This is shown by the data for the individual years 1932 to 1938, and for the groups of years other than the 1930–32 group. In 1932, when output was at an unprecedented low level, the data indicate that corporations with a 10 percent rate of return would have contracted their net property by about 4.5 percent on the average. With the expansion of output between 1932 and 1937, the data indicate that the average rate of property expansion at a 10 percent rate of return would have increased to almost 5 percent in 1937; and with the contraction of output in 1938, the average rate of property expansion would have dropped to less than 1 percent. Similar changes in average expansion rates would have occurred for corporations with a 5 percent and with a zero rate of return as the computations contained in table XXV show.

For the groups of years, the data show that corporations with a 10 percent rate of return would have expanded their net property accounts at an annual rate of 4.4 percent in the 1927–29 period; contracted them at a 3.2 percent rate in the 1933–34 period; and expanded them at a 2.2 percent rate in the 1935–37 period. Of the three periods, 1927–29 had the greatest rate of operations and 1933–34 the lowest. Similar results are shown for corporations with a 5 percent rate of return. At a zero rate of return, however, the data indicate that the rate of contraction would have been greater in the 1927–29 period than in the 1933–34 period. This anomaly in the computations apparently is a reflection of the shift from heavy to light steels which was developing during the period.

The results for the years 1930 and 1931 and for the 1930–32 period indicate property-expansion rates at some rates of return were higher than the corresponding expansion rates for years and periods of greater output. This is, in part, the result of the "carry-over" of expansions from 1929 into 1930 and, in part, the result of the major expansions in 1930 and 1931 which were based upon technological developments. Consequently, the conclusion is that the rate of property expansion at a given rate of return tends to be higher when new technologies are available than at other times.

Thus, in the steel industry, as in the oil industry, the amount of property expansion at a given rate of return has depended largely upon the volume of output relative to capacity and upon the necessities and opportunities for introducing new technologies.[2]

E. DIFFERENCE IN THE RATE OF PROPERTY EXPANSION FOR A GIVEN DIFFERENCE IN THE PROFIT RATE

The amount of difference in property-expansion rates for a given difference in the rate of return has depended largely upon the level of output of the industry. This is shown by a comparison of the results for the 1930–32 and 1933–34 periods with those for the 1935–37 and 1927–29 periods.

During the 1930–32 period output was declining; during the 1933–34 period output was at low levels although expanding. During both these periods, the profit rate had practically no effectiveness with respect to differential expansion or contraction rates. In fact, there appears to have been a slight tendency for the corporations with the greater profit rates to contract their property accounts at greater rates than corporations with the lower profit rates.[3]

During the 1927–29 period, output for the industry as a whole was expanding to new high levels; during the 1935–37 period, output was expanding but new high levels were attained only in certain limited segments of the industry, while the remaining segments were operating at levels substantially below capacity. In the 1927–29 period, the average difference in rates of property expansion per 1 point difference in the rate of return was 0.76 points and in the 1935–37 period it was 0.42 points.

The timing of expenditures within a period of years has depended upon the need for new capacities and upon pressures upon costs. For example, in 1937 and 1929 the need for new capacities was greater than in the immediately preceding years; in those years the average differences in property-expansion rates per 1 point difference in the rate of return were greater than in the immediately preceding years.

Thus, it appears from the data that in the steel industry the level of output relative to capacity has been the major factor determining the effectiveness of the profit rate. The higher the level of output, the greater the effectiveness of that rate. Technology, in periods of high and expanding output, has functioned differently from the way it has functioned in periods of low output. In periods of declining and low output, new technical methods have been introduced regardless of the profit rate but in periods of high or expanding output new technical methods have been introduced to a greater extent by the corporations with the higher profit rates.[4]

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[2] The effects of technology in the steel industry, however, have been quite different from those in the oil industry, largely because of the quality of changes in demand in the steel industry and because of the larger differences in the timing, as between companies, of the introduction of new techniques. In the steel industry the volume of demand for light and special steels developed differently from that for heavy steels, whereas in the oil industry no such marked difference in demand developed as between lines of products. Also, in the steel industry there tended to be large differences in the timing of the introduction of new techniques, whereas in the oil industry technological changes tended to be introduced simultaneously by the various companies.

[3] See footnote, sec. C, supra.

[4] The extent to which this has been so may have been affected by the extent of external financing. The lower effectiveness of the profit rate in 1935–37 than in 1927–29 may be a reflection of this since the amount of external financing was greater during the 1935–37 period than during the 1927–29 period. But the data are not clear on this point.

CHAPTER XIV

RELATION BETWEEN PROFIT AND PROPERTY-EXPANSION RATES: CORPORATIONS IN OTHER INDUSTRIES

Analyses similar to those made for selected steel and oil corporations were undertaken for selected automobile parts and accessories corporations and for selected chemical corporations. However, it was not possible in the time available to complete these latter analyses.

Preliminary results were obtained. They show that the relations between property-expansion rates and rates of return in the chemical and automobile parts and accessories industrial groups have been of the same general nature as those obtained for oil and steel. As in the oil and steel groups, output and technology have been of critical importance in determining (1) the rate of expansion associated with a given rate of return and (2) the average difference in expansion rates for a given difference in the rate of return.

PART V

CONCLUSION

CHAPTER XV

INCOME, CAPITAL, AND INVESTMENT

A. THE FLOW OF FUNDS IN THE ECONOMY

The most important effects of profit income are those with respect to its influence upon the flow of funds. For, the character and the level of output are determined by the way in which funds flow through the economy. Consequently, before proceeding to assess the influence of profits on the national income, it is worth while to call to mind some of the most fundamental aspects of the flow of funds. Chart 20 presents these aspects in simplified diagrammatic form. The diagram is based upon the premises that the level of the national income remains constant over the period covered.

At the left the chart shows the gross national income. The gross national income represents the funds arising from the current gross output of goods and services. The chart then depicts the break-down of the gross national income into the amount set aside for capital replacement and the amount of net national income. The division of the net national income into the various categories of income is also indicated as is the occurrence of transfers of income between individuals and businesses.

The income received by individuals and businesses is either spent for consumption or saved. The savings plus the amounts set aside for capital replacement represent the gross savings out of the gross national income. This carries the economic process through the stage of the division of the gross national income into (a) income used for consumption and (b) income and other funds set aside as gross savings.

The income spent for consumption is converted directly into expenditures for consumption. But gross savings may or may not be converted directly into expenditures from capital. Some of those savings undoubtedly are directly converted and this is indicated by the chart. Large portions of them, however, go into the capital pool to be hoarded, to purchase existing capital, to retire debt, to be loaned, etc.

Within the capital pool, funds are transferred between individuals and businesses in connection with transactions of one kind or another; assets are monetized and demonetized; etc. In the end, a volume of funds emerges from the capital pool as expenditures (1) for consumption, (2) for new capital, and (3) for capital replacement. These expenditures plus the consumption expenditures coming directly from current income equal the new level of the gross national income. The process is then repeated over and over again.

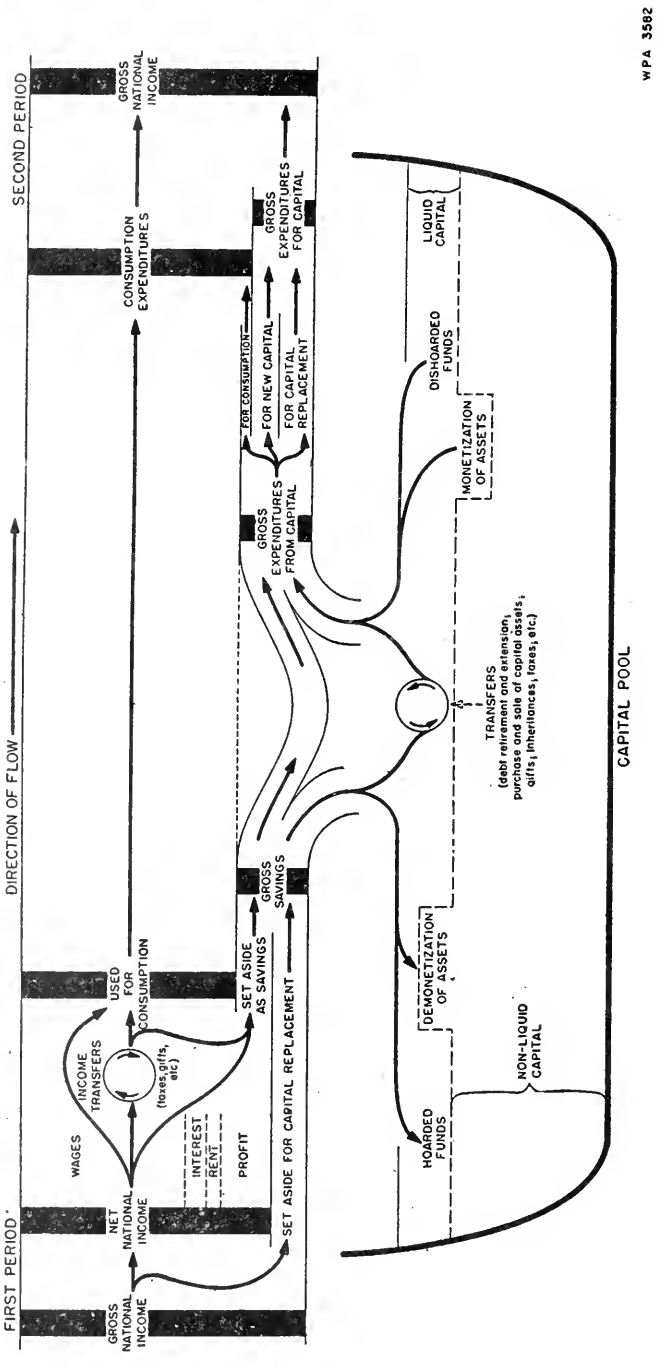
B. MAJOR DETERMINANTS OF THE INCOME LEVEL

Given the amount of gross savings, the new level of the national income is determined by the amount of expenditures from the capital pool. And in determining the (new) national income, the current

Chart 20

SELECTED FEATURES OF THE FLOW OF FUNDS

NATIONAL INCOME THE SAME IN TWO SUCCESSIVE PERIODS



volume of expenditures from the capital pool determines the volume of savings out of that national income, and, hence, the volume of capital expenditures required to expand or to maintain the national income.[1]

It is clear then that the important decisions and actions in the economy relate to the amount of gross savings and to the amount spent from the capital pool. If the expenditures from the capital pool are equal to the gross savings then the national income remains at the same level. This situation is depicted by the chart. If, however, those expenditures are less than gross savings, then the national income must decline; and if greater, then the national income must increase.

C. THE AVAILABILITY OF FUNDS

A decline in the national income cannot result from a shortage of funds in the capital pool. For, gross savings always provide a volume of funds sufficient to finance the capital expenditures necessary to maintain the level of the national income.[2]

Expansion of the national income may be limited by the exhaustion of the possibilities for credit expansion. An expansion of the national income is the result of current expenditures from the capital pool being in excess of the previous volume of gross savings. This excess may come from previously hoarded monetary media or from a monetization of assets. In short, there must be dishoarding or credit creation if the national income is to expand. But dishoarding (in excess of hoarding) can only occur in limited volumes, so that financial barriers to expansion, if they exist at all, result from an inability to monetize a sufficient volume of assets.

The volume of asset monetization was severely limited by the provisions of the National Banking Act prior to the inception of the Federal Reserve System in 1913. This limitation is indicated by the fact that major expansions were halted by financial difficulties such as high commercial interest rates, the exhaustion of bank reserves, and financial panics. And, it may be noted that one of the major movements for economic reform was directed toward increasing the ability of business to monetize its assets.

From the inception of the Federal Reserve System to the period of the banking difficulties, 1931–33, the financial mechanism was such as to permit a much higher level of the national income than was ever attainable before. The amount of funds expended from the capital pool (except during the years 1915 to 1920) was less than could have been expended had full use of the available credit mechanism been made. Thus, expansions during the period were limited by factors other than the availability of funds.

During the period of the banking difficulties, 1931–33, much of the money values of assets which serve as the basis of credit creation were destroyed. However, even during this period, no real limitation was placed upon the expenditures from the capital pool as a result of the destruction of capital values. This is clearly indicated by the fact

[1] See ch. VIII, sec. A for greater detail.
[2] This is an economic tautology since the amount of expenditures from capital required to maintain the national income is equal to gross savings.

that successive amounts of gross expenditures from capital were consistently less than the immediately preceding volumes of gross savings.

Legislation in 1933 and subsequent years, in addition to freeing the frozen funds tied up in financial institutions, provided a mechanism for attaining greater volumes of asset monetization than had ever before been possible.

In brief, expansion has at no time since 1913, been limited by shortages of funds.

CHAPTER XVI

IMPLICATIONS

A. THE IMPORTANCE OF PROFITS

The importance of profits lies in the fact that the recipients of profits play the dominant role in determining the level of the national income. This is a consequence of the facts that (a) the bulk of the savings come from their incomes and (b) the bulk of the capital expenditures come from their current and accumulated savings. Thus, they stand at the two critical points in the flow of income.

In most years, particularly in years of high activity, profits account for a disproportionately large share of net savings. In addition, the recipients of profits own or control the bulk of the accumulated capital as well as the major share of the funds currently set aside for capital replacement—depreciation, depletion, and amortization. Consequently, the bulk of investment funds whether from current income, from funds set aside for capital replacement, or from accumulated capital constitute a single pool owned or controlled by the recipients of profit income. And, since the level of national income depends upon the volume of expenditures from the capital pool, that level is largely dependent upon what the recipients of profit income do, not only with their profit income, but also with their accumulated capital and other income.

What, then, deters the recipients of profit income from always expending from the capital pool in their control a volume of funds sufficient to expand or to maintain the national income?

The findings of this study show that the answer to this question lies neither in the amount of profit income nor in the rate of return on capital. Factors other than the amount or the rate of profit have been the major determinants of the level of capital expenditures of groups of companies in the same industry, and, hence, of business as a whole. Of these other factors, the most important have been the level of output and the pressure upon business for the introduction of available new technologies.

Hence the fundamental question can be rephrased to read: What has restricted the volume of output and the rate of technological advance so that all too frequently they have been inadequate to draw forth the volume of capital expenditures required to expand or to maintain the national income?

B. THE IMPORTANCE OF THE CONCENTRATION OF WEALTH AND INCOME

Concentration of income and wealth is the most important single factor leading to a volume of capital expenditures inadequate for the maintenance and expansion of the national income. The importance of concentration lies not in the fact that it leads to a high rate of

savings. For a high rate of savings, in itself, is no barrier to a sustained high national income. Rather the importance of concentration lies in the fact that savings are made by individuals and groups who do not or will not themselves consume the output of the capital goods which their savings can create.

Recipients of high incomes consume only a part of the current income accruing to them. The remainder, which is the larger part of their income, is saved (either in the form of retained profits or in the form of personal savings). They use their savings only in part for capital expenditures destined to increase their own level of consumption. Consequently, if a decline in national income is not to occur, the remainder of their savings must be spent as capital expenditures destined either (1) to increase the consumption level of others or (2) to take business away from existing facilities. The following sections are directed toward answering the question: What prevents current and accumulated savings from being used in these ways?

C. CONCENTRATION AND SHORTAGES OF CONSUMER PURCHASING POWER

Concentration of income and of wealth leads to a considerable volume of savings accumulating in the hands of individuals who must invest the larger part of their savings in capital facilities to be used not to increase their own consumption but rather to increase the consumption level of others. In order that their savings should be translated into capital expenditures of the required kind, it is necessary that those "others"—that is, consumers generally—obtain incomes sufficient to purchase the output of the new facilities. For capital expenditures are not continuously made for the expansion of capacities unless the output of the already existing facilities can be sold.

A constant volume of capital expenditures cannot provide consumers with a volume of the means of payment sufficient to purchase the expanding output of an expanding capital plant. For, the capital expenditures made, even at a relatively low level of national income, create additional productive capacity in the economy. Yet, whereas they increase productive capacity, they do not automatically provide for an increase in the means of payment to the consumers of the product. The consequence of this is that the level of the national income declines unless (1) means of payment from sources other than the production of capital goods accrue to consumers or (2) prices decline so that the means of payment derived from total current production are sufficient to pay for an increased output. While both these necessary developments have occurred at times in the past, they have not been of sufficient magnitude to prevent declines in the national income. Rather, the typical development has been a decline in the rate of capacity operations or an accumulation of inventories or both. But, as has been shown, a decline in the rate of capacity operations leads to a curtailment of capital expenditures. The effect of inventory accumulations, of course, is only to delay temporarily the decline in the rate of capacity operations. Thus, sooner or later a constant volume of capital expenditures proves inadequate to sustain itself and hence inadequate to sustain the national income.

The import of this—in view of the failure of adequate price declines to occur when new capacities are placed in operation—is that the volume of capital expenditures must increase if the national income is

not to decline. It is by increasing the volume of capital expenditures that the necessary increase in means of payment can be provided to consumers. And increasing the volume of capital expenditures, as was pointed out, results, of course, in a rising national income.

The important point, however, is that, under the existing pattern of income and wealth distribution, the national income must rise at a fairly rapid rate or decline. There are no intermediate positions. It is not possible to determine by how much capital expenditures must be increased in order that declines in the national income be avoided. Under conditions such as those of the past few decades, the required rate of increase would have to be large. That this is so may be seen from the fact that gross business capital formation (excluding inventories) increased from $5,700,000,000 in 1922 to $10,000,000,000 in 1929, and from $3,500,000,000 in 1934 to $7,500,000,000 in 1937.[1] The important point, however, is that, under the existing pattern of income and wealth distribution, the national income must rise at a fairly rapid rate or decline. There are no intermediate positions.

The rate of increase in capital expenditures required to prevent declines in activity may, of course, be lowered by downward price movements at the same time that capital expenditures are increased. But in past periods of expanding activity prices have usually increased, and this has operated to raise the rate of increase in capital expenditures required to prevent declines in the national income. Consequently, it has only been during periods in which very unusual factors have been operative that the national income has ever attained high levels.[2]

Favorable foreign trade balances, domestic production of gold (and other monetary metals), Government investment, and capital gains are factors which may lower the volume of capital expenditures required to prevent declines in activity.

Of these, capital gains are least important and are hardly independent factors. Only capital gains which represent a transfer of funds from individuals considering them to be capital accumulated in the past to individuals considering them to be current income have the effect of lowering the volume of capital expenditures required to prevent declines in activity. Such capital gains operate to increase the volume of consumption expenditures but do not raise the productive capacity of the economy. However, under conditions of concentrated ownership of wealth, the volume of capital gains flowing into consumption channels tends to be small since most of the gains are received by the recipients of high incomes. And, in any case, capital gains are in the nature of secondary effects which arise only when consumer purchasing power is already adequate for an expansion of the national income.

The most important effect of domestic gold production of monetary metals and of favorable foreign trade balances is to provide a form of capital accumulation which does not raise the productive capacity of the domestic economy. Government investment, while it raises the productive capacity of the domestic economy, requires little or no increase in consumer purchasing power in order that the increases in

[1] Investigation of Concentration of Economic Power, Hearings before the Temporary National Economic Committee, 76th Cong., 1st sess., Part 9, exhibit 575, p. 4036. (Estimates prepared by G. A. Terborgh, of the Federal Reserve Board.)

[2] See ch. II, sec. B.

capacity shall be utilized. For these reasons, whenever serious declines in domestic activity have taken place, measures have been taken to increase either (1) the domestic output of monetary metals, (2) exports, or (3) the volume of Government spending or investment.

Finally, it may be noted that increases in the rate of capital expenditures require—sooner or later—increases in the volume of debt outstanding. This follows from the necessity of monetizing assets in order to raise the volume of capital expenditures. And because of this it is necessary to have a financial mechanism capable of creating large volumes of credit in order that expansions may not end in financial panics. As has already been indicated [3] such a mechanism exists largely as a result of the Federal Reserve Act of 1913 and of the banking and monetary legislation of 1933 and subsequent years.

It appears from this analysis that expansions which do get started under the present pattern of income distribution, savings habits, and investment conditions must sooner or later come to a halt. For, under such circumstances, expansion rests upon adequate markets for an ever increasing output of expanding capital facilities. And past experience indicates that the rate of capital accumulation has always outstripped the rate of increase of consumer purchasing power. During the course of expansion the increments of consumer purchasing power seem to become smaller and smaller relative to the increments of capital facilities. In the end, a situation has always been reached in which the output of existing plant cannot be sold. When this takes place, investment is reduced; the inevitable consequence is, of course, a reduction of consumer purchasing power with the result that expansion turns into decline.

Whether, under the present circumstances, even the attainment of a full use of resources will occur before expansion ends depends upon such special factors as large favorable foreign trade balances and large increases in the domestic production of monetary metals. Full use of resources—or even a reasonably close approximation—has never been attained in the absence of such special factors or of an adequate compensatory program. Thus, it appears that so long as a high degree of concentration of income and wealth exists, a full use of resources may not be attained let alone maintained for any long period.

D. FURTHER EFFECTS OF CONCENTRATION

1. A little recognized result of a completed growth in concentration is that the volume of losses sustained by groups without profits against which to offset them becomes lower than it was before the inception of the growth in concentration. The consequence of this is that the volume of capital expenditures required to prevent declines in the national income becomes greater than it was before. For, the volume of savings is less when losses and profits accrue to different groups

[3] Ch. XV, sec. C.

than when they accrue to the same groups, even though profits net of losses are the same in both instances.[4]

A temporary effect of a growth in concentration is to reduce the volume of capital expenditures required to prevent declines in the national income. When concentration is going on, the losses of those whose wealth is decreasing partially offset the effects of a high rate of savings by those individuals and businesses increasing their proportion of the wealth. Furthermore, during the process of concentration there is a tendency for the volume of losses to increase at the same time that the volume of profits is increasing.[5] But after the "losers" are eliminated (or absorbed by) the "profit makers," there are no offsets to the savings of the "profit makers" in the form of the losses of the "losers." And the full effects of concentration upon consumption and capital expenditures set forth in the preceding section are realized.

2. Not only does an increase in concentration raise the volume of capital expenditures required to prevent declines in activity, but it also lowers the outlets for such expenditures. This latter is a consequence of the fact that concentration limits the extent to which capital expenditures can or will be made for capital goods to take business away from existing facilities.

Under conditions in which ownership and control over particular kinds of capacities and control over prices are diffuse, individuals and businesses can make capital expenditures without regard to the losses which such expenditures may cause to others. But under conditions of monopoly or of concentrated ownership or control, capital expenditures are made with regard to the fact that any losses they may engender will fall largely or wholly upon the business making those expenditures. Thus, additions to capacities, technologically the same as existing capacities, are made under conditions of monopoly or of concentrated ownership or control only when new capacities are

[4] That a decrease in the volume of losses by groups without profit offsets does entail an increase in the volume of capital expenditures required to prevent declines in the national income may best be seen in terms of a hypothetical illustration based upon corporate profit data for 1928 and 1929.

Suppose that profits total $10,000,000,000 and losses $2,000,000,000 so that net profits are $8,000,000,000 and that net savings from profits are $4,000,000,000. Then the results are as follows:

	Net profits	Net savings	
		Amount	Percent of net profits
Corporations with profits	$10,000,000,000	$6,000,000,000	60
Corporations with losses	−2,000,000,000	−2,000,000,000	100
Total	8,000,000,000	4,000,000,000	50

Under these conditions, capital expenditures of $4,000,000,000 are required to absorb the savings out of profits.

Now suppose there was an increase in concentration so that loss and profit corporations were combined in such a way that no corporation reported a loss and that total profits remained at $8,000,000,000. The proportion saved out of this $8,000,000,000 would tend to be less than the 60 percent saved from the $10,000,000,000. Suppose, therefore, that 55 percent were saved. Savings out of profits would then be $4,400,000,000 with no offsets from losses, so that the capital expenditures required to absorb net savings out of profits would be $4,400,000,000 or 10 percent in excess of the $4,000,000,000 under the first set of conditions. (It may also be noted that under the existing tax structure a smaller volume of taxes would have to be paid.)

Thus, even though the total profit income net of losses remains the same, the volume of capital expenditures required to prevent declines in the national income is greater, the greater the volume of losses. And, if the total profit income is raised by the increase in concentration, as it tends to be, then the volume of capital expenditures required is even greater.

[5] The data in appendix table XXV should be studied in this connection.

needed to meet an expanded industry demand, whereas under diffuse ownership and control additions are made for the purpose of obtaining a larger share of the existing volume of business.

The effects of concentration upon the rate of introduction of new technologies are of the same character. Under conditions of concentrated ownership or control, profits on the new capital goods are balanced against losses from the premature retirement of old capital goods, whereas under conditions of diffuse ownership and control they are not so balanced. The net effect is that under concentrated ownership or control new technologies are introduced only (1) when capacity replacements or new capacities are needed and (2) when the profits on the technologically new capital goods are large enough to pay for the money still sunk in the existing capital goods.

APPENDIX I

NOTES ON DATA AND METHODS FOR PARTS I AND II

A. DOLLAR PROFITS OF THE CORPORATE SYSTEM

Except as otherwise noted, all figures are from United States Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes.

1. *Compiled net profit before intercorporate dividends.*—1918–21 and 1909–12 figures are the sum of intercorporate dividends (see 2, infra) and net profit after intercorporate dividends.

1916 and 1917 figures are statutory net income (which included intercorporate dividends) with the following adjustments:

	Tax-exempt interest	Special insurance deductions
1917	$125,000,000	−$142,000,000
1916	100,000,000	−129,000,000

These are estimates from Ebersole, J. Franklin, Susan S. Burr, and George M. Peterson, "Income Forecasting by the Use of Statistics of Income Data," Review of Economic Statistics, vol. 11, (1929) pages 180–181.

1913–15 figures were obtained by multiplying statutory net income (which included dividends) of corporations with net income by the following factors: 1915, 0.85; 1914, 0.70; 1913, 0.80.

2. *Intercorporate dividends.*—1916–17 figures are estimates of Ebersole, Burr and Peterson, op. cit.

1909–15 figures are based upon the index of dividend payments of the National Industrial Conference Board in National Income in the United States *1799–1938*, 1939, page 23.

3. *Net profit after intercorporate dividends.*—1918–21 figures are statutory net income (which excluded intercorporate dividends) with the following adjustments in millions of dollars:

	Tax-exempt interest	Personal service corporations	Special insurance deductions		Tax-exempt interest	Personal service corporations	Special insurance deductions
1921	189	[1] 79	----	1918	146	50	[1] −156
1920	220	[1] 96	[1] −221	1917	[1] 125	----	[1] −142
1919	179	[1] 75	[1] −188	1916	[1] 100	----	[1] −129

[1] Ebersole, Burr and Peterson, op. cit.

1913–17 figures are compiled net profit less intercorporate dividends.

1909–12: Statutory net income of corporations with net income in excess of $5,000 exemption, plus $2,880 times the number of such corporations; all multiplied by the following factors: 1912, 0.80; 1911,

0.70; 1910, 0.75; 1909, 0.70. The $2,880 figure is based upon the estimates (*a*) that the average net income of corporations with less than $5,000 was $1,600 and (*b*) that the number of such corporations was 1.8 times the number reporting more than $5,000 of net income.

4. *Federal income and profits taxes.*—Figures for 1916 and later years are amounts reported on income tax returns; for 1909–15 they are receipts for fiscal year ended June 30, immediately following, which include fines, penalties, additional assessements, etc.

5. *Shortages in tabulation: 1917 and 1919.*—Ebersole, Burr, and Peterson, op. cit. estimate shortages in tabulation as follows:

	1919	1917
Net income	$842, 000, 000	$505, 000, 000
Federal taxes	218, 000, 000	107, 000, 000

If these adjustments are applied the figures in the tables would be:

	1919	1917
Compiled net profit	$9, 700, 000, 000	$10, 589, 000, 000
Dividends received	413, 000, 000	600, 000, 000
Net profit after dividends	9, 287, 000, 000	9, 989, 000 000
Federal taxes	2, 393, 000, 000	2, 249, 000, 000
Net profits after dividends and taxes	6, 894, 000, 000	7, 740, 000, 000

6. *Net dividend outgo.*—1922–37: Total cash dividend disbursements less dividends received by corporations. The figures, therefore, include disbursements to corporations not covered by Federal tax returns.

Data for the years prior to 1928 do not include dividends paid by capital stock life insurance companies.

1916–21: Ebersole, Burr, and Peterson, op. cit., pp. 180–181.

1909–15: National Industrial Conference Board, National Income in the United States 1799–1938, 1939, p. 21.

B. NET WORTH OF CORPORATIONS

Estimates of net worth comparable to the estimates of net profit before intercorporate dividends are desired. Such estimates are not the same as the net equity capital, i. e., the equity capital of individuals, in the corporate system. They include, in varying degrees, the intercorporate ownership of equity capital.

While it is possible to obtain the net profits accruing to individuals, it is not possible to estimate the corresponding equity of individuals. Hence, to obtain rates of return it is necessary to deal with figures which include intercorporate profits and ownership.

Except as otherwise noted, all figures are from United States Bureau of Internal Revenue, Statistics of Income, annual volumes.

1926–37—Capital account items (preferred and common stock, surplus and undivided profits, deficit, and, for 1937, capital reserves) for corporations submitting balance sheets were raised to represent all corporations. The adjustments were carried through separately with net income and with no net income corporations. The factors are given below, together with the computed correction for all corporations.

	With net income	With no net income	All corporations (computed)		With net income	With no net income	All corporations (computed)
1937	1.0256	1.1058	1.0419	1931	1.0237	1.0780	1.0550
1936	1.0404	1.1301	1.0591	1930	1.0170	1.0627	1.0320
1935	1.0204	1.1768	1.0910	1929	1.0160	1.0727	1.0264
1934	1.0190	1.0735	1.0463	1928	1.0160	1.0797	1.0270
1933	1.0173	1.0847	1.0561	1927	1.0150	1.0512	1.0228
1932	1.0152	1.0580	1.0442	1926	1.0170	1.0525	1.0237

For 1931–37, the factors are the ratios of compiled net profit (or compiled deficit) of all corporations to the corresponding compiled net profit (or compiled deficit) of corporations submitting balance sheets. For 1926–30, the factors were obtained as follows:

For corporations with net income, the correction factor was read from a chart with compiled net profit ratios for 1931–33 plotted against the corresponding number of corporations ratios.

For corporations with no net income, the ratio of the number of corporations not submitting balance sheets to the number submitting balance sheets was multiplied by 0.422 and added to unity. The 0.422 figure is based upon the 1931–33 relation between the ratio derived from net deficits and the corresponding ratio derived from the number of corporations. For 1926, the number of corporations with no net income was estimated by subtracting 10 percent of all corporations from the total of inactive corporations and corporations with no statutory net income.

1922 and 1925.—To obtain an estimate for 1922, the 1921 figure was computed forward and the 1923 figure backward by adjusting for retained profits and stock issues. The two estimates were then averaged to give the final 1922 estimate. The same procedure was used to obtain the 1925 estimate. Computations are shown in appendix table I.

APPENDIX TABLE I.—*Computation of 1922 and 1925 net worth of corporations*

[Money figures in millions]

	1922	1925
(1) Net worth preceding year	$98,430	$113,553
(2) Reinvested earnings current year	1,746	2,957
(3) Stock issues current year [1]	620	1,247
(4) First estimate of net worth current year: (1)+(2)+(3)	100,796	117,757
(5) Net worth following year	103,907	122,088
(6) Reinvested earnings following year	2,528	2,335
(7) Stock issues following year [1]	736	1,220
(8) Second estimate of net worth current year: (5)−(6)−(7)	100,643	118,533
(9) Final net worth estimate current year: ½(4)+½(8)	100,720	118,146

[1] See sec. C, infra.

1920, 1921, 1923, and 1924.—Figures are from the capital stock tax returns for the years 1922, 1923, 1925, and 1926, as respectively reported in the 1920, 1922, 1924, and 1925 volumes of the Statistics of Income. Reports for the first two, however, required balance sheets as of June 30, 1921, and June 30, 1922, or an earlier date not before the preceding July 1; for the latter two the reporting dates were June 30, 1924, and June 30, 1925, or an earlier date not before the preceding December 31. Consequently, there is little indication of the appropriate date—December 31 or the following June 30—to be applied to

the figures. In view of (1) the fact that reports had to be made during July and (2) the relative smallness of adjustments, the preceding December 31 date was used.

For the two later years, surplus (including book value of no-par stock) and deficit items were reported. For the other years only par value stock was reported. These were multiplied by 1.4535, the average of the ratios of total stock, surplus and deficit to par value stock, for the 2 later years.

Since the figures are on an unconsolidated basis, while the income tax data for the corresponding year are on a consolidated basis, some downward adjustment is necessary. A precise basis for the adjustment is not available. Judging from the 1933 and 1934 returns a considerable reduction is necessary—roughly about 10 percent. However, intercorporate ownership was not as marked in the early twenties as in later years. In order to provide a better approximation to book value net worth than that given by the reported figures 5 percent was deducted as a rough allowance for the difference between consolidated and unconsolidated reporting.

Computations are shown in appendix table II.

APPENDIX TABLE II.—*Computation of 1920, 1921, 1923, and 1924 net worths of corporations*

	1920	1921	1923	1924
Capital stock tax returns for	1922	1923	1925	1926
Balance sheets as of June 30	1921	1922	1924	1925
Or a date not earlier than	July 1, 1920	July 1, 1921	Dec. 31, 1923	Dec. 31, 1924
(1) Total par value stock plus surplus less deficit.			$109,376	$119,529.
(2) Par value stock	$70,230	$71,284	$76,331	$81,090.
(3) Surplus less deficit			$33,045	$38,439.
(4) Ratio: (1)÷(2)	1.4535 [1]	1.4535 [1]	1.4329	1.4740.
(5) Estimated net worth: Unconsolidated (2)×(4).	$102,079	$103,611	$109,376	$119,529.
(6) Estimated net worth: Consolidated (5)×0.95.	$96,975	$98,430	$103,907	$113,553.

[1] Average of figures in last 2 columns.

1918–19.—"Invested capital" as defined by the Bureau of Internal Revenue for excess profits tax computations was based upon the beginning of year book value of (*a*) cash paid in for capital stock, (*b*) actual cash value of property, including intangibles, paid in for capital stock, with certain limitations upon the amount of intangibles, and (*c*) paid-up or earned surplus, including undivided profits. Three types of adjustments were then applied to the total of these items.

1. Adjustments were made for differences between book value and the valuation prescribed by law or by regulations of the Bureau of Internal Revenue. (Examples are differences between depreciation carried on the books and depreciation allowed for tax purposes and differences between par value of stock given in exchange for property and actual value of the property.)

2. Changes in invested capital resulting from issue or retirement of stock, payment of Federal income and profits taxes for previous years, and dividends out of profits of prior years were taken into account after reduction to an average for the year.

3. Stocks, bonds, and other obligations, except obligations of the United States, the income from which is not taxable were excluded from total assets. Net worth after all other adjustments was reduced by a proportionate amount.

There appears to be no way to reconstruct the published figures to obtain the book values of net worth reported but not tabulated. Approximate adjustments could be made for dividends, taxes, and new stock issues, (i. e., partially offsetting adjustments), but no basis exists for other types. In view of this it is believed most desirable to use the figures as adjusted for coverage alone.

Two adjustments for coverage were made. The reported figure for invested capital was first multiplied by the ratio or net income of all corporations with net income to the net income of corporations reporting invested capital. This estimate for corporations with net income was then multiplied by the ratio of total gross income to the gross income of corporations with net income to give the estimate for all corporations.

Computations are shown in appendix table III.

APPENDIX TABLE III.—*Computation of 1919 and 1920 net worth of corporations*

[Money figures in millions]

	1918	1919
Taxable year	1919	1920
Reporting invested capital:		
(1) Number	192,037	187,833
(2) Invested capital	$66,130	$68,427
(3) Net income	$9,396	$7,718
All corporations:		
(4) Number (including inactive)	320,198	345,595
(5) Gross income	$99,919	$118,206
All corporations with net income:		
(6) Number	209,534	203,233
(7) Net income	$9,411	$7,903
(8) Gross income	$88,261	$93,824
All corporations with no net income:		
(9) Number (including inactive)	110,561	142,362
(10) Net deficit	$996	$2,029
(11) Gross income	$11,658	$24,381
Adjustment factors:		
(12) Ratio: (7)+(3)	1.0113	1.0240
(13) Ratio: (5)+(8)	1.1321	1.2599
Invested capital, adjusted:		
(14) Corporations with net income (2)×(12)	$66,877	$70,069
(15) All corporations (14)×(13)	$75,711	$88,280

1909–13.—Corporations were asked to report the "total amount of paid-up stock outstanding at close of year" and the heading "Capital Stock" was used to describe the tabulated figures in the Annual Report of the Commissioner of Internal Revenue for fiscal year ended June 30 immediately following the year shown. Reports were on an unconsolidated basis. Furthermore, the Annual Reports for 1911 and 1912 mention the incompleteness of the returns, although for 1912 the Annual Report says there were not more than 5,000 delinquent returns, and the 1914 Annual Report states that the income tax law has a broader coverage than the predecessor excise tax law.

No precise definition can, therefore, be given to the figures. The major question resolves around the inclusion or exclusion of the surplus, capital reserve, and undivided profits items. In view of the limitation on the deduction of interest payments in terms of capital stock,

there is a presumption (*a*) that capital deficits would not be deducted from the capital stock item and (*b*) that earned surplus, at least, would be included.

It is believed that the figures provide an indication of the order of magnitude of the book value of corporate net worth for 1909–13. They should not be used as precise measurements.

C. STOCK ISSUES

1919–38.—Figures are those compiled by the Commercial and Financial Chronicle; they were taken from United States Department of Commerce, Survey of Current Business.

"Included * * * are all capital issues which are publicly listed for sale * * *. Securities sold at private sale are included when the compilers are aware of such a sale. Domestic issues"—the ones used in this report—"include securities sold by all companies incorporated in the United States, regardless of where the funds may be spent" (Survey of Current Business, February 1938, p. 21, note). Refunding stock issues cover issues replacing stocks as well as other forms of securities.

1909–18.—Figures are those compiled by the New York Journal of Commerce; they were taken from United States Department of Commerce, Statistical Abstract of the United States, 1930.

Both new and refunding issues are included at offering prices. Real estate offerings, privileged stock subscriptions and issues of less than $100,000 are excluded; foreign issues are included.

General.—No adjustments were made for privately sold or other types of issues excluded from or included in the figures since there appears to be no adequate basis for doing so. The bearing of the incomplete coverage upon particular points is discussed in the text.

Appendix table IV shows the total stock issue figures used in computations.

APPENDIX TABLE IV.—*Total new and refunding stock issues, 1909–38*

[Millions of dollars]

Year	Total	New	Refunding	Year	Total	New	Refunding
1939	------	------	------	1923	736	659	77
1938	96	65	31	1922	620	570	50
1937	760	408	352	1921	275	265	10
1936	553	352	200	1920	1,038	1,002	36
1935	151	69	81	1919	1,547	1,436	110
1934	35	35	------	1918	298	------	------
1933	153	120	32	1917	455	------	------
1932	24	20	4	1916	782	------	------
1931	343	311	32	1915	325	------	------
1930	1,527	1,503	23	1914	262	------	------
1929	6,757	5,924	833	1913	452	------	------
1928	3,491	2,961	530	1912	904	------	------
1927	1,738	1,474	264	1911	352	------	------
1926	1,220	1,087	133	1910	405	------	------
1925	1,247	1,153	94	1909	611	------	------
1924	866	829	36				

Sources: See appendix I, section C.

D. INCOME PRODUCED BY THE CORPORATE SYSTEM

1. *Underlying national income estimates.*—1929–38: United States Department of Commerce figures for national income produced.

1919–28: National Bureau of Economic Research (Kuznets) series for income produced as adjusted by the United States Department of Commerce. The Department of Commerce first adjusted the N. B. E. R. series for comparability and then shifted them to the level of the Department of Commerce series. Each industrial division was adjusted separately, the shift in level being based upon the 1929 relations between the two sets of figures.

1909–18: The Brookings Institution (Leven, Moulton, and Warburton, America's Capacity to Consume, 1934, pp. 152–153) revisions of estimates of realized income or income paid out by King, Willford I. (The National Income and Its Purchasing Power, National Bureau of Economic Research, Inc., 1930) as adjusted by the United States Department of Commerce. The adjustments consisted of splicing the Brookings series separately by industrial divisions to income paid out series comparable to the adjusted N. B. E. R. series for income produced previously mentioned on the basis of the 1919–21 relations.

2. *Income produced by corporations.*—The United States Department of Commerce provided the estimates shown in appendix table V for the amount of income produced by private corporate enterprise in 1929.

APPENDIX TABLE V.—*Estimates of total and corporate income produced, by industrial divisions, 1929*

[Money figures in billions of dollars]

Industry	Total	Corporate	
		Amount	Percent
Total	82.7	48.3	58.4
Agriculture	7.3	(1)	(1)
Mining	1.8	1.6	89.0
Manufacturing	20.3	19.4	95.6
Contract construction	3.7	3.1	84.0
Transportation and public utilities	9.4	8.8	93.6
Transportation	7.1	6.5	91.5
Electric light and power and manufactured gas	1.3	1.3	100.0
Communication	1.0	1.0	100.0
Trade	11.3	6.2	55.0
Finance	8.8	3.9	44.0
Government	6.3		
Service and miscellaneous	13.8	5.3	38.0
Service	9.8	3.0	31.0
Miscellaneous	4.0	2.3	57.0

[1] Negligible.

These percentages were applied to the total national income produced by industrial divisions to obtain the estimates of corporate income produced. For 1934–38, 82 percent of the social security contributions of employers was included—the estimate of the Department of Commerce for 1938. Since the 1909–18 figures for national income were for income paid out, retained profits of corporations were added after the application of the percentages given in appendix table V. Retained profits were derived from data described in section A, supra.

Appendix table VI provides a comparison between all income produced by private enterprise and income produced by the corporate system.

APPENDIX TABLE VI.—*Estimates of income produced by all private enterprise and by the corporate system, 1909-38*

[Money figures in millions of dollars]

Year	Total	Corporate		Year	Total	Corporate	
		Amount	Percent			Amount	Percent
1938	54,147	33,057	61.05	1923	64,252	41,111	63.98
1937	62,720	39,456	62.91	1922	54,729	34,242	62.57
1936	55,779	34,590	62.01	1921	46,515	28,039	60.28
1935	47,875	29,186	60.96	1920	64,694	40,915	63.24
1934	43,008	26,146	60.79	1919	63,929	38,042	59.51
1933	35,940	21,822	60.72	1918	49,775	29,448	59.16
1932	33,740	20,230	59.96	1917	44,668	26,035	58.29
1931	47,797	29,434	61.58	1916	38,136	22,717	59.57
1930	62,670	39,054	62.31	1915	32,608	18,856	57.83
1929	76,374	48,350	63.31	1914	31,323	18,208	58.13
1928	73,041	45,735	62.62	1913	31,550	18,614	59.00
1927	69,298	43,328	62.52	1912	30,050	17,578	58.50
1926	70,712	44,522	62.96	1911	28,173	16,487	58.52
1925	68,709	42,838	62.35	1910	27,800	16,050	57.73
1924	63,921	39,715	62.13	1909	26,254	15,006	57.16

Sources and methods: See appendix I, section D. Figures for 1909–18 are for income paid out and are not strictly comparable to those for the later years.

3. *General.*—The Department of Commerce also provided estimates of corporate income produced in 1938. The total was $33,000,000,000 compared with the $33,057,000,000 obtained by the application of the 1929 percentages for industrial divisions.

An increase of about $6,500,000,000 in corporate income produced between 1918 and 1919 is shown by the estimates. (Even though the splicing were on the basis of 1919 rather than 1919–21 the difference would be only $1,000,000,000 less.) This appears large in view of the changes in production and prices between the 2 years. While the production and price series may not adequately reflect changes in income produced, the more likely possibility is some defect in the underlying income figures. The Brookings-King estimates show an increase of $5,000,000,000 in income paid out while retained corporate profits alone increased almost $2,000,000,000.

The element of inconsistency in the 1918–19 change indicates that year-to-year changes are probably not very reliable for the earlier years covered, although the broad sweep is believed to be valid.

Undoubtedly, there have been changes in the proportion of income produced by corporations in the various industrial divisions, particularly between the pre-war and post-war periods. No measurements are available for gaging the extent of this. Changes of most importance would be in the trade and service fields. However, even though the estimated corporate shares in these fields were cut in half for 1913, for example, corporate income produced would be reduced by about 10 percent, hardly enough to affect the broad sweep of the figures.

Aside from the trade and service areas the major contributions to the corporate income produced are from manufacturing, transportation, public utilities, and finance. The scope of corporate enterprise in these fields can hardly be held to have changed materially enough to invalidate the estimates.

Finally, it should be remembered that the inconsistency in the 1918–19 change indicates that for the 1909–18 period the figures are generally too low compared with the later years. This tends to offset any error introduced by the overestimate of the corporate share for those years.

4. *Treatment of taxes.*—In the text of chapter IV, it was pointed out that the income produced estimates excluded all taxes. Appendix table VII shows computations similar to those given in table IV based upon corporate income produced figures which include Federal income and profits taxes.

APPENDIX TABLE VII.—*Income produced by and net profit of the corporate system, 1909–37, with Federal income and profits taxes included in income produced*

[Money figures in millions of dollars]

Year	Income produced by the corporate system [1]	Net profit of corporate system			Net profit as percent of income produced		
		Before Federal taxes	Federal income and profits taxes	After Federal taxes	Before Federal taxes	Federal income and profits taxes	After Federal taxes
1937	40,732	5,148	1,276	3,872	12.64	3.13	9.51
1936	35,781	5,094	1,191	3,903	14.24	3.33	10.91
1935	29,921	2,409	735	1,674	8.05	2.46	5.59
1934	26,742	753	596	157	2.82	2.23	.59
1933	22,245	−1,956	423	−2,379	−8.79	1.90	−10.69
1932	20,516	−5,089	286	−5,375	−24.81	1.39	−26.20
1931	29,833	−2,746	399	−3,145	−9.21	1.34	−10.54
1930	39,766	2,078	712	1,366	5.23	1.79	3.44
1929	49,513	9,277	1,193	8,084	18.73	2.41	16.32
1928	46,919	8,750	1,184	7,566	18.65	2.52	16.13
1927	44,459	7,011	1,131	5,880	15.77	2.54	13.23
1926	45,752	8,004	1,230	6,774	17.49	2.69	14.81
1925	44,008	8,141	1,170	6,971	18.50	2.66	15.84
1924	40,597	5,880	882	4,998	14.49	2.17	12.31
1923	42,048	6,764	937	5,827	16.09	2.23	13.86
1922	35,026	5,164	784	4,380	14.74	2.24	12.50
1921	28,741	726	702	24	2.53	2.44	.09
1920	42,540	5,968	1,625	4,343	14.03	3.82	10.21
1919	40,217	8,482	2,175	6,307	21.09	5.41	15.68
1918	34,540	7,712	3,159	4,553	22.33	9.15	13.18
1917	32,494	9,484	2,142	7,342	29.19	6.59	22.59
1916	27,797	7,580	172	7,408	27.27	.62	26.65
1915	20,941	4,140	57	4,083	19.77	.27	19.50
1914	18,590	2,410	39	2,371	12.96	.21	12.75
1913	19,837	3,390	43	3,347	17.09	.22	16.87
1912	19,088	3,460	35	3,425	18.13	.18	17.94
1911	17,181	2,560	29	2,531	14.90	.17	14.73
1910	17,162	2,940	34	2,906	17.13	.20	16.93
1909	16,059	2,620	21	2,599	16.31	.13	16.18

[1] Including Federal income and profits taxes, but excluding other taxes.

Sources and methods: See appendix I. sees. A and D.

E. DIVIDEND RECEIPTS REPORTED BY INCOME TAXPAYERS

"Beginning 1936, amount includes dividends on stock of both domestic and foreign corporations, excepting dividends received by partnerships and fiduciaries. Prior to 1936, amount includes dividends on stock of domestic corporations subject to taxation under title I of the effective revenue laws, and until 1934, the dividends received on stock of foreign corporations deriving more than half their gross income from sources within the United States, whether or not received direct or by partnership and fiduciaries; also dividends

received through personal service corporations, 1918 through 1921; and stock dividends, 1916 through 1919." (U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1937, pt. I, p. 46, note 10.)

It is believed that the variations in coverage with regard to dividends from foreign corporations, dividends received through personal service corporations, and stock dividends have been relatively minor factors affecting the variations in the ratio of dividend receipts reported by income taxpayers to the net dividend outgo of the corporate system from year to year.

Changes in the requirements for filing tax returns have seriously affected the percentages which reported dividend receipts have been of the net dividend outgo. In general, the lower the net income for which individuals (and fiduciaries) must file returns relative to the national income, the greater the number of tax returns and hence the greater the volume of dividend receipts reported by income taxpayers. The basic net income levels at which individuals (and fiduciaries) have been required to file returns are shown in appendix table VIII, together with estimates of the income paid out to individuals and with the percentages the dividend receipts reported by income taxpayers have been of the net dividend outgo of the corporate system. For a summary of the provisions of the various revenue acts with regard to requirements for filing returns see Statistics of Income for 1937, part I, pages 188–191.

APPENDIX TABLE VIII.—*Individuals required to file Federal income tax returns, dividend receipts reported by income taxpayers, and national income paid out to all individuals, 1916–37*

Year	Dividend receipts reported by income taxpayers (percent of net dividend outgo of the corporate system)	Individuals required to file returns		Aggregate income payments to individuals including entrepreneurial income	National income paid out
		Married and living with husband or wife: Net income of—	Single or married and not living with husband or wife: Net income of—		
1937	$72.72	$2,500	$1,000		$70,694,000,000
1936	67.50	2,500	1,000		64,207,000,000
1935	76.36	2,500	1,000		55,814,000,000
1934	74.41	2,500	1,000	$51,003,000,000	52,057,000,000
1933	74.20	2,500	1,000	44,417,000,000	45,565,000,000
1932	75.10	2,500	1,000	46,054,000,000	49,296,000,000
1931	74.46	3,500	1,500	60,354,000,000	62,763,000,000
1930	74.77	3,500	1,500	73,304,000,000	74,414,000,000
1929	80.70	3,500	1,500	80,737,000,000	80,243,000,000
1928	84.22	3,500	1,500	76,990,000,000	
1927	89.30	3,500	1,500	74,522,000,000	
1926	90.38	3,500	1,500	75,042,000,000	
1925	86.32	3,500	1,500	71,736,000,000	
1924	94.95	2,500	1,000	68,322,000,000	
1923	94.57	2,000	1,000	67,403,000,000	
1922	101.14	2,000	1,000	58,400,000,000	
1921	94.18	2,000	1,000	57,186,000,000	
1920	94.34	2,000	1,000	69,393,000,000	
1919	94.38	2,000	1,000	63,852,000,000	
1918	94.24	2,000	1,000		55,082,000,000
1917	94.18	2,000	1,000		47,241,000,000
1916	85.44	3,000	3,000		40,077,000,000

Sources: Individuals required to file returns U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1937, pt. I, p. 188; Aggregate Income Payments, Kuznets, Simon, National Income and Capital Formation, 1919–35, National Bureau of Economic Research, New York: 1938, p. 73 (income payments unadjusted for disparity between depreciation and depletion at book value and at reproduction prices); National Income Paid Out 1929–37, U. S. Department of Commerce (R. R. Nathan), Survey of Current Business, vol. 19, No. 6 (June 1939), p. 12; 1916–18, based upon Brookings-King figures as indicated in appendix I, sec. D; Dividend Receipts as a Percent of Net Dividend Outgo, see table VII.

From appendix table VIII, it is clear that, except for 1936, major changes in the percentage which reported dividend receipts are of the total net dividend outgo have occurred when major changes in the requirements for filing returns or in the level of the national income or both have taken place. This is evident for the changes between 1916 and 1917, for those between the 1917–24 and the 1925–29 periods, and for the changes between the 1925–29 and the 1930–35 periods. The shift between the 1930–35 period and the 1936–37 is largely the result of a change in tabulating procedures for income from fiduciaries and partnerships and for the returns from estates and trusts.

For the years prior to 1936, dividends received by fiduciaries from which individual income taxpayers in turn received income were reported as dividend receipts by those taxpayers. Since some fiduciaries are included as separate taxpayers in the official tabulations of individual tax returns, some dividends were counted twice in the dividend receipt figures for those years. The extent of the duplication depends upon the volume of dividends reported by fiduciaries which are income taxpayers as such and the beneficiaries of which are also income taxpayers. No data are available as to the extent of such duplication. In 1937, the first year for which fiduciary returns were tabulated separately, the fiduciary returns included in the tabulation reported dividend receipts of $326,000,000 or less than 7 percent of the net dividend outgo of corporations. The 1937 figures, however, are believed to provide an exaggerated indication of the amount of duplication in earlier years. First, the number of fiduciaries has expanded over the period, particularly in recent years; and, second, not all beneficiaries of the fiduciaries included in the tabulations are necessarily income taxpayers. Consequently, a rough allowance of around 5 percent of the net dividend outgo has been used to modify the figures for all income taxpayers for the textual discussion. For income taxpayers with net incomes of $5,000 and over, the amount of duplication is, of course, even less—probably amounting to only a few percent of the net dividend outgo.

For 1936 and 1937, the tabulating procedure was changed. Beneficiaries of fiduciaries did not report the dividends received by those fiduciaries as their own dividend income. While this procedure has eliminated the duplications, which occurred in previous years, it has also eliminated a great share of the dividend receipts of fiduciaries from the tabulations covering income taxpayers, since more fiduciaries in 1936 and 1937 were not included than were included in those tabulations. In 1937, the only year for which figures are available, only $326,000,000, or about 38 percent, of the $860,000,000 of dividends received by fiduciaries were covered by the figures for the dividend receipts of taxpayers. The shift in tabulating procedure in 1936, therefore, accounts for a major share of the decline in dividend receipts reported by income taxpayers relative to the net dividend outgo between 1935 and 1936–37.

Also, for years prior to 1936, dividends received by partnerships were reported by the partners as dividends and not as income from partnerships. But for 1936 and 1937 such dividends were not reported as dividends by the partners. Data on the volume of dividends received through partnerships are not available. But the shift in the method of tabulating them does account for part of the decline

in the dividend receipts reported by income taxpayers between 1935 and 1936–37.

That the bulk of the dividends received by those fiduciaries which are not tabulated as taxpayers accrue to individual taxpayers is indicated by the data for 1937. Total income from fiduciaries reported by taxpayers totaled $831,000,000, while the total amount of the income of fiduciaries distributable to beneficiaries appears to have been less than $1,000,000,000. Furthermore, in 1937, $127,000,000, or about 15 percent, of the $831,000,000 of the fiduciary income received by taxpayers was received by those with net incomes of less than $5,000.

Appendix table IX indicates the distribution of dividend receipts reported to the Bureau of Internal Revenue among fiduciaries and taxpayers other than fiduciaries.

APPENDIX TABLE IX.—*Distribution of dividend receipts, by class of taxpayers, 1937*

Item	Dividend receipts	
	Amount	Percent
Net dividend outgo of the corporate system	$4,832,000,000	100.0
Reported by income taxpayers and all fiduciaries	4,047,000,000	83.8
Taxpayers, other than fiduciaries	3,188,000,000	66.0
Fiduciaries	859,000,000	17.7
Taxpayers	326,000,000	6.7
Nontaxpayers	533,000,000	11.0
Residual (includes partnership receipts)	785,000,000	16.2

Source: U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income for 1937, pt. I.

It is apparent from the data that had the 1937 tabulating procedures been the same as those used in the twenties, the dividend receipts reported by income taxpayers would have been of a magnitude comparable to those of the twenties in relation to the net dividend outgo of the corporate system.

F. DIVIDEND RECEIPTS REPORTED BY THE 25,000 INCOME TAXPAYERS REPORTING THE GREATEST AMOUNTS OF DIVIDEND RECEIPTS

It was necessary to assume that all 25,000 had net incomes of $5,000 or more since returns with net incomes of less than $5,000 are not classified by amounts of dividends received, except partially for 1928. It is possible that some returns with net incomes of less than $5,000 showed more dividends than some of those included in the highest 25,000—particularly during the depression years when heavy net capital losses could be reported as deductions. That the error resulting from this assumption is small, however, is shown by data for 1928. An estimate for the highest 25,000 based upon a tabulation including 792,000 returns and all but 3.4 percent of the dividends was only $5,000,000 higher than the one based upon the 569,000 returns with net incomes of $5,000 and over.

1935–37.—For these years, the number of tax returns was cross-classified by net income and by dividends received in the Statistics of Income while the amount of dividends received was classified only by net income classes. It was necessary, therefore, to estimate the distribution of amounts of dividends received by the size of dividend receipts. This was done separately for each of 11 net income class

intervals into which the more detailed data were grouped. Initial estimates were obtained by multiplying the number of returns in each cell by the midpoint of the dividend receipts interval for that cell. These initial estimates were then scaled down so that the totals for each net income class was equal to the reported total for that class. For net income classes with tax returns falling in the open-end $1,000,000 and over dividend receipts class, the factor for scaling down was based upon the factors for contiguous net income classes as modified by the condition that the dividends in the open-end class must average over $1,000,000.

The procedure of obtaining the estimate for 25,000 taxpayers from the estimated distribution of amounts of dividend receipts was the same as for earlier years.

Final estimates are believed to be fairly accurate though not as accurate as those for the earlier years.

1927–34.—For these years, both the number of returns and total dividends are classified by amount of dividend receipts. Exact figures are therefore available for the amount of dividends for returns numbering somewhat more and somewhat less than 25,000. For the dividends corresponding to 25,000 returns, straight line interpolation on the cumulated dividend by cumulated number line was used. Only a slight error is involved in this process.

General.—The effects of the tabulating procedure for income from fiduciaries and partnerships and of the change of procedure in 1936 upon the figures have been noted in the text and in the preceding section.

In addition, the question arises as to the extent to which fiduciaries returns are included among the 25,000 tax returns reporting the greatest amount of dividend receipts. If the beneficiaries of such a fiduciary return are also counted among the 25,000 there is a duplication of the number of "persons" and, prior to 1936, a duplication of dividends as well. On the other hand, if the fiduciary has two or more beneficiaries, and some or all of them are not counted in the 25,000, then the amount of dividends reported by the 25,000 tends to be high relative to the number of "persons" covered.

No data are available with regard to the extent to which fiduciaries and their beneficiaries are included among the 25,000. But it is believed that the various counteracting effects are on balance not sufficient to destroy the general validity of the results. That this must be so is indicated by data for 1937. Total dividends reported by all of the 44,531 fiduciaries with taxable net income amounted to $325,000,000. Of those fiduciaries, only 12,300 were above the $5,000 net income level and these, of course, received a considerably smaller volume of dividends. Subtracting the full dividends received by the 44,531 from the estimate for the 25,000 would indicate about 24 percent of the net dividend outgo of the corporate system as the absolute minimum amount received by substantially fewer than 25,000 taxpayers other than estates and trusts. But a substantial portion of the $325,000,000 of dividends must be added back as well as the dividends reported by the additional tax returns required to make up a total of 25,000. While no adequate basis for estimating these amounts is available, inspection of official tabulations of fiduciary returns and of the data previously described indicates that together they would be sufficient to account for most of the difference between the 24 percent absolute minimum and the 31 percent figure in table IX.

G. APPROXIMATE RELATION BETWEEN GROSS INCOME AND DIVIDEND RECEIPTS OF INCOME TAXPAYER

Basic data were obtained from United States Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. Gross income for each net income class was taken as total income before deductions plus wholly tax-exempt interest (except for the "Under $5,000" class for which no figures are available) less business and partnership losses (except for 1929 for which the data are not available) less net capital gains. The omission of wholly tax-exempt interest for the "Under $5,000" class and of business and partnership losses for 1929 has little effect upon the final results.

Straight line interpolation between adjacent average gross incomes was used to obtain the average dividends corresponding to the particular gross incomes shown in table X except for gross incomes under $5,000. The latter are averages for the "Under $5,000" net income class. A relatively minor error is involved in the method of interpolation used.

H. SAVINGS OUT OF DIVIDENDS

Percentages of income saved at various income levels were based upon National Resources Committee Consumer Expenditures in the United States: Estimates for 1935–36 (United States Government Printing Office, Washington, D. C.: 1939). The only adjustment made was to deduct taxes (personal income, poll, and certain personal property taxes) from the total income of each income level before computing the percentages of income saved. In order to subtract taxes it was necessary to estimate the taxes paid by single individuals since only figures for gifts and taxes combined were given. The estimates were obtained by assuming the division between gifts and taxes was the same for single individuals as for families. Even though the errors in this procedure were large, the effects on the end results would be small since the number of single individuals relative to families is small (less than 20 percent) for almost all of the income levels used in the succeeding computations.

Savings as defined in the Consumer Expenditures report "* * * reflect changes in assets and liabilities, and may be either negative or positive. In general, the savings category covers three groups of items: (1) Purchases of certain consumer goods and services, namely, purchases of houses and that part of life-insurance premiums and other payments which constitute a charge for selling and bookkeeping costs; (2) purchases of producer goods, such as farm equipment and other direct investments in business; and (3) insurance payments, increases in bank accounts, payment of debts, purchases of stocks and bonds and other investments not directly involving any transfer of goods" (p. 98. Greater detail is also given on the same page).

Income as defined in the Consumer Expenditures report "* * * includes the total net money income received during the year by all members of the economic family, plus the value of certain items of non-money income.

"Money income comprises the net earnings of all family members, including work relief earnings and earnings from roomers and boarders and other paid work in the home; net profits from business enterprises operated or owned by the family, and from property bought and sold

within the year; net rents from property; interest and dividends from stocks, bonds, and other property; pensions, annuities, and benefits; gifts in cash insofar as these are used during the year for current living expenses; income received as rewards, prizes, alimony, or gambling gains, and money received as direct cash relief" (p. 99. Greater detail is given on pp. 99–100 and in National Resources Committee, Consumer Incomes in the United States, United States Government Printing Office, Washington, D. C.: 1938).

To obtain approximately comparable data from the Statistics of Income to which to apply the savings percentages derived from the Consumer Expenditures report, adjustment for (*a*) differences in the definition of income, (*b*) price changes, and (*c*) differences in the income classes were made.

Total income before deductions plus tax-exempt interest less business and partnership losses less net capital gains of taxpayers was used, with certain exceptions, for gross income figures of taxpayers which would conform approximately to the definition of income used in the Consumer Expenditures report. For 1929 and earlier years, business and partnership losses were not tabulated separately and, hence, could not be deducted; for 1920, tax-exempt interest figures were not available and, hence, could not be added in. Tax-exempt interest for the "Under $5,000" net income class also had to be omitted since the data were not available. The net effects of these various omissions are relatively small.

In the Statistics of Income, tax returns are classified by statutory net income. As a basis for a conversion of the limits of the net income intervals to a gross income basis the difference between average gross income and average net income was computed. Straight line interpolation was then used to determine the differences appropriate for the class limits. These differences added to the net income class limits provided the estimated limits on a gross income basis in terms of current dollars. The National Industrial Conference Board cost of living index (shifted to a July 1935–June 1936 base) was then applied to obtain the gross income class limits in 1935–36 dollars, namely on a scale comparable to the one underlying the Consumer Expenditures material.

The next step was to shift gross income, dividends, taxes, and numbers of returns between classes so that the class intervals would be the same as those underlying the savings percentages from Consumer Expenditures. Straight line interpolation was used for the various items as follows:

(*a*) *Number of returns and gross income.*—Logarithms of the cumulated numbers, of cumulated gross income, and of the gross income class interval limits.

(*b*) *Dividends.*—Except for 1925, cumulated dividends and the logarithms of the gross income class interval limits; for 1925, the actual limits were used.

(*c*) *Taxes.*—Logarithms of cumulated taxes and the actual gross-income class interval limits.

The effect of applying linear interpolation in cases where deviations from linearity occurred is relatively minor.

The savings percentages derived from the Consumer Expenditures report were then applied to the gross income after taxes derived in

accordance with the procedure described above. The resulting total savings figures were then multiplied by the percentages which dividends were of gross income before taxes, for each gross income class, to obtain the low estimates of savings out of dividends.

Computations were made for the 7 years, 1920, 1925, 1929, 1932, 1935, 1936, and 1937. For the remaining years, estimates were based upon the relation of the low estimates of savings to the net dividend outgo for the 7 years for which the computations were made. They are, therefore, not as reliable as the estimates based upon computations from basic data.

For 1933 and 1934, the savings figures used were based upon the computations for 1932, 1935 and 1936; for 1926–28, 1921–24, and 1909–16, upon the computations for 1920, 1925, and 1929; for 1930–31, and 1917–19, upon both sets of computations. This variation in procedure was based upon differences in the level of income tax rates during the various periods.

APPENDIX II

DATA FOR PARTS III AND IV

A. SOURCES

Balance sheet and income account data for the years 1927 to 1933 have been taken from the compilations of the Standard Statistics Co., Inc., Standard Trade and Securities, "Statistical Section," volume 62, No. 18, section 2 (November 11, 1931), volume 65, No. 21, section 1 (August 17, 1932), and volume 73, No. 6, section 3 (July 13, 1934). Data for the years 1934 to 1938, inclusive, were obtained from the United States Department of Commerce which had transcribed them from the unpublished compilations of the Standard Statistics Co., Inc., for use in connection with a study it was making for the Temporary National Economic Committee.

End of 1926 balance sheet data were taken from Poor's and Moody's Industrial Manuals.

The bulk of the material on revaluations was obtained from the Registration Statements and Annual Reports of the respective companies on file with the Securities and Exchange Commission. Registrants were requested by the Securities and Exchange Commission to report in their initial registration statements all substantial revaluations of property, plant, and equipment, intangible assets, and investments for a 10-year period prior to 1934. However, since the Securities and Exchange Commission did not provide a precise definition of the term "revaluation" there was considerable discretion with regard to what was reported. For 1934 and later years, registrants were required to report analyses of surplus so that the data for those years is more complete than for earlier years.

Information on revaluations, particularly for years prior to 1934 and for corporations without registration statements, was also obtained from Poor's and Moody's Industrial Manuals.

The bulk of the information on acquisitions, mergers, changes in accounting procedures, etc., was obtained from Poor's and Moody's Industrial Manuals. Some information was also obtained from Registration Statements and Annual Reports filed with the Securities and Exchange Commission. While it is probable that some acquisitions, etc., were not reported in either Poor's or Moody's Manuals, it is believed that most if not all major items were covered.

Finally, small amounts of data were taken from annual reports of various companies and from the various volumes of Railway and Industrial Compendium (Wm. B. Dana Co., New York).

No attempt was made to obtain complete information on capital expenditures. Collection of such data was incidental and for the purpose of obtaining collateral material with regard to particular corporations.

B. DATA FOR SELECTED OIL PRODUCING AND REFINING CORPORATIONS

APPENDIX TABLE X.—*Rate of return on invested capital, 1927–38—Selected oil producing and refining corporations*

[Percent of invested capital]

Number and company	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Amerada Corporation	18.1	10.3	12.4	17.6	−8.9	6.2	2.2	11.8	12.0	12.8	14.8	10.1
2. Atlantic Refining Co. (The)	2.5	12.3	11.4	2.2	.9	3.3	4.7	4.0	3.0	5.3	6.2	2.5
3. Barnsdall Oil Co	8.6	7.9	11.8	8.3	−5.4	−2.9	−8.0	4.8	4.5	9.7	9.6	13.6
4. Consolidated Oil Corporation	3.7	5.5	6.1	6.8	−5.2	1.6	1.1	1.2	4.5	5.8	7.1	3.0
5. Gulf Oil Corporation	5.4	11.1	12.0	3.4	−3.8	2.1	−1.3	2.3	3.7	7.3	6.7	3.7
6. Houston Oil Co. of Texas	6.4	4.6	4.3	4.1	.7	−.3	.4	1.7	2.8	2.1	4.1	3.8
7. Humble Oil & Refining Co	4.9	11.4	16.2	9.2	2.3	7.7	9.4	10.0	10.4	13.6	16.7	10.7
8. Indian Refining Co	1.3	4.2	4.7	−13.9	−21.6	−14.2	−5.9	−4.6	22.6	20.0	9.6	.3
9. Indiana Pipe Line Co	14.5	13.1	19.5	17.7	8.1	3.6	3.1	2.3	3.9	8.3	8.4	3.8
10. Mid-Continent Petroleum Corporation	5.0	6.0	10.6	1.9	−6.9	−3.0	−2.6	1.5	4.3	8.1	8.7	1.7
11. Ohio Oil Co	7.3	5.4	11.7	5.3	−2.9	4.1	−.1	3.2	4.2	5.9	9.0	3.7
12. Phillips Petroleum Corporation	4.7	6.5	11.4	2.7	−1.3	2.0	2.2	4.5	9.3	10.6	12.6	4.8
13. Pure Oil Co	3.3	6.6	3.8	2.5	1.4	1.8	2.0	1.4	7.0	6.3	7.8	4.0
14. Shell Union Oil Corporation	4.1	7.4	4.9	.3	−5.1	1.6	.05	.7	2.9	6.5	6.6	3.8
15. Skelly Oil Co	4.5	9.9	12.1	4.5	−2.7	.1	−.4	3.3	8.0	12.0	13.9	5.4
16. Socony-Vacuum Oil Co., Inc	[1] 2.7	[1] 6.9	[1] 6.6	[1] 3.1	0	1.0	3.0	4.1	3.7	6.4	7.4	5.4
17. Standard Oil Co. of California	7.1	8.0	7.9	6.3	2.5	2.5	1.3	3.3	3.3	4.1	7.1	4.9
18. Standard Oil Co. (Indiana)	7.4	16.7	12.0	6.9	3.0	3.0	3.0	3.1	4.7	7.3	8.2	4.2
19. Standard Oil Co. (Kentucky)	12.7	12.2	16.4	12.8	9.0	7.1	6.8	7.3	6.5	11.1	12.2	10.8
20. Standard Oil Co. (New Jersey)	4.1	9.1	9.1	3.6	1.2	.7	2.3	4.4	5.5	7.9	10.1	6.3
21. Standard Oil Co. (Ohio)	5.8	11.2	11.3	8.7	4.5	−2.2	−1.5	−3.8	5.1	7.8	6.1	3.8
22. Sun Oil Co	6.0	8.8	12.5	10.4	4.4	5.9	8.4	7.9	7.8	7.8	9.0	2.7
23. Texas Corporation	7.0	11.8	9.0	4.0	−.6	1.0	1.3	2.6	5.2	8.8	10.4	4.8
24. Tide Water Associated Oil Co. (Del.)	3.8	8.4	6.8	4.3	−1.9	3.0	4.4	3.8	5.2	6.5	9.5	6.5
25. Union Oil Co. of California	6.2	6.7	8.0	5.2	2.4	2.5	1.9	2.8	4.3	4.8	8.3	4.9

[1] Standard Oil Co. of New York.

Source: Standard Statistics Co., Inc. For details, see appendix II, sec. A.

APPENDIX TABLE XI.—*Percent change in total assets, exclusive of cash and equivalent, (adjusted), 1927–38–Selected oil producing and refining corporations*

Number and company	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Amerada Corporation	3.1	−1.9	−9.9	0.3	−6.8	−16.3	12.0	−18.9	6.2	7.1	11.8	−3.7
2. Atlantic Refining Co. (The)	−1.4	9.6	4.2	−3.2	3.4	−4.1	−1.0	4.8	.2	5.0	16.2	2.3
3. Barnsdall Oil Co	14.5	10.0	−9.1	4.8	−5.0	−2.8	−11.3	−9.1	−16.8	24.3	7.3	3.5
4. Consolidated Oil Corporation	.0	−3.7	10.2	−.2	34.8	1.3	.1	−5.5	−3.0	3.3	3.6	−7.7
5. Gulf Oil Corporation	4.6	7.2	17.1	11.2	−6.5	−2.9	−2.8	−1.7	−.9	4.1	5.2	−4.6
6. Houston Oil Co. of Texas	5.3	−1.6	1.1	7.3	−.8	−4.1	−3.4	−.8	.2	−.4	2.9	−.2
7. Humble Oil & Refining Co	1.0	2.1	12.4	.2	−1.7	1.4	9.0	3.1	3.3	11.0	19.5	7.6
8. Indian Refining Co	10.0	1.0	20.3	−12.7	−5.0	−7.5	.2	−21.5	−1.4	4.7	2.7	−8.8
9. Indiana Pipe Line Co	−4.4	24.3	4.8	−5.1	−3.0	−25.5	−4.8	−4.7	−5.3	−3.5	3.6	2.2
10. Mid-Continent Petroleum Corporation	1.3	−6.8	5.2	−4.6	−7.3	−2.4	−1.6	1.0	−.7	5.2	6.2	−2.7
11. Ohio Oil Co	9.1	−2.6	47.4	91.9	−10.1	1.0	−7.9	−1.0	−5.9	−.2	2.6	−1.1
12. Phillips Petroleum Corporation	9.1	6.4	18.2	47.4	−3.7	−4.9	−2.8	−2.0	1.8	5.4	14.3	−.8
13. Pure Oil Co	.4	4.3	7.9	2.7	−1.9	−1.1	1.1	.4	4.7	3.9	9.5	3.1
14. Shell Union Oil Corporation	20.1	2.4	34.5	−6.1	−12.6	−6.1	−5.4	−3.7	.4	2.9	5.5	−3.5
15. Skelly Oil Co	17.2	7.5	8.9	8.9	−17.5	−12.7	−1.0	3.5	5.7	11.4	10.2	−4.3
16. Socony-Vacuum Oil Co., Inc	[1] 1.2	[1] 2.1	[1] 3.7	[1] −3.6	[2] 44.5	−4.9	−1.9	7.0	−.8	5.5	7.3	1.5
17. Standard Oil Co. of California	−.7	−.1	4.6	3.0	−3.1	−2.2	−3.3	−1.4	3.6	2.0	1.5	.8
18. Standard Oil Co. (Indiana)	−1.2	2.0	49.8	22.5	−5.5	−9.5	−.5	−4.0	5.7	2.2	6.5	−3.2
19. Standard Oil Co. (Kentucky)	[3] .0	[3] 10.0	[3] 4.0	[3] −2.5	[3] −6.4	[3] −1.8	−.2	−2.6	3.5	6.8	7.4	4.1
20. Standard Oil Co. (New Jersey)	−6.2	4.1	16.4	1.3	6.1	6.3	.8	−1.1	−3.3	−1.6	14.6	−2.3
21. Standard Oil Co. (Ohio)	−7.5	−7.0	14.3	6.5	26.5	.8	−3.1	−4.3	−1.1	1.7	10.5	6.7
22. Sun Oil Co	9.9	12.1	16.8	10.6	.2	1.1	3.8	1.3	1.0	9.5	12.4	2.2
23. Texas Corporation	[4]	42.3	21.9	.1	−6.2	−3.4	−3.2	−3.6	−1.7	7.2	9.8	1.0
24. Tide Water Associated Oil Co. Del	−.7	−4.4	6.1	−3.7	−7.8	−2.8	−2.4	−4.5	1.8	9.0	3.9	.9
25. Union Oil Co. of California	−2.6	5.8	8.7	.04	−6.1	−2.3	−4.4	−1.0	−1.0	2.0	3.6	5.2

[1] Standard Oil Co. of New York.
[2] End of 1930 figure used was that for Standard Oil Co. of New York.
[3] Covers cash and equivalent.
[4] Not computed.

Sources and methods: Based largely upon Standard Statistics Co., Inc., and Registration Statements filed with the Securities and Exchange Commission. For other sources and details as to methods, see appendix II, sec. A and ch. IX.

APPENDIX TABLE XII.—*Percent change in net property (adjusted), 1927–38—Selected oil producing and refining corporations*

Number and company	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Amerada Corporation	−2.9	−1.2	−17.0	−14.5	−14.8	−10.2	11.6	4.5	2.9	13.0	11.2	−0.
2. Atlantic Refining Co. (The)	4.2	12.9	5.9	5.8	8.2	.5	−2.5	5.0	1.3	6.2	17.9	6.0
3. Barnsdall Oil Co	8.5	−3.3	0	.7	−6.6	−6.0	−10.0	−3.5	4.2	31.2	15.7	−1.8
4. Consolidated Oil Corporation	−.1	−3.4	8.1	13.0	37.5	−1.7	−2.9	1.7	−3.6	1.6	2.5	−3.7
5. Gulf Oil Corporation	12.6	3.6	16.5	16.4	−3.1	−6.4	−3.1	1.1	1.7	8.4	8.3	3.3
6. Houston Oil Co. of Texas	6.3	−.9	.8	6.8	.7	−3.4	−3.7	−.9	.3	.4	2.2	.1
7. Humble Oil & Refining Co	20.4	1.8	9.7	1.4	7.1	3.1	6.9	7.8	5.7	10.9	19.3	9.5
8. Indian Refining Co	17.9	.3	13.5	−1.3	−11.4	−11.9	2.5	−10.5	−10.5	−4.3	−1.8	−6.0
9. Indiana Pipe Line Co	−5.7	−3.3	2.5	−3.7	−3.0	−3.1	−5.4	−3.8	−6.0	−3.7	1.1	7.6
10. Mid-Continent Petroleum Corporation	9.3	−4.4	1.3	−1.4	−6.7	−1.8	−6.3	−2.0	−.7	3.2	5.7	−.2
11. Ohio Oil Co	21.8	2.7	16.7	245.1	−6.1	.6	−.8	−2.7	−2.4	.7	2.6	−.1
12. Phillips Petroleum Corporation	9.4	2.7	19.2	46.5	−4.4	4.1	−5.4	−3.2	.2	7.0	8.1	1.2
13. Pure Oil Co	1.4	.9	10.0	3.1	−.5	−3.0	−1.7	6.6	2.3	4.0	3.8	4.8
14. Shell Union Oil Corporation	10.9	10.4	22.2	2.0	−9.5	−6.8	−5.5	−3.7	.4	.3	3.1	−2.6
15. Skelly Oil Co	16.0	4.5	12.1	4.3	−10.0	−8.1	−10.0	6.7	5.5	14.3	7.5	−2.8
16. Socony-Vacuum Oil Co., Inc	[1] 7.0	[1] 1.8	[1] 3.9	[1] −2.0	[2] 52.3	−3.9	−8.7	5.4	−.4	7.8	8.1	4.4
17. Standard Oil Co. of Calif	.9	1.3	2.8	1.2	−1.9	−2.6	−2.7	−2.0	2.2	.6	.2	.1
18. Standard Oil Co. (Ind.)	6.5	.2	2.0	186.0	−4.4	−35.2	−.7	−.2	11.5	5.0	6.9	.5
19. Standard Oil Co. (Ky.)	−.3	−5.3	2.1	6.2	7.3	−4.1	−3.7	−.2	.4	2.0	6.0	5.1
20. Standard Oil Co. (N. J.)	17.4	−.8	18.8	9.7	3.9	4.2	−7.3	2.2	−2.7	−1.0	14.6	−.6
21. Standard Oil Co. (Ohio)	−4.5	3.2	13.6	9.6	14.5	−5.8	−5.6	−1.8	−3.7	.9	14.8	6.9
22. Sun Oil Co	15.5	23.3	14.2	13.0	2.6	2.1	0	2.9	−1.6	11.5	6.5	6.2
23. Texas Corporation	3.1	43.0	17.1	4.1	−7.0	−5.0	−6.9	1.5	−3.0	.5	7.0	2.0
24. Tide Water Associated Oil Co. (Del.)	12.7	−3.9	−2.8	−.2	−3.1	−1.4	−4.7	−1.0	4.0	3.0	3.2	1.8
25. Union Oil Co. of Calif	−5.0	4.8	3.2	2.1	−2.2	−2.0	−3.5	−.1	.5	−.6	4.1	3.2

[1] Standard Oil Co. of New York.
[2] End of 1930 figure used was that for Standard Oil Co. of New York.

Sources and methods: Based largely upon Standard Statistics Co., Inc., and Registration Statements filed with the Securities and Exchange Commission. For other sources and details as to methods, see appendix II, sec. A and chs. IX and XI.

APPENDIX TABLE XIII.—*Book value of total assets, exclusive of cash and equivalent, as of the end of the year, 1926–38—Selected oil producing and refining corporations*

[Millions of dollars]

Number and company	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Amerada Corporation	18.96	19.55	19.18	11.29	16.29	15.18	12.70	14.22	11.53	12.25	13.12	14.67	14.12
2. Atlantic Refining Co. (The)	135.05	135.00	148.01	154.29	149.33	154.38	147.95	146.24	153.15	151.93	154.20	180.03	184.31
3. Barnsdall Oil Co	67.53	76.19	71.96	62.78	65.77	62.50	28.04	24.86	22.60	18.81	23.01	23.88	23.31
4. Consolidated Oil Corporation	357.07	357.08	344.01	379.23	366.56	319.01	323.24	323.63	305.76	296.69	306.39	317.29	292.77
5. Gulf Oil Corporation	315.71	330.36	354.17	414.61	460.96	430.87	418.19	406.57	399.46	395.91	412.28	529.12	506.69
6. Houston Oil Co. of Texas	49.31	51.94	51.10	51.66	55.41	54.96	51.49	49.75	49.36	49.45	49.26	50.36	50.33
7. Humble Oil & Refining Co	184.22	177.47	181.19	203.69	204.02	206.53	209.41	228.24	235.30	243.14	269.92	322.45	347.09
8. Indian Refining Co	19.09	21.00	21.22	25.53	20.91	13.42	12.42	11.59	9.10	8.97	9.39	10.16	9.27
9. Indiana Pipe Line Co	[1] 2.65	3.01	3.74	3.92	3.72	3.61	2.69	2.56	2.44	2.31	2.23	2.31	2.36
10. Mid-Continent Petroleum Corporation	77.83	78.87	73.47	77.29	73.70	68.31	66.66	65.62	53.28	52.87	55.60	58.12	55.72
11. Ohio Oil Co	69.74	76.10	74.12	109.28	209.69	178.22	180.02	165.73	164.15	127.93	127.62	130.99	129.57
12. Phillips Petroleum Corporation	116.64	127.23	116.81	138.12	203.57	196.06	171.29	166.56	163.29	166.24	175.15	200.23	198.69
13. Pure Oil Co	182.88	183.68	191.51	206.61	212.13	208.12	138.95	140.54	141.06	147.70	153.47	167.98	173.14
14. Shell Union Oil Corporation	287.16	344.86	353.30	475.32	446.36	390.13	366.39	346.51	333.73	335.63	345.82	364.23	351.39
15. Skelly Oil Co	44.42	52.08	56.09	60.97	66.41	45.68	39.89	39.48	40.86	43.17	48.11	53.04	57.66
16. Socony-Vacuum Oil Co., Inc	[2] 653.05	[2] 661.05	[2] 675.25	[2] 700.41	[2] 674.89	974.94	927.12	909.61	725.22	719.32	751.83	806.62	818.56
17. Standard Oil Co. of Calif	556.78	552.72	552.35	577.53	594.58	576.23	563.75	545.18	537.48	555.97	567.28	575.82	580.27
18. Standard Oil Co. (Ind.)	380.20	375.74	383.44	574.34	713.05	673.57	604.99	602.15	585.54	628.03	642.69	681.79	644.39
19. Standard Oil Co. (Ky.)	[3] 40.44	[3] 40.45	[3] 44.50	[3] 46.29	[3] 45.11	[3] 40.34	[3] 39.63	26.12	26.48	27.04	28.88	31.01	32.29
20. Standard Oil Co. (N. J.)	1,331.50	1,256.83	1,308.42	1,525.39	1,545.16	1,639.20	1,709.38	1,723.45	1,700.62	1,644.84	1,618.44	1,854.67	1,795.44
21. Standard Oil Co. (Ohio)	45.32	41.91	38.99	44.57	47.47	60.07	54.55	52.87	50.61	50.06	50.92	56.29	60.06
22. Sun Oil Co	56.53	62.15	71.55	83.56	92.41	92.64	93.68	97.20	98.42	99.40	108.87	122.39	125.07
23. Texas Corporation	[4]	306.69	436.43	532.20	532.61	499.78	482.57	460.69	444.26	437.66	507.65	570.36	575.81
24. Tide Water Associated Oil Co. (Del.)	234.36	238.53	228.06	241.91	232.92	214.77	178.60	174.27	166.35	169.34	183.23	190.38	192.06
25. Union Oil Co. of Calif	[5] 176.30	[5] 171.79	[5] 141.70	[5] 197.44	204.60	185.42	181.23	173.17	140.12	138.76	141.48	146.55	154.24

[1] Excludes receivables.
[2] Standard Oil Co. of New York.
[3] Includes cash and equivalent.
[4] Not available at time calculations were performed.
[5] After deduction of reserve for drilling expenditures carried as a liability.

Sources: Standard Statistics Co., Inc., and Poor's and Moody's Industrial Manuals. For details, see appendix II, sec. A.

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APPENDIX TABLE XIV.—*Book value of net property as of the end of the year, 1926–38—Selected oil producing and refining corporations*

[Millions of dollars]

Number and company	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Amerada Corporation	16.08	15.62	15.44	12.81	10.05	8.56	7.69	8.58	8.97	9.23	10.43	11.60	11.59
2. Atlantic Refining Co. (The)	68.29	73.04	87.97	93.18	98.56	106.61	107.18	104.49	109.74	111.16	113.74	134.12	142.17
3. Barnsdall Oil Co	61.09	66.27	53.67	52.74	53.13	49.61	17.24	15.52	14.97	7.66	10.05	11.63	11.42
4. Consolidated Oil Corporation	242.26	242.24	234.02	252.95	285.92	214.44	210.84	204.83	208.40	200.97	204.17	209.35	201.58
5. Gulf Oil Corporation	199.20	224.23	232.23	270.52	314.90	305.07	285.49	276.73	279.89	284.73	308.51	334.20	345.08
6. Houston Oil Co. of Texas	40.13	42.64	42.27	42.60	45.50	45.83	43.01	41.41	41.02	41.14	41.32	41.91	42.04
7. Humble Oil & Refining Co	115.40	128.68	131.00	143.70	145.73	162.48	167.50	179.02	193.06	204.14	226.31	269.91	295.44
8. Indian Refining Co	13.44	15.85	15.89	18.04	16.24	8.38	7.38	6.69	5.99	5.36	5.13	5.53	5.20
9. Indiana Pipe Line Co	2.61	2.46	2.38	2.44	2.35	2.28	2.21	2.09	2.01	1.89	1.82	1.84	1.98
10. Mid-Continent Petroleum Corporation	56.47	61.71	58.97	59.72	58.90	54.95	53.94	50.56	36.95	36.66	37.84	39.09	38.16
11. Ohio Oil Co	29.23	35.60	36.56	42.65	147.17	127.42	128.24	[1] 127.22	[1] 123.79	93.32	93.93	96.39	96.33
12. Phillips Petroleum Corporation	101.20	110.72	95.75	114.14	167.18	159.79	149.66	141.51	136.99	137.26	146.81	158.71	160.68
13. Pure Oil Co	151.70	153.87	155.29	170.75	176.10	175.22	104.40	102.60	[1] 109.42	[1] 111.90	[1] 116.34	[1] 126.60	[1] 132.68
14. Shell Union Oil Corporation	222.20	246.31	271.93	332.18	338.92	306.60	285.78	270.03	260.05	261.59	262.44	269.94	262.82
15. Skelly Oil Co	35.81	41.55	43.40	48.66	50.73	35.72	32.83	29.56	31.53	33.26	38.01	40.87	44.46
16. Socony-Vacuum Oil Co., Inc	[2] 414.50	[2] 443.37	[2] 451.20	[2] 468.83	[2] 459.26	699.31	672.15	613.45	[1] 402.23	[1] 400.63	[1] 424.76	[1] 458.98	479.17
17. Standard Oil Co. of Calif	451.72	455.67	461.52	474.38	480.01	470.71	458.67	446.14	437.19	445.64	448.22	449.05	449.35
18. Standard Oil Co. (Ind.)	154.61	164.72	165.10	168.41	503.97	481.72	308.88	306.63	[1] 313.79	[1] 366.19	[1] 385.16	[1] 409.19	[1] 394.83
19. Standard Oil Co. (Ky.)	19.31	19.25	18.23	18.61	19.77	19.07	18.29	17.62	18.64	18.72	19.09	20.23	21.27
20. Standard Oil Co. (N. J.)	550.79	656.64	651.60	[1] 776.59	[1] 851.82	[1] 1,129.91	[1] 1,143.83	[1] 1,060.45	[1] 1,083.51	[1] 1,054.54	[1] 1,043.77	[1] 1,195.77	[1] 1,172.25
21. Standard Oil Co. (Ohio)	29.19	27.87	28.75	32.65	35.77	40.94	38.57	36.42	35.77	34.43	34.73	39.87	42.64
22. Sun Oil Co	31.93	36.88	45.49	51.94	58.70	60.21	61.49	[3] 61.49	63.28	62.26	69.40	73.93	78.54
23. Texas Corporation	180.65	[1] 186.32	[1] 266.38	[1] 311.82	[1] 324.60	301.72	286.64	266.02	[1] 269.91	[1] 262.87	[1] 300.43	[1] 334.09	[1] 340.73
24. Tide Water Associated Oil Co. (Del.)	138.50	162.66	156.37	151.99	151.71	146.98	119.98	114.38	113.23	117.81	120.06	123.92	126.13
25. Union Oil Co. of Calif	[3] 137.17	[3] 130.37	[3] 136.68	[3] 141.01	151.22	147.89	144.88	139.74	107.96	108.54	107.85	112.18	115.79

[1] Intangibles reported separately included for comparability with other years.
[2] Standard Oil Co. of New York.
[3] After deduction of reserve for drilling expenditures carried as a liability.

Sources: Standard Statistics Co., Inc., and Poor's and Moody's Industrial Manuals. For details, see appendix II, sec. A.

APPENDIX TABLE XV.—*Revaluations of property, 1927–38* [1]*—Selected oil producing and refining corporations*

Year	Amount	Item
1. AMERADA CORPORATION		
1927		Discontinued the practice of capitalizing intangible drilling. After 1927 they are charged to income.
1930	−$1,052,482	Created special reserve.
2. ATLANTIC REFINING CO.		
1927	+$1,820,000	Upon determination that depreciation and obsolescence charges had been in excess of requirements.
1928	+4,889,598	
1936	−4,037,234	3 refineries abandoned.
3. BARNSDALL OIL CO.		
1928	−$5,556,383	Productive drilling capitalized prior to Jan. 1, 1928.
	−5,207,697	Adjustment of unproductive property values.
1929	−918,797	
1932	−31,256,065	Oil and gas leases reduced to $1 and other property and equipment revalued.
1935	−7,616,255	Adjustment for disposal via distribution of stock of a newly formed subsidiary consisting of former refining and marketing divisions.
4. CONSOLIDATED OIL CORPORATION (FORMERLY SINCLAIR)		
1931 (January 1932) [2]	−$107,569,504	Property. [3]
	−22,425,099	Intangibles (goodwill, organization expenses, etc.) [3]
5. GULF OIL CORPORATION		
(No registration statement)		
6. HOUSTON OIL CO. OF TEXAS		
1932	−$1,290,374	Property; reserves created.
1937	−296,752	Reversal of leasehold costs capitalized in prior years.
1938	+94,791	Partial reversal of 1932 property revaluation.
7. HUMBLE OIL AND REFINING CO.		
1927	−$8,527,598	Appreciation in properties.
1931	+6,033,262	Depreciation disallowed by U. S. Treasury Department.
8. INDIAN REFINING CO.		
1930	−$1,578,557	Lubricating plant.
1931	−5,537,458	Property (at time control acquired by Texas Corporation).
	−1,246,113	
1933	−850,000	Trade-mark "Havoline."
1937	+503,944	Depreciation reserve decreased in accordance with Interstate Commerce Commission and Internal Revenue determination.
9. INDIANA PIPE LINE CO.		
(No registration statement)		

[1] Only revaluations carried directly to surplus or capital reserves are included. Adjustments made for reasons other than revaluation are also included.

[2] Statement for 1931 covers 13 months ending Jan. 31, 1932; statement for 1932, 11 months ending Dec. 31, 1932.

[3] As per appraisal by Board of Directors.

APPENDIX TABLE XV.—*Revaluations of property, 1927–38—Selected oil producing and refining corporations*—Continued

Year	Amount	Item
		10. MID-CONTINENT PETROLEUM CORPORATION
1934	−$1,382,036	Property, plant and equipment (to reflect appraisal).
	−11,479,720	Intangibles (to reflect appraisal).
1935	−24,077	Intangibles.
1937	−847,059	Intangibles, amortization.
1938	−846,135	Do.
		11. THE OHIO OIL CO.
1931	−$11,450,068	Property reserves increased.
1935	−28,190,420	Intangibles.
		12. PHILLIPS PETROLEUM CORPORATION
1928	−$17,458,261	Properties; reversal of 1925 write-up.
1932	−16,000,000	Properties.
		13. PURE OIL CO.
1932	−$5,019,458	Fixed property; reversal of 1922 entries.
	−34,521,163	Intangibles; reversal of 1922 entries.
	−47,606,774	Properties.
	+19,523,031	Contracts, rights, patents, trade-marks.
		14. SHELL UNION OIL CORPORATION
1935	+$500,896	Depreciation reserve of subsidiary decreased.
1937	−492,309	Intangible development costs.
		15. SKELLY OIL CO.
1931	−$10,185,042	Reserves for depletion and depreciation increased.
	+780,334	Reserves for depreciation of miscellaneous property decreased.
	−728,741	Property; excess of investment in subsidiaries over equity as shown by subsidiaries' books.
	−901,548	Property; advances to cover losses of a particular division.
1938	+7,659,687	Adjustment of prior years' depreciation properties.
	−2,778,465	Undeveloped oil and gas properties.
		16. SOCONY-VACUUM OIL CO., INC.
1934	−$228,123,580	Goodwill and appreciation.
	−3,633,580	Do.
1935	−87,938	Goodwill.
1936	−6,732,309	Property of a subsidiary (in connection with settlement of income taxes for years prior to acquisition).
1938	−128,167	Goodwill.
		17. STANDARD OIL CO. OF CALIFORNIA
1935	−$839,710	Properties.
	−233,178	Depreciation reserves increased.

APPENDIX TABLE XV.—*Revaluations of property, 1927–38—Selected oil producing and refining corporations*—Continued

Year	Amount	Item
		18. STANDARD OIL CO. (INDIANA)
1930	+$7,830,445	Lands, leases, and concessions.
1932	−5,034,698	Reversal of preceding item.
1934	−2,895,717	Real estate, buildings, machinery and equipment (to eliminate appraisal appreciation recorded in 1912).
	+10,770,390	Subsidiary's reserves decreased (to conform with U. S. Treasury Department's findings).
1935	+14,683,100	Reserves decreased (to conform with Treasury Department's findings).
1936	+802,037	
1937	−2,481,022	Leaseholds.
1938	−16,133,337	Intangibles representing excess of cost over book values of subsidiaries at date of acquisition.
		19. STANDARD OIL CO. (KENTUCKY)
1931	−$2,000,000	Estimate write-off for refinery dismantled.
1934	+1,060,621	Depreciation reinstated.
		20. STANDARD OIL CO. (N. J.)
1927	+$8,750,000	Patents, copyrights, goodwill, etc. (to reflect appraisal).
1929	+2,100,000	
1931	+244,920,000	Estimated adjustment for consolidating subsidiaries
1932	−31,809,719	Properties of a subsidiary (reversing a 1920 entry).
1938	−16,153,565	Bolivian properties (reserves increased).
		21. STANDARD OIL CO. (OHIO)
		(None reported)
		22. SUN OIL CO.
		(None reported)
		23. TEXAS CORPORATION (THE)
1933	−$850,000	Trademark "Havoline."
1935	+1,173,328	Depreciation reserves adjusted in accordance with I. C. C. and Bureau of Internal Revenue determination.
1936	+35,927,033	
1937	+11,801,397	
		24. TIDE WATER ASSOCIATED OIL CO. (DEL.)
1927	+$5,780,517	Depletion reserves decreased.
1932	−10,466,237	Property and equipment.
	−211,302	Intangibles.
	−14,656,746	Properties.
1936	−1,297,996	Loss on sale of undeveloped properties.
		25. UNION OIL CO. OF CALIF.
1930	+$7,081,124	Depletion reserves decreased in order to capitalize 1928 and 1929 intangible drilling expenditures in accordance with change in accounting.
1934	−31,624,366	Oil lands and development (reversal of 1926 entry).

Sources: Registration Statements and Annual Reports filed with the Securities and Exchange Commission and Poor's and Moody's Industrial Manuals. For details, see appendix II, sec. A.

APPENDIX TABLE XVI.—*Revaluations of assets other than property, 1927–38*[1]*—Selected oil producing and refining corporations*

Year	Amount	Item
1. AMERADA CORPORATION		
2. ATLANTIC REFINING CO.		
1928	−$250,000	Investments.
	−4,601,600	Do.
1929–35	+330,664	To reflect year by year profits and losses of unconsolidated subsidiaries.
	−473,162	
1936	−231,243	Practice discontinued in 1936 with write-down to record them at original cost.
1932	−29,617	Investments.
1933	−175,000	Do.
1934	−75,000	Do.
1935	−1,484,000	Do.
1936	−755,613	Do.
1937	+775,125	Do.
1938	+124,030	Do.
3. BARNSDALL OIL CO.		
1927	−$986,251	Loss on investments charged off and mining properties disposed of.
1929	−2,007,894	Cost of bond retirement and reduction of treasury stock to par.
1932	−2,391,878	Investments.
1936	−300,000	Do.
1937	−750,000	Do.
1938	−1,350,000	Do.
4. CONSOLIDATED OIL CORPORATION (FORMERLY SINCLAIR)		
1930	−$680,058	Investments (reserve for insurance).
	−8,783,243	Investments in unconsolidated affiliates.
	−2,579,093	Miscellaneous investments.
5. GULF OIL CORPORATION (No registration statement)		
1937	+$90,538,437	Unadjusted credits; increase in assets arising out of oil sale contract entered into by a subsidiary.
1938	−2,038,193	Unamortized discount and expense and premium paid on funds retired.
6. HOUSTON OIL CO. OF TEXAS (None reported)		
7. HUMBLE OIL & REFINING CO. (No registration statement)		
8. INDIAN REFINING CO. (None reported)		
9. INDIANA PIPE LINE CO. (No registration statement)		
1927	−$500,000	Adjustment for segregation of cash and equivalent not previously segregated.
10. MID-CONTINENT PETROLEUM CORPORATION (None reported)		
11. THE OHIO OIL CO.		
12. PHILLIPS PETROLEUM CORPORATION (None reported)		
13. PURE OIL CO. (None reported)		

[1] Only revaluations carried directly to surplus or capital reserves are included. Adjustments made for reasons other than revaluation are also included.

APPENDIX TABLE XVI.—*Revaluations of assets other than property, 1927–38—Selected oil producing and refining corporations*—Continued

Year	Amount	Item
14. SHELL UNION OIL CORPORATION		
1936	+$451,451	Investment in unconsolidated affiliate.
15. SKELLY OIL CO.		
1938	+$2,365,434	Reserve no longer needed.
16. SOCONY-VACUUM OIL CO., INC.		
(None reported)		
17. STANDARD OIL CO. OF CALIFORNIA		
(None reported)		
18. STANDARD OIL CO. OF INDIANA		
1935	−$6,059,072	Investments (reserves set-up).
19. STANDARD OIL CO. OF KENTUCKY		
1933	−$13,470,000	Adjustment for segregation of cash and equivalent not previously segregated.
1935	−362,707	Investment in subsidiary.
20. STANDARD OIL CO. OF NEW JERSEY		
1934	−$4,000,000	Investment of a subsidiary.
21. STANDARD OIL CO. (OHIO)		
(None reported)		
22. SUN OIL CO.		
1928	+$1,691,669	Adjustments, including consolidation of companies previously affiliated upon acquisition of hitherto outstanding minority interest.
23. TEXAS CORPORATION (THE)		
1933	−$5,600,000	Investment in companies not consolidated.
24. TIDEWATER ASSOCIATED OIL CO. OF DELAWARE		
1932	−$974,500	Investments.
	−810,699	Stock discount and expense.
	−1,745,252	Investments in affiliated companies.
	−2,221,787	Inventories.
25. UNION OIL CO. OF CALIFORNIA		
1931	−$7,210,063	Inventories.
	+31,183	Difference between par and cost of bonds purchased.

Sources: Registration statements and annual reports filed with the Securities and Exchange Commission and Poor's and Moody's Industrial Manuals. For details, see appendix II, sec. A.

APPENDIX TABLE XVII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected oil producing and refining corporations*

1. AMERADA CORPORATION

Year	Item
1929	A subsidiary sold to Dixie Oil Co. (now Stanolind Oil & Gas) an undivided ½ interest in all nonproductive leaseholds in Oklahoma and Kansas for $10,000,000 (½ in cash; ½ out of production).
1930	Sold to Union Oil Co. of California an undivided ½ interest in "King" lease in California for $8,000,000 (½ in cash; ½ out of production).

2. ATLANTIC REFINING CO. (THE)

1933	Sold its 50 percent interest in Union Atlantic Co. (Philadelphia) (1932 net loss $395,422; December 1932, total assets $3,409,186; net property $1,593,425).
1937	Acquired Buffalo Pipe Line Co. (consideration not reported; investment carried at $999,700).
	Gross additions to plant and property at cost $33,977,000; retirements and sales, $8,784,000.

3. BARNSDALL OIL CO.

1928	Acquired Wolfe Oil Corporation for 52,441 shares of class A common with par value of $1,311,025 (total assets, $1,401,064; net property, $1,395,554; 1927 net income, $66).
1929	Purchased an 85 percent interest in the Brownell Corporation. Subsidiaries completed 111 wells.
1935	Assets in the refinery and marketing divisions transferred to a newly formed subsidiary, Barnsdall Refining Corporation, for 1,129,390 common shares, 21,635 preferred shares, $5,000,000 in bonds, and $1,511,067 in notes. Net property transferred was valued at $7,553,921 ($7,616,255 at end of 1934); common stock of the new corporation was distributed to Barnsdall Oil stockholders as a dividend.
1936	Acquired all capital stock of Midway Oil Co. for 116,884 shares of treasury stock (Midway not reported by financial services).
1937	Acquired all capital stock of Greta Oil Corporation for 54,570 shares and assumption of $1,132,857 of liabilities; Greta then liquidated (Greta not reported by financial services).

4. CONSOLIDATED OIL CORPORATION (FORMERLY SINCLAIR)

1928	Acquired controlling interest in Venezuelan Petroleum Co. (1927-total assets, $4,743,641; net property, $4,009,168; net income, $108,625).
1930	Acquired assets and business of Pierce Petroleum Corporation for 700,000 shares, $1,100,000 for retirement of Pierce preferred stock, and assumption of $3,570,000 of liabilities (1929-total assets, $24,797,650; net property, $16,620,209; net income, $1,067,402).
	Sold ½ interest in Sinclair Pipe Line Co. and Sinclair Crude Oil Purchasing Co. to Standard Oil Co. (Indiana).
1931 (January 1932)	Acquired all properties of Prairie Oil & Gas Co. and its subsidiary Prairie Pipe Line Co. for 2,441,432 shares and assumption of liabilities (1929-total assets, $209,807,373; net property, $69,717,050; net income, $14,331,643).
1932	Acquired assets and business of Rio Grande Oil Co. for 494,329 shares purchased (total assets, $49,007,613; property, $42,788,149; net income, $5,659,943).
	Acquired 85 percent interest in Penn-Mex Fuel Co. for cash (total assets, $20,094,342; net property, $11,516,029; net income, $283,510).
1934	Acquired 50 percent interest in Sherwood Bros., Inc., for $1,045,000.
1935	Completed purchase of all capital stock of Richfield Oil Corporation (New York) for 4,408,800 shares; this purchase included the remaining 50 percent interest of Sherwood Bros., Inc. (Richfield not reported by financial services).
1936	A subsidiary, Rio Grande Oil Co., acquired certain undeveloped oil acreage in California, an interest in Richfield Oil Co. of California, and Pan-American Petroleum Corporation (in receivership) from Cities Service; for these Rio Grande issued to Cities Service stock in an amount equal to Consolidated's holdings so that Cities Service & Consolidated then each held 50 percent of Rio Grande stock.
1937	In reorganization of Richfield Oil Corporation and Pan-American Petroleum Corporation, Richfield of California, acquired properties and assets of Rio Grande. For its 50 percent interest in Rio Grande, Consolidated received a large interest, subsequently increased to 100 percent, in Richfield of California.

5. GULF OIL CORPORATION

1938	Acquired Royal Oil Corporation, a distributor of Shell products in northeastern Pennsylvania.

6. HOUSTON OIL CO. OF TEXAS

(No acquisitions reported)

APPENDIX TABLE XVII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected oil producing and refining corporations*—Continued

7. HUMBLE OIL & REFINING CO.

(No acquisitions reported)

8. INDIAN REFINING CO.

Year	Item
1930	Texas Corporation acquired control by exchanging 1 share of Texas for 8 shares of Indian.

9. INDIANA PIPE LINE CO.

(No acquisitions reported)

10. MID-CONTINENT PETROLEUM CORPORATION

1927	Purchased from Frank E. Kistler and associates approximately 137 tank stations and 224 service stations in Iowa, Illinois, Indiana, Kentucky, and Minnesota, formerly owned by Black Hawk Oil Co., Rex Oil Co., and Hawkeye Oil Co. for 56,481 shares of common stock.

11. OHIO OIL CO.

1927	Purchased for $2,000,000 the leases and drilling contracts of Enalpac Oil & Gas Co.
1930	Company issued $60,000,000 of preferred stock with which to reacquire the capital stock ($20,000,000 par) of Illinois Pipe Line Co. on a 3 for 1 basis (Illinois had formerly been a subsidiary but was sold by Ohio in 1914). Acquired properties and assets and assumed liabilities of Transcontinental Oil Co., exchanging ¼ share of common for 1 share of Transcontinental (1929-total assets, $64,621,056; net property, $48,062,107; net income, $4,723,990).
1933	Acquired, through a subsidiary, Laramie Gas Co. (Laramie not reported by financial services).

12. PHILLIPS PETROLEUM CORPORATION

1928	Purchased control of Benzo-Gas Motor Fuel Co. (total assets, $1,120,593; net property, $472,279; net income, $1,643).
1929	Acquired Wilhoit Oil Co., Winters Oil Co., State Oil Co., Morrison Oil Co., Hancock Oil Co., and a number of smaller concerns; also acquired Mitchell Oil & Gas Co. (none of the companies reported by financial services).
1930	Acquired the assets (subject to the liabilities) of Independent Oil & Gas Co. for 1,025,170 common shares (1929, total assets, $46,205,825; net property, $35,045,165; net income, $3,170,087). Acquired Armould Oil Co. (not reported by financial services).
1935	Purchased Central Kansas Pipe Line Co. but resold all the property except a stretch of pipe line (details not reported). Purchased properties of Mead Oil Co. (consideration not reported).
1937	Acquired all outstanding stock of United Broadcasting Co. (consideration not reported).

13. PURE OIL CO.

1928	Purchased substantially all capital stock of Seaboard Oil Co. for a reported price of $325,000. (December 1927-total assets, $3,153,028; net property, $2,109,278; net loss, $180,803.)
1929 (Mar. 30, 1930)	Sold $20,000,000 sinking fund notes to finance pipe line from its "new field in Van Zandt County, Texas."
1931–38	Acquired controlling interests in 28 marketing companies operating in 18 States, most of which had been customers of Pure Oil.
1936–38	Several new refinery units built and extensions and improvements made.

14. SHELL UNION OIL CORPORATION

1928	Acquired New England Oil Refining Co. (December 1925-total assets, $27,767,167; net property, $15,797,967; net loss, $1,138,551.)
1929	Acquired New Orleans Refining Co. (not reported by financial services).
1928–29	Sold 3,000,000 shares of common in December 1928 and $40,000,000 preferred in June 1929, the purpose of which was to finance purchase of companies listed above and to increase and improve the company's facilities.
1936	Sold holdings (22 percent interest) in Flintkote Co. to bankers for $6,600,557.

APPENDIX TABLE XVII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected oil producing and refining corporations*—Continued

15. SKELLY OIL CO.

(No acquisitions reported)

16. SOCONY-VACUUM OIL CO., INC.

(1927–30: Figures for Standard Oil Co. of New York)

Year	Item
1930	Acquired all properties and assumed the liabilities of White Eagle Oil & Refining Co. for 429,335 shares (December 1928, total assets, $19,957,397; net property, $12,535,369).
	Acquired several retail marketing companies—Allen Lubricating Co., Harbor Oil Co., Menard Oil Co., Dahlstron Lubricating & Distributing Co. (none reported by financial services).
1931	Socony and Vacuum merged.

	Socony	Vacuum
Total assets	$720,305,566	$240,545,975
Net property	459,259,294	75,188,374

1938	Purchased block of stock in Martin & Schwartz, Inc., from Sun Oil for $110,000 and 23,435 shares; later acquired control by purchasing entire new issue.

17. STANDARD OIL CO. OF CALIFORNIA

1936	A subsidiary built a 20 mile pipe line and acquired a ½ interest in another pipe-line system.
1938	Mexican Government expropriated the properties of 2 Mexican subsidiaries.

18. STANDARD OIL CO. (INDIANA)

1929	Offered to Class "A" and class "B" common stockholders of Pan-American Petroleum & Transport Corporation, 7 shares of Standard for 6 of Pan-American. Standard previously held control through ownership of Class "A", the voting stock.
	Dixie Oil Co., Inc. (wholly owned subsidiary), acquired a ½ interest in all undeveloped acreage of Amerada Petroleum Corporation in Oklahoma and Kansas, approximating 500,000 acres.
1930	Purchased the outstanding 50 percent interest (50 percent already held) in Sinclair Crude Oil Purchasing Co. (1929-total assets, $120,352,029; net property, $7,218,948; net loss, $641,444).
	Purchased outstanding 50 percent interest in Sinclair Pipe Line Co. (1929, total assets, $53,464,735; net property, $42,876,014; net income, $9,420,757).
1932	Sold the foreign properties of a subsidiary (Pan-American Petroleum & Transport Co.) to Standard Oil of New Jersey for $47,910,107 and 1,778,976 shares of Standard Oil of New Jersey, stock payable over a period of years.
1933	Pan-American Petroleum & Transport Co. acquired balance of interest in American Oil Co. (already controlled) for 1,286,876 shares. American Oil Co. had in turn recently acquired all stock of Lord Baltimore Filling Stations, Inc.
1935	A subsidiary (Stanolind Oil & Cas Co.) purchased all oil properties and operating equipment of Yount-Lee Oil Co. for $42,000,000. Purchase included all stock of Yount-Lee Pipe Line Co.

19. STANDARD OIL CO. (KENTUCKY)

1931	Refinery at Louisville dismantled and refining operations discontinued.
1935	Purchased Refiners Oil Corporation and took over assets consisting of several bulk plants and 15 service stations in Kentucky (further details not reported).

20. STANDARD OIL CO. (NEW JERSEY)

1928	Acquired control of Creole Petroleum Corporation in exchange for all outstanding stock of Standard Oil Co. of Venezuela and $8,000,000 (total assets, $55,585,015; property, $12,778,865 as of Dec. 31, 1928).
1929	Acquired control of Colonial Beacon Oil Co. (Dec. 31, 1928-total assets, $33,354,586; property, $18,445,496).
1930	Colonial Beacon sold 5 ocean going tankers (consideration not reported).
1931	Colonial Beacon purchased controlling interest in Keshec, Inc. operating a chain of 75 service stations in New York (Keshec net reported by financial services).
	Reports placed upon a consolidated basis.

APPENDIX TABLE XVII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected oil producing and refining corporations*—Continued

20. STANDARD OIL CO. (NEW JERSEY)—Continued

Year	Item
1932	Purchased the properties of Pan-American Petroleum & Transport Co. for $47,910,107 and 1,778,976 shares of Standard Oil of New Jersey stock, payable over a period of years.
1935	Colonial Beacon purchased outstanding stock of Busfield Oil Co. and Arthur H. Ballard, Inc., both distributors in New England (neither reported by financial services).
1937	Bolivian Government moved to confiscate holdings in that country. The matter is now in hands of U. S. State Department.

21. THE STANDARD OIL CO. (OHIO)

1928	Purchased refinery at Latonia, Ky., from Petroleum Refining Co.
	Purchased tank-car division of Spears & Riddle.
	Purchased Soline Service Station Corporation with 25 service stations in Cleveland.
1929	Purchased Caldwell & Taylor, Inc., a service station and tank-wagon business (not reported by financial services).
1931	Purchased entire assets of Refiners Oil Co. (service and bulk stations) (not reported by financial services).
	Acquired the service and bulk stations of Fort Industry Oil Co. (not reported by financial services).
	Acquired entire assets and business of the Solar Refining Co. (Dec. 31, 1930, total assets, $6,157,002; property, $2,099,894).
1937	Built 122 miles of gasoline pipe line.
	Acquired control of Western Kentucky Petroleum Corporation, M. O. K. Corporation, Owensboro Corporation, Clay City Pipe Line Co., Simrall Corporation, Michigan-Toledo Pipe Line Co., Berea Engineering Co.—representing about $2,000,000 of property.
	Acquired a number of new leases in Kentucky, new pipe lines and extension of old ones, new equipment and new cracking plant at Toledo—total spent on new property, $6,687,978; retirements and sales, $1,521,479.
1938	Extended pipe lines and laid about 56 miles of new ones. Spent $5,978,733 on new property; sales and retirements, less than $1,000,000.

22. SUN OIL CO.

1928	Consolidated "companies previously affiliated upon acquisition of hitherto outstanding minority interest."
1937	Acquired 100 percent interest in Martin & Schwartz, Inc.
1938	Sold 23,435 of 58,435 shares of M. & S., Inc., to Socony-Vacuum to which control passed upon purchase of new issue of 41,565 shares.

23. TEXAS CORPORATION

1926	Company organized.
1928–38	Acquired 99.9 percent control (substantially all in 1928) of California Petroleum Corporation by offering 1 share Texas for 2 of California. (Dec. 31, 1928- total assets, $85,424,896; net property, $55,891,630; net income, $1,648,920.) Consolidated in 1928.
1928	Acquired certain properties of Galena-Signal Oil Co. including a refinery, land, tank farms, deep water terminals at Baywater, N. J., and Wilmington, N. C., bulk plants, service stations, certain inventories and equipment including 2 ocean going tankers (consideration not reported).
	Acquired 50 percent interest in Texas Empire Pipe Line Co. (not consolidated); other 50 percent owned by Empire Gas & Fuel Co.
1929	Texas Petroleum Co., a subsidiary, acquired 53,906 acres of exploration and exploitation concessions in Venezuela.
1931	Acquired control of Indian Refining Co. through exchange of 1 share of Texas for 8 of Indian.
1936	Acquired 50 percent interest in Valley Pipe Line Co.
	Acquired 50 percent interest in South American Gulf Oil Co.
	Acquired 50 percent interest in Bahrein Petroleum Co., Ltd., in exchange for all stock of 5 subsidiaries transferred to Bahrein, representing property valued at $15,439,718.
	Acquired 50 percent interest in 3 foreign companies from Far Eastern Petroleum Co. for $18,000,000 (none of these companies were consolidated).
1937	Acquired joint interest with Socony-Vacuum in 99.76 percent of Columbia Petroleum Co. which in 1937 started construction of a pipe line from its "Barco" concession in the interior of Columbia to the seaboard completed construction in 1939 (not consolidated).

APPENDIX TABLE XVII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected oil producing and refining corporations*—Continued

24. TIDEWATER ASSOCIATED OIL CO. (DEL.)

(No acquisitions reported)

25. UNION OIL CO. OF CALIFORNIA

(No acquisitions reported)

Sources: Poor's and Moody's Industrial Manuals and Registration Statements and Annual Reports filed with the Securities and Exchange Commission. For details, see appendix II, sec. A.

C. DATA FOR SELECTED STEEL AND IRON CORPORATIONS

APPENDIX TABLE XVIII.—*Rate of return on invested capital, 1927–38—Selected steel and iron corporations*

Number and company	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Acme Steel Co	16.3	22.5	23.1	8.4	4.0	0.1	9.7	10.2	18.3	19.6	15.8	3.4
2. American Rolling Mill Co	6.6	5.9	8.2	1.8	−.7	.2	1.5	3.3	6.2	7.6	7.0	−.9
3. Bethlehem Steel Corporation (Delaware)	4.5	5.0	7.2	4.6	1.1	−1.9	−.3	1.2	1.8	3.2	5.8	1.9
4. Byers (A. M.) Co	8.3	9.0	7.8	4.6	.4	−4.4	−5.3	−4.1	−4.9	−1.9	.5	−4.1
5. Castle (A. M.) & Co	10.2	15.5	17.3	7.8	−.2	−3.8	2.3	9.1	8.0	12.4	19.8	4.6
6. Crucible Steel Co. of America	5.3	5.2	7.4	3.8	−1.2	−2.8	.4	.7	1.9	3.5	4.2	−1.8
7. Inland Steel Co	9.1	11.9	13.7	8.1	3.0	−1.4	2.3	5.9	10.4	11.6	10.0	8.6
8. Jones & Laughlin Steel Corporation	6.2	8.1	10.2	4.5	−.9	−4.0	−2.8	−1.4	−.07	2.6	3.1	4.6
9. Keystone Steel & Wire Co	13.1	15.4	13.4	7.8	4.1	−.2	3.6	13.2	13.4	16.9	13.0	−1.8
10. Otis Steel Co	6.3	11.0	11.3	4.3	−2.5	−6.8	−2.8	4.4	9.1	8.3	8.5	−1.6
11. Sloss-Sheffield Steel & Iron Co	4.7	4.7	3.3	3.3	1.2	−3.1	−.7	.5	.2	3.9	6.5	2.6
12. Superior Steel Corporation	−.9	2.2	2.6	−3.7	−6.3	−9.5	−3.2	−3.8	2.5	10.1	7.0	−6.9
13. Truscon Steel Co	12.9	13.5	13.5	6.6	−4.6	−13.1	−7.1	−2.6	−2.9	4.5	2.8	−5.5
14. U. S. Pipe & Foundry Co	8.7	4.7	6.6	7.9	2.6	−3.6	−.2	2.4	3.5	9.4	8.3	6.2
15. U. S. Steel Corporation	4.5	5.7	9.6	4.9	.8	−3.1	−1.5	−1.0	.4	3.2	5.6	.3
16. Warren Foundry & Pipe Corporation	3.2	1.1	3.0	4.7	7.1	−1.3	3.2	8.9	4.9	10.2	14.3	7.0
17. Youngstown Sheet & Tube Co	5.5	6.9	11.6	5.0	−1.2	−4.6	−2.0	.9	3.1	7.1	7.8	1.1

Source: Standard Statistics Co., Inc. For details, see appendix II, sec. A.

APPENDIX TABLE XIX.—*Percent change in net property (adjusted), 1927–38—Selected steel and iron corporations*

Number and company	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Acme Steel Co	1.5	5.9	30.0	0.7	−4.6	−6.2	−3.2	−3.3	3.8	1.2	20.8	0.7
2. American Rolling Mill Co	12.4	65.2	2.6	17.7	−1.7	−2.6	−1.2	−.6	4.7	12.2	3.5	3.7
3. Bethlehem Steel Corporation (Delaware)	2.7	−2.2	−.3	10.3	5.7	−2.9	−2.6	−2.6	1.3	−1.5	4.7	−1.4
4. Byers (A. M.) Co	−3.2	2.6	40.7	55.7	−1.5	−3.0	−3.2	−3.0	−2.6	−3.0	−3.5	−2.9
5. Castle (A. M.) & Co	(1)	12.4	.0	−1.9	−3.3	−4.1	−2.9	−6.6	11.5	1.6	1.6	−2.3
6. Crucible Steel Co. of America	.4	.4	1.1	7.0	−1.1	−1.2	−1.2	−1.0	−.4	1.3	−1.2	−1.1
7. Inland Steel Co	−.5	−1.7	10.0	8.4	25.1	−.7	−2.9	−2.9	6.9	12.6	21.0	2.7
8. Jones & Laughlin Steel Corporation	7.9	.4	−.6	10.3	3.8	−2.2	−2.8	−1.0	−.8	14.1	6.3	−1.0
9. Keystone Steel & Wire Co	1.1	2.7	8.2	7.4	−1.2	−3.9	−5.2	−2.4	−4.3	−1.1	2.1	−2.2
10. Otis Steel Co	1.3	5.1	.5	−1.2	14.5	−1.1	−3.0	−2.5	−2.9	−3.3	2.1	.3
11. Sloss-Sheffield Steel & Iron Co	.2	−.1	−8.5	−2.2	−3.2	−2.7	−3.5	−4.4	−4.6	−4.3	−3.6	1.7
12. Superior Steel Corporation	−2.6	4.8	1.6	−4.7	−1.6	−2.6	−1.7	−2.8	−3.3	2.1	5.7	27.6
13. Truscon Steel Co	8.9	19.8	13.9	8.4	5.7	−2.2	−.8	−2.5	−.7	−8.0	−1.2	−2.7
14. United States Pipe & Foundry Co	−2.7	−3.5	−3.8	−4.5	−3.9	−4.0	−2.9	−3.0	−3.1	2.5	−.2	−1.1
15. United States Steel Corporation	2.5	−.7	−.4	8.8	.4	−2.0	1.5	−1.7	−1.3	.9	4.5	1.4
16. Warren Foundry & Pipe Corporation	(1)	−3.3	.0	−9.3	−1.9	−4.3	−3.1	1.8	−3.2	−1.9	.9	−2.4
17. Youngstown Sheet & Tube Co	−2.7	5.5	5.4	4.9	−1.4	−3.6	−3.9	2.7	1.6	−1.6	4.6	−1.6

[1] Not available.

Sources and methods: Based largely upon Standard Statistics Co., Inc., and Registration Statements filed with the Securities and Exchange Commission. For other sources and details as to methods, see appendix II, sec. A and chs. IX and XI.

APPENDIX TABLE XX.—*Book value of net property as of the end of the year, 1926–38—Selected steel and iron corporations.*

[Millions of dollars]

Number and company	1926	1927	1928	1929	1930	1931	1932
1. Acme Steel Co	6.08	6.26	6.63	8.62	8.68	8.28	7.77
2. American Rolling Mill Co	32.99	37.37	61.75	64.67	72.84	71.58	69.75
3. Bethlehem Steel Corporation (Delaware)	465.30	477.98	454.32	455.29	502.15	530.81	515.29
4. Byers (A. M.) Co	8.53	8.26	7.78	10.95	18.01	17.61	17.09
5. Castle (A. M.) & Co	(1)	1.37	1.54	1.54	1.51	1.46	1.40
6. Crucible Steel Co. of America	84.64	85.01	85.36	86.26	92.27	91.29	90.22
7. Inland Steel Co	54.05	53.80	52.90	57.84	62.67	78.27	77.69
8. Jones & Laughlin Steel Corporation	114.43	123.42	123.93	123.21	135.94	141.15	138.04
9. Keystone Steel & Wire Co	5.55	5.61	5.76	6.23	6.69	6.61	6.35
10. Otis Steel Co	25.68	26.02	27.34	27.49	27.17	30.17	28.33
11. Sloss-Sheffield Steel & Iron Co	30.80	30.86	30.84	28.22	27.60	26.72	26.01
12. Superior Steel Corporation	4.30	4.19	4.39	4.46	4.25	4.18	4.07
13. Truscon Steel Co	5.71	6.22	7.85	8.94	9.69	10.24	8.76
14. U. S. Pipe & Foundry Co	25.53	24.85	23.98	23.08	22.04	21.19	20.35
15. U. S. Steel Corporation	1,667.39	1,709.78	1,661.12	1,541.19	1,677.33	1,683.98	1,650.81
16. Warren Foundry & Pipe Corporation	(1)	8.70	8.41	8.41	7.63	2.60	2.25
17. Youngstown Sheet & Tube Co	123.64	120.25	126.90	133.73	140.33	138.34	133.33

Number and company	1933	1934	1935	1936	1937	1938
1. Acme Steel Co	7.52	7.27	6.33	6.97	8.42	8.48
2. American Rolling Mill Co	68.88	67.80	70.32	75.93	76.63	79.34
3. Bethlehem Steel Corporation (Delaware)	501.76	485.12	491.38	470.04	492.13	484.35
4. Byers (A. M.) Co	16.55	16.02	15.61	15.14	13.79	12.32
5. Castle (A. M.) & Co	1.36	1.27	1.26	1.28	1.30	1.27
6. Crucible Steel Co. of America	89.10	88.21	87.88	88.99	87.90	86.65
7. Inland Steel Co	73.62	70.56	75.21	84.69	102.24	105.03
8. Jones & Laughlin Steel Corporation	133.40	131.83	130.82	149.23	158.25	157.44
9. Keystone Steel & Wire Co	6.02	5.61	5.37	5.31	5.42	5.30
10. Otis Steel Co	27.49	26.79	26.00	25.13	25.57	25.65
11. Sloss-Sheffield Steel & Iron Co	25.11	22.81	21.77	20.83	20.08	20.43
12. Superior Steel Corporation	4.00	3.89	3.76	3.84	4.06	1.99
13. Truscon Steel Co	8.69	8.47	8.41	7.71	7.65	7.44
14. U. S. Pipe & Foundry Co	19.76	19.17	18.19	18.64	18.68	18.48
15. U. S. Steel Corporation	1,653.92	1,626.14	1,338.52	1,350.04	1,410.43	1,166.52
16. Warren Foundry & Pipe Corporation	2.18	2.22	2.15	2.11	2.13	2.04
17. Youngstown Sheet & Tube Co	127.34	130.72	132.85	130.74	133.88	130.68

[1] Not available.

Sources: Standard Statistics Co., Inc., and Poor's & Moody's Industrial Manuals. For details, see appendix II, sec. A.

APPENDIX TABLE XXI.—*Revaluations of property, 1927–38*[1]*—Selected iron and steel corporations*

Year	Amount	Item
		1. ACME STEEL CO.
1927	+$91,933	Property; amortization reserve decreased to adjust for depreciation disallowed by Internal Revenue.
1935	−1,168,236	Fixed asset appreciation recorded in 1919.
1936	+555,123	Building machinery and equipment; reserves decreased to adjust for depreciation disallowed by Internal Revenue.
		2. AMERICAN ROLLING MILL CO.
1927	+$256,632	Assets acquired in 1921 from Ashland Iron & Mining Co.
1929	+1,661,021	Write-up in assets acquired through merger of Columbia Steel Co.
	−349,167	Property.
1930	+96,350	Leasehold formerly carried at zero.
	−1,351,173	Property.
	−1,507,222	Current year's depreciation.
1934	−255,087	Loss on retirement of property.
	−136,545	Do.
	−248,131	Depreciation on appreciation of property.
1935	−192,606	Loss on retirement of property representing appreciation.
	−244,251	Depreciation on appreciation of property.
	−221,736	Loss on retirement of property.
1936	+91,234	Depreciation adjustment in accordance with Internal Revenue allowances.
	−786,152	Loss on retirement of property.
	−78,807	Loss on retirement of property representing appreciation.
	−1,653,856	Appreciation.
	−231,789	Depreciation on appreciation.
1937	−900,312	Loss on extraordinary abandonments and retirements of property.
	−38,807	Do.
	−939,450	Appreciation on property of a subsidiary.
1938	−5,681	Loss on extraordinary abandonments and retirements of property.
	−104,419	Do.
		3. BETHLEHEM STEEL CORPORATION (DEL.)
1928	+$1,615,782	Property.
	[2] −15,000,000	Do.
1929	+2,131,593	Do.
1934	−3,747,375	Do.
1936	−14,033,793	Do.
1938	−950,000	Land and buildings.
		4. A. M. BYERS CO.
1928	−$684,349	Loss on abandonment of Gerard blast furnace and Pittsburgh puddle mill.
1930	+238,183	Appreciation of property abandoned in prior years.
	−156,200	Net loss on property abandoned.
1931	−125,845	Do.
1934	−34,742	Dismantlement of Orient C. & C. property units.
1937	−854,000	Property; subsidiary to $1.
1938	−1,098,368	Fixed assets.
		5. A. M. CASTLE & CO.
1935	−$142,301	Land.
		6. CRUCIBLE STEEL CO. OF AMERICA
1938	−$285,085	Property.

[1] Only revaluations carried directly to surplus or capital reserves are included. Adjustments made for reasons other than revaluation are also included.

[2] Estimate of part of transfers from surplus to special depreciation reserves for depreciation reported as $31,430,542 for 1924 and 1928 combined.

APPENDIX TABLE XXI.—*Revaluations of property, 1927–38—Selected iron and steel corporations*—Continued

Year	Amount	Item
		7. INLAND STEEL CO.
1929	−$307,577	Loss on property sold.
1931	−79,407	Loss on property dismantled.
1933	−1,851,227	Property; represents amortization of war facilities.
1934	−924,936	Loss on abandoned property.
1935	−193,685	Property abandoned.
1937	−208,058	Property not used in operations.
		8. JONES & LAUGHLIN STEEL CORPORATION
1933	−$797,306	Ore property abandoned.
1934	−150,247	Depreciation; to conform to Federal income tax allowances.
	−94,252	Ore property abandoned.
1937	−319,429	Loss on retirement of fixed assets.
1938	+837,854	Adjustment for consolidation of subsidiary report.
	−100,795	Loss on retirement of fixed assets.
		9. KEYSTONE STEEL & WIRE CO.
1934	−$274,276	Patents (apparently included in property account).
		10. OTIS STEEL CO.
1931	−$828,241	Loss on equipment dismantled.
1932	−1,534,819	Obsolete and unused plant facilities.
1937	−89,260	Loss on equipment dismantled.
		11. SLOSS-SHEFFIELD STEEL & IRON CO.
1934	−$1,240,000	Adjustment for mortgages not shown as a deduction from property in 1933 but either retired or shown as a deduction in 1934.
		12. SUPERIOR STEEL CORPORATION
1938	−$2,500,000	Plant; to eliminate appreciation recorded in 1923.
		13. TRUSCON STEEL CO.
1928	+$325,000	Building and machinery.
1932	−325,000	Reversal of 1928 write-up.
	−548,962	Depreciation charges applicable to prior years.
	−404,026	Dies, tools, and rolls.
		14. UNITED STATES PIPE & FOUNDRY CO.
1935	−$395,774	Demolished plant.
1937	+73,727	Partial reversal of 1935 entry in accordance with determination of tax authorities.
		15. UNITED STATES STEEL CORPORATION
1928	−$30,205,076	Amortization of appreciated cost of investment in subsidiaries in excess of their investment in tangible property.
	−6,500,000	Addition to depreciation reserves for general obsolescence and adjustment of prior year's depreciation accruals.
1929	−88,296,020	Amortization of appreciated cost of investment in subsidiaries in excess of their investment in tangible property.
	−25,000,000	Property write-off.
1933	−21,000,000	Addition to general reserve for plant and property amortization and obsolescence.
1935	−270,000,000	Addition to depreciation reserves and reserve for amortization of tangible property investment.
1938	−260,368,520	Reduction of intangible assets to $1.

APPENDIX TABLE XXI.—*Revaluations of property, 1927–38—Selected iron and steel corporations*—Continued

Year	Amount	Item
	16. WARREN FOUNDRY & PIPE CORPORATION	
1931	−$4,984,495	Property.
1932	−250,000	Property of a subsidiary.
1938	−38,925	Property of inactive subsidiary.
	17. YOUNGSTOWN SHEET & TUBE CO.	
1933	−$803,999	Losses due to cancelation and abandonment of iron ore contracts and leases and sale of other properties.
1937	[3] −2,716,394	Loss on plant and equipment dismantled.
1938	[3] −1,027,387	Do.

[3] Prior to 1937, loss on dismantled property was charged to depreciation reserves.

Sources: Registration Statements and Annual Reports filed with the Securities and Exchange Commission and Poor's and Moody's Industrial Manuals. For details, see appendix II, sec. A.

APPENDIX TABLE XXII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected steel and iron corporations*

Year	Item
	1. ACME STEEL CO.
1928	Constructed building for extension of galvanizing facilities.
1929	Built its third hot strip mill.
1934	Constructed building for additional electro-galvanizing equipment.
1936	Constructed another building for additional electro-galvanizing equipment.
1938	Built a 4 story office and factory building for a reported $1,750,000.
	2. AMERICAN ROLLING MILL CO.
1927	Acquired the controlling interest in Norton Iron Works, taking over property and dissolving Norton in 1928 (Norton not reported by financial services). Acquired half interest in Hamilton Coke & Iron Co., the other 50 percent being owned by The Koppers Co. (Hamilton not reported by financial services). Acquired Columbia Steel Co. of Pennsylvania for $2,500,000 5 percent serial notes, $5,000,000 6 percent preferred stock and $5,000,000 first mortgage. Columbia had been formed shortly before this to acquire the properties of Forged Steel Wheel Co. and 99 percent of stock of Columbia Steel Co. of Elyria, Ohio. (Financial statements of latter companies not published.)
1929	Acquired 100 percent interest in Lyle Culvert & Road Equipment Co. (Not reported by financial services.)
1930	Purchased assets and business of Sheffield Steel Corporation of Delaware for 200,000 shares of common stock ($25 par value) and 25,000 shares of preferred stock ($100 par value). Total assets of Sheffield were $11,137,833; net properties $8,415,069; and 1929 net profit $1,216,880.
1934	Sheffield leased and operated plant of Scullin Steel Co. in St. Louis.
1935	Acquired assets of Calco Iron Pipe Ltd. for 71,494 shares of common. Calco (not reported by financial services) is a holding company with 6 subsidiaries.
1936	Acquired the remaining 50 percent interest in Hamilton Coke & Iron Co. Sheffield leased a plant from Scullin Steel Co. at Sand Springs, Okla.
1936–37	Acquired 47 percent of common and 19 percent of preferred stock of Rustless Iron & Steel.
1937	Acquired 100 percent interest in Steel Buildings, Inc., for $200,000 (not consolidated). Acquired 100 percent interest in Dakota Culvert & Pipe Co. (not reported by financial services). Completed a cold reduction mill and blast furnace and widened an existing hot-strip mill.

APPENDIX TABLE XXII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected steel and iron corporations*—Continued

Year	Item
	3. BETHLEHEM STEEL CORPORATION (DELAWARE) (FORMERLY SUBSIDIARY OF BETHLEHEM STEEL OF NEW JERSEY)
1929	Bethlehem Shipbuilding Corporation (subsidiary of Bethlehem Steel Corporation of New Jersey) purchased the Atlantic Works for assumption (in part payment) of $422,500 first mortgage bonds. Atlantic Works had total assets of $2,234,017; net property $1,717,570; 1927 net income $38,811; and 1926 net loss $58,887.
1930	Bethlehem Steel Corporation (Delaware) at that time called Pacific Coast Steel Corporation (a subsidiary of Bethlehem Steel of New Jersey) acquired all properties and business of Pacific Coast Steel Co. and Southern California Iron & Steel Co. for $20,016,500 in 5-percent bonds plus the assumption of liabilities. As of Dec. 31, 1928, Pacific Coast Steel Co. had total assets of $10,260,642 and net property of $4,843,781; Southern California Iron & Steel had total assets of $3,587,128 and net property of $1,751,928. Both paid dividends in 1928.
	Acquired properties and business of Danville Structural Steel Co. (Not reported by financial services.)
1931	Bethlehem Steel (New Jersey) acquired fabricating properties and business of McClintic-Marshall Corporation for 240,000 shares common, $8,200,000 notes and assumption of liabilities including $12,000,000 of bonds.
	Bethlehem Steel (New Jersey) purchased Levering & Garrigues Co., Hay Foundry & Iron Works, Hidden Iron Construction Co. and (most important) Kalman Steel Co. properties for $5,500,000 bonds and assumption of $240,000 bonds of Kalman. Kalman had total assets of $4,775,802 and property of $2,280,637. Other companies and earnings of Kalman not reported.
1932	Bethlehem Steel (New Jersey) purchased properties and assets of Seneca Iron & Steel Co. for 5,000 preferred and 10,000 common shares and assumption of liabilities (Seneca not reported by financial services).
1936	Acquired 100 percent interest in Taubman Supply Corporation (not reported by financial services).
1937	Purchased Williams Wire Rope Co. properties at receiver's sale for $3,300,000.
1938	Subsidiary purchased shipbuilding and ship repairing facilities of United Shipyards, Inc., for $9,031,872.
	Another subsidiary purchased the International Supply Co. (oil business). Not consolidated.
	Purchased control of Lewis I. Shoemaker & Co. from bondholders' committee for reported $430 per $1,000 bond (Shoemaker statements not published).
	4. A. M. BYERS CO.
1930	Operations at Girard, Ohio, plant permanently discontinued.
1930–31	New plants completed near Pittsburgh.
1931	Spent $11,000,000 constructing a plant designed for the new process substituting mechanical for hand puddling.
1937	Reports not consolidated as in previous years.
	5. A. M. CASTLE & CO.
	6. CRUCIBLE STEEL CO. OF AMERICA
1930	Purchased half interest in ore properties (mines in Minnesota) of Shenango Furnace Co. (Not reflected in property account.)
1936	A subsidiary (National Drawn Steel Co.) completed plant at East Liverpool, Ohio, costing around $2,000,000.
	7. INLAND STEEL CO.
1930	Acquired Wheelright Coal Mine.
1932	New plant at Indiana Harbor costing over $1,800,000 placed in operation.
1933	Construction of facilities at new Indiana Harbor plant completed.
1935	Acquired 100 percent interest in S.T. Ryerson & Son, Inc., for 240,000 shares with cash equivalent of over $8,000,000; Ryerson had net property account of $4,229,143.
1936	Acquired 100 percent interest in Milcor Steel Co. for 59,000 shares with cash equivalent of over $2,000,000: Milcor had net property account of $1,194,869.
1938	Acquired 50 percent interest in Dunwoody Iron Co. (Not reported by financial services.)
	Subsidiary (Milcor Steel) purchased former plant of G. E. in Rochester with 78,000 square feet of floor space (company has total floor space of over 1,000,000 square feet.) Consideration not reported.

APPENDIX TABLE XXII.—*Acquisitions, consolidations, mergers, sales, etc., 1927–38—Selected steel and iron corporations*—Continued

Year	Item
	8. JONES & LAUGHLIN STEEL CORPORATION
	(No data as to acquisitions, etc.)
1937	Company spent $17,770,000 for capital improvements.
1938	Company spent $3,337,000 for capital improvements.
	9. KEYSTONE STEEL AND WIRE CO.
1929	Acquired outstanding interest (69 percent) in National Lock Co. and controlling interest in Mid-States Steel & Wire Co. (Neither company consolidated.)
1935	Plan for reorganization of National Lock under 77b declared effective (July).
	10. OTIS STEEL CO.
	11. SLOSS-SHEFFIELD STEEL & IRON CO.
	12. SUPERIOR STEEL CORP.
	13. TRUSCON STEEL CO.
1928	Purchased properties, plant and business of Hydraulic Steel Co. at receiver's sale—total assets approximately $4,800,000; property $3,670,000. Hydraulic showed net losses during several years prior to acquisition.
1929	Sold substantial portion of holdings in Truscon Steel Co. of Canada, Ltd., reducing holdings to about 30 percent of common.
1936	Sold Truscon Laboratories Division to Varnishes & Paints Inc.
1937	Sold Indiana Culvert division to Indiana Toncan Culvert Co.
	14. U. S. PIPE AND FOUNDRY CO.
1931	Scottdale Connecting Railroad Co. (a subsidiary) ceased operations. (Demolished in 1935 and liquidated in 1936.)
	15. UNITED STATES STEEL CORPORATION
1930	Purchased assets and business of Atlas Portland Cement Co. (appraised at not less than $31,137,000) for 176,265 common shares.
	Purchased properties and business of Columbia Steel Co. (appraised at not less than $41,375,000) for 251,771 common shares.
	Purchased properties and business of Oil Well Supply Co. (appraised at $19,057,930) for 108,402 common shares.
1931	Acquired business and smelting plant of Edgar Zinc Co. (through a subsidiary).
	Purchased property (including mines) of Pittsburgh and Erie Coal Co. (through a subsidiary).
1937	Sold 5 Canadian subsidiaries having properties in that country to Dominion Steel & Coal Co., Ltd., for cash and mortgage bonds. Net property of the subsidiaries was about $9,000,000. (NOTE.—During the past 5 years United States Steel and subsidiaries have spent nearly $300,000,000 on new plant and equipment—about ⅔ since 1936, while depreciation charged to income has been over $250,000,000.)
	16. WARREN FOUNDRY & PIPE CORPORATION
1927	Organized to take over the business and assets of Replogle Steel Co.
1929	Disposed of its inactive coal mining properties in West Virginia.
1930	Sold Wharton & Northern Railroad and ⅔ interest in Mount Hope Mineral Railroad to Central Railroad of New Jersey (consideration not reported).
	17. YOUNGSTOWN SHEET & TUBE CO.
1932	Acquired remaining ⅓ interest (not previously owned) in the Brule Mining Co.
1933	Plant at Warren, Ohio, dismantled.
1937	Acquired buttonweld pipe manufacturing business of Clayton Mark & Co. (no consolidation).
	Installed various mills and equipment costing $13,097,631.
	Dismantled property valued at $7,973,191.

Sources: Poor's and Moody's Industrial Manuals and Registration Statements and Annual Reports filed with the Securities and Exchange Commission. For details, see appendix II, sec. A.

APPENDIX III

COLLATERAL DATA

APPENDIX TABLE XXIII.—*Profit rate on net worth, 1900–14—Selected Industrial corporations; unweighted averages*

[Percent of net worth]

Year	Total	Producers of nondurable goods	Producers of durable goods	Year	Total	Producers of nondurable goods	Producers of durable goods
Number of companies	24	10	14	Number of companies	24	10	14
1914	5.60	5.97	5.34	1906	8.34	8.47	8.25
1913	6.16	5.78	6.43	1905	7.09	7.39	6.87
1912	6.20	6.61	5.91	1904	6.45	7.71	5.56
1911	7.10	8.26	6.27	1903	7.57	7.03	7.96
1910	7.26	8.26	6.55	1902	8.25	6.94	9.19
1909	6.89	8.05	6.07	1901	7.72	7.31	8.02
1908	6.07	7.51	5.05	1900	8.34	6.72	9.69
1907	7.90	8.51	7.46				

Source: Epstein, E. I., and R. A. Gordon, "Profits of Selected American Industrial Corporations, 1900-1914," The Review of Economic Statistics, vol. XXI, No. 3. (August 1939), table I, p. 125.

APPENDIX TABLE XXIV.—*Indexes of net profits of industrial, railroad, and utility corporations, by quarters, 1924–39*

[Quarterly average 1926=100]

Year and quarter	Total	Industrials	Railroads	Public utilities
Number of companies		120	26	15
1939 average	75.9	79.3	13.6	123.1
Fourth quarter	114.5	118.8	74.2	135.9
Third quarter	66.6	63.5	34.2	116.7
Second quarter	62.0	69.8	−28.5	114.9
First quarter	60.4	65.0	−25.4	124.7
1938 average	46.2	45.2	−18.4	107.1
Fourth quarter	76.7	69.3	31.9	123.0
Third quarter	38.5	34.4	2.0	90.7
Second quarter	36.8	40.4	−44.5	102.5
First quarter	32.8	36.6	−63.0	112.1
1937 average	95.4	106.1	14.0	125.8
Fourth quarter	78.7	81.4	9.8	135.9
Third quarter	98.4	111.4	24.6	109.7
Second quarter	110.4	127.8	12.5	125.1
First quarter	93.9	103.6	9.1	132.4
1936 average	89.0	95.7	25.2	121.0
Fourth quarter	115.1	114.6	74.8	158.4
Third quarter	84.4	89.2	39.7	106.5
Second quarter	92.5	108.1	2.7	107.4
First quarter	64.0	71.0	−16.4	111.5
1935 average	56.9	61.4	−0.5	93.1
Fourth quarter	78.8	81.3	37.5	108.8
Third quarter	50.2	54.9	−2.8	80.7
Second quarter	55.2	62.6	−10.9	86.2
First quarter	43.4	46.9	−25.7	96.5
1934 average	38.1	36.5	−4.3	88.7
Fourth quarter	28.2	20.0	2.7	94.8
Third quarter	34.5	35.5	−6.3	76.9
Second quarter	50.7	55.2	−4.6	84.5
First quarter	38.8	35.3	−9.0	102.4

APPENDIX TABLE XXIV.—*Indexes of net profits of industrial, railroad, and utility corporations, by quarters, 1924–39*—Continued

Year and quarter	Total	Industrials	Railroads	Public utilities
Number of companies		120	26	15
1933 average	29.4	21.9	—2.0	97.8
Fourth quarter	35.0	25.1	14.0	104.8
Third quarter	52.1	46.7	38.1	92.3
Second quarter	34.0	29.0	−3.8	96.7
First quarter	−3.7	−13.4	−56.4	97.5
1932 average	9.6	−1.6	−22.3	96.9
Fourth quarter	3.5	−14.4	8.3	86.4
Third quarter	3.9	−5.9	−23.1	79.7
Second quarter	12.6	6.0	−41.9	100.0
First quarter	18.4	8.0	−32.3	121.3
1931 average	45.1	34.1	20.9	123.6
Fourth quarter	20.9	2.9	10.6	119.5
Third quarter	44.8	36.2	27.4	104.5
Second quarter	61.3	54.2	29.0	129.1
First quarter	53.4	43.1	16.6	141.3
1930 average	87.8	82.6	73.8	127.7
Fourth quarter	63.1	46.1	74.3	135.3
Third quarter	83.8	76.8	89.9	111.7
Second quarter	105.1	106.8	74.6	127.4
First quarter	99.3	100.7	56.2	136.5
1929 average	136.7	139.1	119.4	142.6
Fourth quarter	119.3	109.0	128.8	159.8
Third quarter	150.5	154.8	153.6	125.5
Second quarter	150.9	162.0	112.6	135.2
First quarter	126.1	130.7	82.7	149.8
1928 average	117.5	119.3	102.2	124.0
Fourth quarter	124.5	119.2	132.0	142.4
Third quarter	128.0	132.8	122.1	110.2
Second quarter	117.6	124.4	84.5	117.9
First quarter	99.9	100.9	70.2	125.3
1927 average	95.5	94.1	90.8	106.9
Fourth quarter	86.8	78.4	96.8	117.4
Third quarter	100.2	98.9	112.9	93.3
Second quarter	102.2	106.1	81.0	104.9
First quarter	92.6	92.9	72.4	111.8
1926 average	100.0	100.0	100.0	100.0
Fourth quarter	98.4	92.7	111.8	112.7
Third quarter	110.2	110.1	130.8	89.3
Second quarter	100.3	103.7	90.2	94.3
First quarter	91.1	93.4	67.2	103.7
1925 average	83.8	82.6	86.0	87.3
Fourth quarter	87.9	83.0	97.5	101.6
Third quarter	91.2	89.0	114.7	77.8
Second quarter	85.2	88.1	73.4	82.6
First quarter	70.9	70.2	58.5	87.2
1924 average	62.9	60.4	67.3	70.5
Fourth quarter	65.8	57.9	88.5	81.3
Third quarter	56.4	51.4	77.5	59.8
Second quarter	58.2	58.1	49.7	67.0
First quarter	71.1	74.2	53.3	73.7

Source: Standard Statistics Co., Inc.

APPENDIX TABLE XXV.—*Profits and losses of corporations, 1920–37 (intercorporate dividends included)*

[Millions of dollars]

Year	Compiled net profit of all corporations [1]	Total profit of corporations with profits [1]		Total loss of corporations with losses		Range between limits (non statutory income of corporations with no statutory net income)
		Upper limit [2]	Lower limit [3]	Upper limit [4]	Lower limit [5]	
1937	6,554	8,835	8,572	2,281	2,018	263
1936	6,580	8,732	8,535	2,152	1,955	197
1935	4,688	8,157	6,119	3,469	1,431	2,038
1934	2,374	6,555	4,818	4,181	2,444	1,737
1933	−1,353	4,180	3,157	5,533	4,510	1,023
1932	−4,115	3,681	2,451	7,796	6,566	1,230
1931	−1,176	5,795	4,352	6,971	5,528	1,443
1930	3,937	8,814	7,830	4,877	3,893	984
1929	10,676	13,591	13,081	2,915	2,405	510
1928	9,482	11,873	11,446	2,391	1,964	427
1927	7,538	10,010	9,563	2,472	2,025	447
1926	8,280	10,450	10,085	2,170	1,805	365
1925	8,147	10,109	9,793	1,962	1,646	316
1924	5,914	8,138	7,811	2,224	1,897	327
1923	6,697	8,711	8,392	2,014	1,695	319
1922	5,183	7,377	------	2,194	------	------
1921	533	4,411	------	3,878	------	------
1920	4,874	6,903	------	2,029	------	------

[1] Excludes Federal income and war, excess, and undistributed profits taxes.
[2] Compiled net profit of corporations with statutory net income plus nonstatutory income of corporations with no statutory net income.
[3] Compiled net profit of corporations with statutory net income.
[4] Compiled net loss of corporations with no statutory net income.
[5] Compiled net loss of corporations with no statutory net income less nonstatutory income of those corporations with no statutory net income.

Sources: Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods, see APPENDIX I, Section A.

APPENDIX TABLE XXVI.—*Profits of 951 industrial, utility, and railroad corporations, and of all corporations, 1926–38—After taxes; intercorporate dividends included*

Year	All corporations	Selected industrial, utility, and railroad corporations			
		Total	Industrials	Utilities	Railroads
Number of corporations		951	728	82	141
	Amount in millions of dollars				
1938		1,648	1,359	412	−123
1937	6,554	3,243	2,657	488	98
1936	6,580	3,041	2,402	473	166
1935	4,688	1,997	1,611	378	8
1934	2,374	1,442	1,113	346	−17
1933	−1,353	1,092	735	363	−6
1932	−4,115	375	98	416	−139
1931	−1,176	1,402	714	553	135
1930	3,937	2,955	1,842	589	524
1929	10,677	4,813	3,319	597	897
1928	9,483	4,125	2,823	515	787
1927	7,538	3,327	2,210	444	673
1926	8,280	3,700	2,492	399	809
	Percent distribution				
1937	100.0	49.5	40.6	7.4	1.5
1936	100.0	46.2	36.5	7.2	2.5
1935	100.0	42.6	34.3	8.1	.2
1934	100.0	60.8	46.9	14.6	[1] −.7
1933	100.0	[3] −80.7	[3] −54.2	[3] −26.9	[3] .4
1932	100.0	[2] −9.1	[2] −2.4	[2] −10.1	[3] 3.4
1931	100.0	[2] −119.2	[2] −60.7	[2] −47.0	[3] −11.5
1930	100.0	75.1	46.8	15.0	13.3
1929	100.0	45.1	31.1	5.6	8.4
1928	100.0	43.5	29.8	5.4	8.3
1927	100.0	44.1	29.3	5.9	8.9
1926	100.0	44.7	30.1	4.8	9.8

[1] Loss as percentage of profit.
[2] Profit as percentage of loss.
[3] Loss as percentage of loss.

Sources: All corporations—U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes; 951 corporations—Standard Statistics Co., Inc., Standard Trade and Securities, "Statistics Section," vol. 93, No. 16, sec. 2.

APPENDIX TABLE XXVII.—*Profits of 463 industrial, utility, and railroad corporations and of all corporations, 1927–38—After taxes; intercorporate dividends included*

Year	All corporations	Selected industrial, utility, and railroad corporations			
		Total	Industrials	Utilities	Railroads
Number of corporations		463	400	21	42
	Amount in millions of dollars				
1938		1,328	1,198	223	−93
1937	6,554	2,750	2,412	253	85
1936	6,580	2,554	2,142	251	161
1935	4,688	1,674	1,427	229	18
1934	2,374	1,150	950	206	−6
1933	−1,353	852	627	226	−1
1932	−4,115	227	61	260	−94
1931	−1,176	1,081	623	345	113
1930	3,937	2,558	1,743	365	450
1929	10,677	4,158	3,065	353	740
1928	9,483	3,587	2,643	307	637
1927	7,538	2,800	1,988	251	561
	Percent distribution				
1937	100.0	42.0	36.8	3.9	1.3
1936	100.0	38.8	32.5	3.8	2.5
1935	100.0	35.7	30.4	4.9	.4
1934	100.0	48.4	40.0	.8.7	[1] −.3
1933	100.0	[1] −63.0	[1] −46.4	[1] 16.7	[2] .1
1932	100.0	[1] −5.5	[1] −1.5	[1] −6.3	[2] 2.3
1931	100.0	[1] −91.9	[1] −53.0	[1] −29.3	[2] −9.6
1930	100.0	65.0	44.3	9.3	11.4
1929	100.0	38.9	28.7	3.3	6.9
1928	100.0	37.8	27.9	3.2	6.7
1927	100.0	37.2	26.4	3.3	7.5

[1] Loss as percentage of profit.
[2] Profit as percentage of loss.
[3] Loss as percentage of loss.

Sources: All corporations—U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes; 463 corporations—Standard Statistics Co., Inc., Standard Trade and Securities, "Statistics Section," vol. 93, No. 16, sec. 2.

APPENDIX TABLE XXVIII.—*Profits of 109 industrial and railroad corporations and of all corporations, 1914–26—After taxes; intercorporate dividends included.*

Year	All corporations	Selected industrial and railroad corporations		
		Total	Industrials	Railroads
Number of corporations	.....	109	68	41
		Amount in millions of dollars		
1926	8,280	1,354	724	630
1925	8,146	1,229	693	536
1924	5,913	1,008	569	439
1923	6,697	1,037	599	438
1922	5,183	743	462	281
1921	533	499	215	284
1920	4,874	304	544	−240
1919	6,683	547	546	1
1918	4,974	725	533	192
1917	7,942	1,183	741	442
1916	7,908	1,292	803	489
1915	4,443	770	375	395
1914	2,721	456	208	248
		Percent distribution		
1926	100.0	16.4	8.8	7.6
1925	100.0	15.1	8.5	6.6
1924	100.0	17.1	9.7	7.4
1923	100.0	15.5	8.9	6.5
1922	100.0	14.3	8.9	5.4
1921	100.0	93.6	40.3	53.3
1920	100.0	6.2	11.1	[1] −4.9
1919	100.0	8.2	8.2	.0
1918	100.0	14.6	10.7	3.9
1917	100.0	14.9	9.3	5.6
1916	100.0	16.3	10.1	6.2
1915	100.0	17.3	8.4	8.9
1914	100.0	16.8	7.7	9.1

[1] Loss as percentage of profit.

Source: All corporations—Based largely upon U. S. Treasury Department, Bureau of Internal Revenue, Statistics of Income, annual volumes. For other sources and details as to methods, see Appendix I, sec. A; 109 corporations—Standard Statistics Co., Inc., Standard Trade and Securities, "Statistics Section," vol. 93, No. 16, sec. 2.

APPENDIX TABLE XXIX.—*Profit rate on net worth of 400 industrial and 21 utility corporations, 1927–38*

[Money figures in millions of dollars]

Year	400 industrial corporations			21 utility corporations		
	Net worth, end of year	Profits [1]		Net worth, end of year	Profits [1]	
		Amount	Percent of net worth		Amount	Percent of net worth
1938	$23,617	$1,198	5.07	$4,252	$223	5.24
1937	23,584	2,412	10.23	4,283	253	5.91
1936	22,646	2,142	9.46	4,273	251	5.87
1935	22,019	1,427	6.48	4,456	229	5.14
1934	22,120	950	4.29	4,487	206	4.59
1933	22,746	627	2.76	4,485	226	5.04
1932	23,059	61	.26	4,522	260	5.75
1931	24,812	623	2.51	4,679	345	7.37
1930	26,151	1,743	6.67	4,533	365	8.05
1929	25,705	3,065	11.92	4,042	353	8.73
1928	23,215	2,643	11.38	3,541	307	8.67
1927	21,690	1,988	9.17	3,028	251	8.29

[1] After taxes.

Source: Standard Statistics Co., Inc., Standard Trade and Securities, "Statistics Section," vol. 93, No. 16 sec. 2.

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